# APPENDIX D

# Data Verification Report

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| °C | Degrees Celsius |
| % REC | Percent Recovery |
| µg/kg | Micrograms per kilogram |
| µg/L | Micrograms per liter |
| BGS | Below Ground Surface |
| BHC | Hexachlorocyclohexane |
| Bldg | Building |
| CC | Army Environmental Compliance-Related Cleanup Program |
| CCB | Continuing Calibration Blank |
| CCV | Continuing Calibration Verification |
| COC | Chain of Custody |
| DDD | Dichlorodiphenyldichloroethane |
| DDE | Dichlorodiphenyldichloroethylene |
| DDT | Dichlorodiphenyltrichloroethane |
| DI | Deionized |
| DL | Detection Limit |
| DoD | Department of Defense |
| DRO | Diesel Range Organics |
| DSB | Deep Soil Boring |
| DU | Decision Unit |
| DVR | Data Verification Report |
| DVRW | Data Verification Report Worksheets |
| ECC | Environmental Chemical Corporation |
| ELAP | Environmental Laboratory Accreditation Program |
| EPA | Environmental Protection Agency |
| ER | Equipment Rinsate |
| FD | Field Duplicate |
| FWSAP | Facility-Wide Sampling and Analysis Plan |
| FWQAPP | Facility-Wide Quality Assurance Project Plan |
| GRO | Gasoline Range Organic |
| ICB | Initial Calibration Blank |
| ICV | Initial Calibration Verification |
| ID | Identification |
| ISM | Incremental Sampling Methodology |
| J | Estimated |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| MB | Method Blank |
| MeOH | Methanol |
| mg/kg | Milligrams per kilogram |
| MRL | Method Reporting Limit |
| MS | Matrix Spike |

## ACRONYMS AND ABBREVIATIONS (CONTINUED)

| | |
|---|---|
| No. | Number |
| PCB | Polychlorinated Biphenyls |
| PDS | Post Digestion Spike |
| PETN | Pentaerythritol Tetranitrate |
| QA | Quality Assurance |
| QAPP | Quality Assurance Project Plan |
| QC | Quality Control |
| QSM | Quality Systems Manual |
| R | Rejected |
| RPD | Relative Percent Difference |
| RVAAP | Ravenna Army Ammunition Plant |
| SAIC | Science Applications International Corporation |
| SB | Soil Boring |
| SDG | Sample Delivery Group |
| SI | Site Inspection |
| SIM | Selected Ion Monitoring |
| SOP | Standard Operating Procedure |
| SorW | Source Water |
| SW | Solid Waste |
| SVOC | Semi-volatile Organic Compound |
| TB | Trip Blank |
| TPH | Total Petroleum Hydrocarbon |
| U | Undetected |
| UJ | Not detected, with estimated reporting limit |
| USACE | United States Army Corps of Engineers |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile organic compound |

# 1.0 INTRODUCTION

This Data Verification Report (DVR) presents the results of an analytical data review and verification conducted by Environmental Chemical Corporation (ECC) in support of the site investigation at CC (Army Environmental Compliance-Related Cleanup Program) RVAAP (Ravenna Army Ammunition Plant)-83 Former Buildings 1031 and 1039. Project data verification followed the direction provided in the Facility-Wide Quality Assurance Project Plan (FWQAPP), which is part of the Facility-Wide Sampling and Analysis Plan (FWSAP) (SAIC 2011). Protocol for analytical data verification and validation has been updated to the following references:

- Departmental of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, 2010 Version 4.2 (DoD QSM 2010)
- U.S. Army Corps of Engineers (USACE), Louisville District QSM Supplement (USACE 2007)
- United States Environmental Protection Agency (USEPA) National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540/R-08-01, June 2008 (USEPA 2008)
- USEPA National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-10-011, January 2010 (USEPA 2010)
- Quality Assurance Project Plan (QAPP) for Site Inspections and Remedial Investigations at Compliance Restoration Sites, July 2012 (ECC 2012)

All data were verified by ECC in accordance with the FWQAPP using ECC's automated electronic verification software and manual methods.

All incremental sampling methodology (ISM) samples were prepared for analysis, and all soil analyses were performed, by CT Laboratory of Baraboo, Wisconsin. The sample delivery group (SDG) associated with CC RVAAP-83 field sample data is 99211. Source water and equipment rinsate analyses were performed respectively by Test America Laboratories and CT Laboratory. Both laboratories are DoD Environmental Laboratory Accreditation Program (ELAP) certified. See Table 1-1 for a sample summary and Table 1-2 for a summary of sampling activities.

The sampling activities conducted in support of this project are presented in Section 1.0 Introduction. The data verification findings are presented in Section 2.0 Data Quality Verification Results, and the supporting Data Verification Report Worksheets (DVRW) are provided in Appendix D Worksheets 1 through 5. Section 3.0 Overall Assessment provides the field, analytical, and project completeness, and Section 4.0 References presents the data verification guidance used for this project. All analytical results with final qualifiers are presented in Appendix E.

## 1.1 Sampling Activities

The total number of field and quality control (QC) samples collected by media is presented in Table 1-1.

**Table 1-1: Sample Summary**

| Matrix | Number of Field Samples | Number of Field Duplicates | Number of MS/MSD | Number of Associated Trip Blanks | Total Number of Samples |
|---|---|---|---|---|---|
| Subsurface Soil | 14 | 1 | 1 | 3 | 19 |

Notes:
MS/MSD = Matrix Spike/Matrix Spike Duplicate

A complete list of the sample locations, the corresponding sample identification (ID) numbers, and the requested analyses for the decision units (DU) are presented in Table 1-1. In addition, locations for the collection of the field duplicate (FD) sample, the matrix spike (MS)/matrix spike duplicate (MSD) sample pair, and quality assurance (QA) split sample are presented.

## 1.2 Laboratory Activities

A list of extraction and analytical methods are presented in Table 1-3.

**Table 1-2: Sampling Activities Summary**

| Site No. | Depth (ft bgs) | SDG | Sample ID | Decision Unit | Location | Date | COC No. | FD | MS/ MSD | FULL SUITE | VOC | SVOC | TPH GRO | TPH DRO | TAL Metals | PCB | Pesticides | Hexavalent Chromium | Herbicides | Explosives | Propellants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subsurface Soil** | | | | | | | | | | | | | | | | | | | | | |
| CC RVAAP-83 | 1-4 ft | 99211 | 083SB-0001M-0001-SO | DU01 | Bldg 1039 Lab | 12-Aug-13 | CT0002 | | | | | X | | | X | | | | | X | X |
| CC RVAAP-83 | 1-4 ft | 99211 | 083SB-0001M-0001-SO | DU01 | Bldg 1039 Lab | 14-Aug-13 | CT0002 | | | | X | | | | | | | | | | |
| CC RVAAP-83 | 4-7 ft | 99211 | 083SB-0002M-0001-SO | DU01 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-7 ft | 99211 | 083SB-0002M-0001-SO | DU01 | Bldg 1039 Lab | 14-Aug-13 | CT 0001 | | | | X | | | | | | | | | | |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0003M-0001-SO | DU01 SB01 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0004M-0001-SO | DU01 SB02 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0004M-0002-SO | MS/MSD of DU01 SB02 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | X | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0005M-0001-SO | DU01 SB03 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0006M-0001-SO | FD of DU01 SB03 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | X | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | QA lab assigned | 083SB-0007M-0001-SO | QA at DU01 SB03 | Bldg 1039 Lab | 12-Aug-13 | A 37486 /A | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0008M-0001-SO | DU01 SB04 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0009M-0001-SO | DU01 SB05 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | QA lab assigned | 083SB-0010M-0001-SO | QA at DU01 SB05 | Bldg 1039 Lab | 12-Aug-13 | A 37486 /A | | | | | X | | | X | | | | | X | |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0011M-0001-SO | DU01 SB06 | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0012M-0001-SO | DU01 SB07 Full Suite | Bldg 1039 Lab | 12-Aug-13 | CT 0001 | | | X | X | X | | | X | X | X | | | X | X |
| CC RVAAP-83 | 4-10 ft vertical ISM | 99211 | 083SB-0013M-0001-SO | DU01 SB08 | Bldg 1039 Lab | 12-Aug-13 | CT0002 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | DSB 7-13 ft | 99211 | 083SB-0014-0001-SO | DU01 SB05 | Bldg 1039 Lab | 12-Aug-13 | CT0002 | | | | X | X | | | X | | | | | X | X |
| CC RVAAP-83 | 7-10 ft | 99211 | 083SB-0015M-0001-SO | DU01 | Bldg 1039 Lab | 12-Aug-13 | CT0002 | | | | | X | | | X | | | | | X | X |
| CC RVAAP-83 | 7-10 ft | 99211 | 083SB-0015M-0001-SO | DU01 | Bldg 1039 Lab | 14-Aug-13 | CT0002 | | | | X | | | | | | | | | | |

**Table 1-2: Sampling Activities Summary (Continued)**

| Site No. | Depth (ft bgs) | SDG | Sample ID | Decision Unit | Location | Date | COC No. | FD | MS/ MSD | FULL SUITE | VOC | SVOC | TPH GRO | TPH DRO | TAL Metals | PCB | Pesticides | Hexavalent Chromium | Herbicides | Explosives | Propellants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Field Quality Control – Trip Blanks** | | | | | | | | | | | | | | | | | | | | | |
| CC RVAAP-83 | NA | 99211 | 083SB-0016-0001-TB | TB-1 | NA | 12-Aug-13 | CT 0002 | | | | X | | | | | | | | | | |
| CC RVAAP-83 | NA | 99211 | 083SB-0018-0001-TB | TB-2 | NA | 12-Aug-13 | CT 0002 | | | | X | | | | | | | | | | |
| CC RVAAP-83 | NA | 99211 | 083SB-0020-0001-TB | TB-3 | NA | 14-Aug-13 | CT 0005 | | | | X | | | | | | | | | | |
| CC RVAAP-83 | NA | QA lab assigned | 083SB-0017-0001-TB | QA TB-1 | NA | 12-Aug-12 | A 37486 /A | | | | X | | | | | | | | | | |
| 2012-2013 SI Sampling Event | NA | 240-18735-1/-2 | 070-0060-0001-TB | QC TB-1 | NA | 12-Dec-12 | 50743 | | | | X | | | | | | | | | | |
| 2012-2013 SI Sampling Event | NA | 240-18735-1/-2 | 070SB-0055-0001-TB | QC TB-2 | NA | 12-Dec-12 | 50743 | | | | | | X | | | | | | | | |
| 2013 Subsurface Sampling Event | NA | 240-21987-1 | 079-0008-0001-TB | QC TB-5 | NA | 14-Mar-13 | 48788 | | | | X | | | | | | | | | | |
| 2013 Subsurface Sampling Event | NA | 240-21987-1 | 079-0009-0001-TB | QC TB-6 | NA | 14-Mar-13 | 48788 | | | | | | X | | | | | | | | |
| 2013 SI Sampling Event | NA | 99335 | 083SB-0004-0001-TB | QC TB-11 | NA | 15-Aug-13 | CT 0006 | | | | X | | | | | | | | | | |
| **Field Quality Control – Source Water** | | | | | | | | | | | | | | | | | | | | | |
| All 2012-2013 Sampling Events | non-dedicated hand sampling tools | 240-18735-1/-2 | 070-0057-0001-Source Water | Source Water (ECC bottled decontamination water) | SorW-1 | 12-Dec-12 | 50743 | | | | X | X | X | X | X | X | X | | X | X | X |
| 2013 Subsurface Sampling Event | Direct Push Tools | 240-21987-1 | 079-0007-0001-Source Water | Source Water (Driller decontamination water) | SorW-3 | 14-Mar-13 | 48788 | | | | X | X | X | X | X | X | X | X | X | X | X |

**Table 1-2: Sampling Activities Summary (Continued)**

| Site No. | Depth (ft bgs) | SDG | Sample ID | Decision Unit | Location | Date | COC No. | FD | MS/ MSD | FULL SUITE | VOC | SVOC | TPH GRO | TPH DRO | TAL Metals | PCB | Pesticides | Hexavalent Chromium | Herbicides | Explosives | Propellants |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Field Quality Control -Equipment Rinsate** | | | | | | | | | | | | | | | | | | | | | |
| 2013 Sampling Event | non-dedicated hand sampling tools during sampling event | 99335 | 083SB-0023-0001-ER | Equipment Rinsate Blank | ER-4 | 15-Aug-13 | CT 0006 | | | | X | X | X | | X | X | X | | | X | X |

Notes:
ID = Identification
SB = Soil Boring
DSB = Deep Soil Boring
ISM = Incremental Sampling Methodology
Bldg = Building
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
COC = Chain of Custody
TAL = Target Analyte List
No. = Number
PCB = Polychlorinated Biphenyls
FD = Field Duplicate
DU = Decision Unit
TPH = Total Petroleum Hydrocarbon
VOC = Volatile Organic Compound
SVOC = Semi-volatile Organic Compound
SDG = Sample Delivery Group
ft bgs = feet below ground surface
MS/MSD = Matrix Spike/Matrix Spike Duplicate
Propellants include nitroguanidine, nitrocellulose, and nitroglycerin.
QA = Quality Assurance
ER = Equipment Rinsate
SorW= Source Water
QC = Quality Control
TB = Trip Blank
NA = Not Applicable

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## Table 1-3: Sample Preparation and Analytical Methods

| Soil/Dry Sediment | | | |
|---|---|---|---|
| **Analytical Group** | **Analytical Method** | **Sample Preparation Method** | **Holding Time to Extraction/Holding Time to Analysis** |
| VOC[1] | SW8260C[3] | SW5035 | DI Water 48 hours to analysis or freezing<br>MeOH or freezing/14 days |
| SVOC[2] | SW8270D/SW8270D SIM[3] | SW3550 | 14 days/40 days |
| TAL Metals | Metals SW6010C[3] | SW3015 | 180 days |
| | Mercury SW7471B[3] | SW7471B | 28 days |
| PCB | SW8082A[3] | SW3540C | 14 days/40 days |
| Pesticides | SW8081B[3] | SW3546 | 14 days/40 days |
| Explosives | SW8330B[3] | SW8330B | 14 days/40 days |
| Propellants[4] | Nitrocellulose EPA 9056 Modified[3] | EPA 9056 Modified | 28 days |
| | Nitroguanidine EPA SW8330B[3] | SW8330 | 14 days/40 days |
| **Aqueous** | | | |
| **Analytical Group** | **Analytical Method** | **Sample Preparation Method** | **Holding Time to Extraction/Holding Time to Analysis** |
| VOC[1] | SW8260B | SW5030B | 14 days |
| | SW826C[3] | SW5030B | 14 days |
| SVOC[2] | SW8270C / DoD | SW3520C | 7 days/40 days |
| | SW8270D[3] | SW3510C | 7 days/40 days |
| TPH-GRO | SW8015B-GRO / DoD | SW5030B | 14 days |
| | SW8015C-GRO[3] | SW5030B | 14 days |
| TPH-DRO | SW8015B-DRO / DoD | SW3520C | 7 days/40 days |
| TAL Metals | SW6020 / DoD | SW3005A | 180 days |
| | SW6010C[3] | SW3010A | 180 days |
| | SW7470A / DoD | SW7470A | 28 days |
| | SW7470A[3] | SW7470A | 28 days |
| PCB | SW8082 / DoD | SW3520C | 7 days/40 days |
| | SW8082A[3] | SW3520C | 7 days/40 days |
| Pesticides | SW8081 /DoD | SW3520C | 7 days/40 days |
| | SW8081B[3] | SW3520C | 7 days/40 days |
| Herbicides | SW8151A | SW3510 | 7 days/40 days |
| Explosives | SW8330B | SW8330 | 7 days/40 days |
| Propellants[4] | Nitroguanidine SW8330 Modified | SW8330 | 7 days/40 days |
| | Nitroguanidine SW8330B[3] | SW8330 | 7 days/40 days |
| | Nitrocellulose-TestAmerica West Sacramento Facility SOP-WC-0050 | EPA 353.2 | 28 days |
| | Nitrocellulose – SW9056M[3] | EPA 353.2 | 28 days |
| Hexavalent Chromium | SW7196A | SW7196A | 48 hours |

## Table 1-3: Sample Preparation and Analytical Methods (Continued)

Notes:
All soil and dry sediment samples, except for VOCs, undergo incremental sample preparation by air drying, then passed through a rotary hammer mill, and sieve.
(1)Includes benzene, ethylbenzene, toluene, total xylenes, and methyl tertiary-butyl ether (MTBE)
(2)Includes polycyclic aromatic hydrocarbons
(3) = Analytical method performed only by CT Laboratory; other methods are for Test America Laboratory or CT Laboratory analysis of equipment rinsate blank.
(4)Propellant nitroglycerin reported by explosives method (SW8330B)

EPA = Environmental Protection Agency
VOC = Volatile Organic Compound
SVOC = Semi-volatile Organic Compound
TAL = Target Analyte List
TPH = Total Petroleum Hydrocarbon
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
PCB = Polychlorinated Biphenyls
SW = Solid Waste
DoD = Department of Defense
SIM – Selected Ion Monitoring
DI = Deionized
MeOH = Methanol

## 2.0 DATA QUALITY VERIFICATION RESULTS

Data verification is a systematic automated and manual review of all project data for compliance with the FWQAPP Section 10.2.1. This section provides highlights of significant data verification findings (i.e. rejected results, matrix issues), which are discussed in the applicable section below and presented in the referenced tables. The reference tables are a summary of all reported data. The DVRWs provide specific details such as acceptance ranges, and spike values for automated parameters. The following parameters are evaluated during data verification:

- Holding time
- Blanks (method blank [MB], initial calibration blank [ICB], and/or continuing calibration blank [CCB])
- Serial Dilution
- Post Digestion Spike
- Internal Standards
- Laboratory control samples (LCS)
- Method Reporting Limit (MRL) check
- Calibration (initial calibration, continuing calibration verification [CCV], and initial calibration verification [ICV])
- Surrogates
- Matrix spike (MS)/matrix spike duplicates (MSD)
- Field duplicate results
- Laboratory case narrative
- Dual column relative percent difference (RPD)
- Sample re-analysis and secondary dilutions
- Trip Blanks (TB)
- Equipment Rinsate (ER) Blanks
- Source Water (SorW)

### 2.1 Data Verification Qualifier Definitions

The data verification qualifier flags and their definitions are presented below:

- U Undetected: The analyte was analyzed for, but not detected. Reported at the limit of detection (LOD).
- UJ The analyte was not detected with estimated reporting limit: The analyte was not detected; however, the reporting limit is estimated due to discrepancies in meeting certain analyte-specific QC criteria.
- J Estimated: The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific QC criteria. J is also used

to report detections between the detection limit (DL) and the limit of quantitation (LOQ).

- R Rejected: The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.

The DoD QSM data reporting convention used will be used. Non-detect data will be reported at the LOD in Appendix D and Appendix E. Within the analytical data package, the laboratory reporting forms also use the DoD QSM convention of reporting non-detect data at the LOD. The laboratory reporting forms also present the LOQ for the sample result.

## 2.2 Sample Receipt at the Laboratory

All sample custodial possession and transfer requirements were met for samples received at CT Laboratories. No data required qualification based on sample condition. The sample coolers were received within the recommended temperature range of 4 ± 2 degrees Celsius (°C) or just below 2 °C, but not frozen.

## 2.3 Holding Times

All extractions and analyses were performed within QAPP method-specific holding times.

## 2.4 Tuning and Calibration

All methods using a mass selective detector must be tuned in accordance with the standard operating procedures (SOP), and method calibrations must meet the DoD QSM criteria. All applicable method tunes and initial calibrations met method criteria. The semi-volatile organic compound (SVOC) 3,5-dintroaniline was out of CCV limits for 13 soil samples. Volatile organic compounds (VOC) bromomethane, methylene chloride, and tetrachloroethene were out of CCV limits for 13 soil samples. See Table 2-1 for qualified data.

As the methylene chloride results were qualified as non-detect (U) due to method blank contamination (see Section 2-5), and qualifications based upon method blank contamination take precedence over estimates based on other review factors, these results are not further qualified by the CCV issue and are therefore not included in Table 2-1.

## Table 2-1: Calibration - Initial and Continuing Calibration Verification

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Explosives (mg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 337811 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 337812 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337813 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337818 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337820 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337822 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337824 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337826 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337830 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337832 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 337834 | 3,5-Dinitroaniline | 0.20 | UJ | CCV | 0.20 UJ |
| **VOC (µg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 338807 | Bromomethane | 0.83 | UJ | CCV | 0.83 UJ |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 338807 | Tetrachloroethene | 0.83 | UJ | CCV | 0.83 UJ |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 338808 | Bromomethane | 0.95 | UJ | CCV | 0.95 UJ |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 338808 | Tetrachloroethene | 0.95 | UJ | CCV | 0.95 UJ |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337814 | Bromomethane | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337814 | Tetrachloroethene | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337816 | Bromomethane | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337816 | Tetrachloroethene | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337819 | Bromomethane | 0.90 | UJ | CCV | 0.90 UJ |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337819 | Tetrachloroethene | 0.90 | UJ | CCV | 0.90 UJ |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337821 | Bromomethane | 0.91 | UJ | CCV | 0.91 UJ |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337821 | Tetrachloroethene | 0.91 | UJ | CCV | 0.91 UJ |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337823 | Bromomethane | 0.94 | UJ | CCV | 0.94 UJ |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337823 | Tetrachloroethene | 0.94 | UJ | CCV | 0.94 UJ |

## Table 2-1: Calibration - Initial and Continuing Calibration Verification (Continued)

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **VOC (µg/kg)** | | | | | | | | |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337825 | Bromomethane | 0.97 | UJ | CCV | 0.97 UJ |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337825 | Tetrachloroethene | 0.97 | UJ | CCV | 0.97 UJ |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337827 | Bromomethane | 0.93 | UJ | CCV | 0.93 UJ |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337827 | Tetrachloroethene | 0.93 | UJ | CCV | 0.93 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337829 | Bromomethane | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337829 | Tetrachloroethene | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337831 | Bromomethane | 0.90 | UJ | CCV | 0.90 UJ |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337831 | Tetrachloroethene | 0.90 | UJ | CCV | 0.90 UJ |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337833 | Bromomethane | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337833 | Tetrachloroethene | 1.0 | UJ | CCV | 1.0 UJ |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 338810 | Bromomethane | 0.95 | UJ | CCV | 0.95 UJ |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 338810 | Tetrachloroethene | 0.95 | UJ | CCV | 0.95 UJ |

Notes:

SDG = Sample Delivery Group
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
VOC = Volatile Organic Compound
UJ = Not Detected, with estimated reporting limit
CCV = Continuing Calibration Verification

## 2.5 Laboratory Method Blanks, Initial Calibration Blanks, Continuing Calibration Blanks

A laboratory MB is an analyte-free matrix that is carried through the entire sample preparation and analysis sequence for the purpose of identifying potential contamination introduced during sample preparation and analysis. Method blanks were analyzed for each sample batch for all analyses. ICB and CCB are analyzed for metals and nitrocellulose analyses to assess the potential for carry over in the analytical method. If a contaminant is detected below the LOQ and has a result less than 5 times the associated blank level, then the sample value will be U (undetected) flagged at the LOD. If a contaminant is detected above the LOQ and has a result less than five times the associated blank level, then the sample value will be U flagged and the LOQ will be changed to that of the contaminant concentration in the sample.

All applicable laboratory blank detections resulting in qualified sample results are presented in Table 2-2. Methylene chloride was qualified as non-detect in 13 field soil samples and 3 associated trip blanks. Vanadium was qualified as non-detect in sample 083SB-0015M-0001-SO due to associated CCB contamination, and thallium was qualified as non-detect in 3 soils samples, 083SB-0003M-0001-SO, 083SB-0004M-0001-SO, and 083SB-0005-0001-SO, due to associated method blank contamination.

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## Table 2-2: Laboratory Method Blanks

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Metals (mg/kg)** | | | | | | | | |
| 083SB-0003M-0001-SO | 12-Aug-13 | 99211 | 337813 | Thallium | 0.49 | U | MB | 1.3 U |
| 083SB-0004M-0001-SO | 12-Aug-13 | 99211 | 337815 | Thallium | 0.64 | U | MB | 1.2 U |
| 083SB-0005M-0001-SO | 12-Aug-13 | 99211 | 337818 | Thallium | 0.79 | U | MB | 1.2 U |
| 083SB-0015M-0001-SO | 12-Aug-13 | 99211 | 337834 | Vanadium | 3.2 | U | CCB | 3.2 U |
| **VOC (µg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 12-Aug-13 | 99211 | 338807 | Methylene Chloride | 6.0 | U | MB | 1.7 U |
| 083SB-0002M-0001-SO | 12-Aug-13 | 99211 | 338808 | Methylene Chloride | 5.5 | U | MB | 1.9 U |
| 083SB-0003M-0001-SO | 12-Aug-13 | 99211 | 337814 | Methylene Chloride | 7.0 | U | MB | 2.0 U |
| 083SB-0004M-0001-SO | 12-Aug-13 | 99211 | 337816 | Methylene Chloride | 6.5 | U | MB | 2.0 U |
| 083SB-0005M-0001-SO | 12-Aug-13 | 99211 | 337819 | Methylene Chloride | 6.0 | U | MB | 1.8 U |
| 083SB-0006M-0001-SO | 12-Aug-13 | 99211 | 337821 | Methylene Chloride | 7.0 | U | MB | 1.8 U |
| 083SB-0008M-0001-SO | 12-Aug-13 | 99211 | 337823 | Methylene Chloride | 6.7 | U | MB | 1.9 U |
| 083SB-0009M-0001-SO | 12-Aug-13 | 99211 | 337825 | Methylene Chloride | 6.9 | U | MB | 1.9 U |
| 083SB-0011M-0001-SO | 12-Aug-13 | 99211 | 337827 | Methylene Chloride | 6.5 | U | MB | 1.9 U |
| 083SB-0012M-0001-SO | 12-Aug-13 | 99211 | 337829 | Methylene Chloride | 7.3 | U | MB | 2.0 U |
| 083SB-0013M-0001-SO | 12-Aug-13 | 99211 | 337831 | Methylene Chloride | 6.5 | U | MB | 1.8 U |
| 083SB-0014-0001-SO | 12-Aug-13 | 99211 | 337833 | Methylene Chloride | 7.8 | U | MB | 2.1 U |
| 083SB-0015M-0001-SO | 12-Aug-13 | 99211 | 338810 | Methylene Chloride | 5.8 | U | MB | 1.9 U |
| **VOC (µg/L)** | | | | | | | | |
| 083SB-0016-0001-TB | 12-Aug-13 | 99211 | 337835 | Methylene Chloride | 7.9 | U | MB | 2.0 U |
| 083SB-0018-0001-TB | 12-Aug-13 | 99211 | 337836 | Methylene Chloride | 9.3 | U | MB | 2.0 U |
| 083SB-0020-0001-TB | 14-Aug-13 | 99211 | 338809 | Methylene Chloride | 11 | U | MB | 11.0 U |

Notes:
SDG = Sample Delivery Group
U = Undetected
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
µg/L = Micrograms per liter
VOC = Volatile Organic Compound
MB = Method Blank
CCB = Continuing Calibration Blank

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## 2.6 Field Blank Quality Control – Trip Blanks, Equipment Rinsate Blanks, and Source Water

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC cross-contamination during storage and shipment. A total of 3 trip blanks were sent with site primary samples and analyzed as part of the QC program. Methylene chloride was detected in all three trip blanks, but changed to non-detect (U) based upon method blank contamination (see Section 2.5). Acetone was detected in one trip blank, resulting in the qualification of acetone in sample 083SB-0001M-0001-SO as non-detect (U). All applicable trip blank detections resulting in qualified sample results are presented in Table 2-3. See Attachment A for trip blank data and equipment rinsate blank data.

Source water sample data are used to determine the pre-existing levels of chemicals in decontamination fluids. For the sampling at this site, two source water samples were collected, see Table 1-2. Source water sample SorW-1 was collected from water used to decontaminate hand held tools. Source water sample SorW-3 was collected from drillers water used to decontaminate direct push sampling tools used in 2013. See Attachment B for source water data.

Source water is used as the final rinsate during equipment decontamination, and a sample of this water was submitted as the equipment rinsate sample. The equipment rinsate results are evaluated to determine the effectiveness of equipment decontamination. As the source water was tested, the pre-existing levels of chemicals in the equipment rinsate are known, and these are not further evaluated when assessing the equipment rinsate results. Equipment rinsate sample ER-4 is associated with the source water samples listed above.

SorW-1 has detections of several metals, barium, calcium, copper, magnesium, and sodium. SorW-1 also has several VOC detections including 2-butanone, acetone, toluene, bromodichloromethane, chloroform, and dibromochloromethane, and a TPH-GRO detection. SorW-3 has detection of several metals; arsenic, chromium, cobalt, and thallium, copper, calcium, barium, iron, magnesium, manganese, potassium, sodium, and zinc. SorW-3 also had a trace level TPH-GRO detection. Source water sample, SorW-3, had organic detections for bis(2-ethylhexyl)phthalate, dalapon, and nitroguanidine, which were qualified as non-detect during data verification.

Quality control TBs were collected along with the source water and equipment rinsate blank samples. The trip blank, QC TB-1, associated with source water sample SorW-1, had a trace-level chloroform detection, and QC TB-2 had a TPH-GRO detection. The trip blank, QC TB-6, associated with source water samples SorW-3 had a TPH-GRO detection.

Comparison of the source water SorW-1 results to the equipment rinsate results for ER-4 shows similar chemicals, TPH-GRO and chloroform, detected in both samples. The only metal detected in sample ER-4, silver, was not detected in SorW-1. The only organic detected in ER-4 was chloroform at a trace level; however, chloroform was not detected in any of the site soil samples. ER-4 had a detection for TPH-GRO at 26 micrograms per liter (µg/L), while the source water sample SorW-1 had a similar detection at 39 µg/L. However TPH-GRO soil samples were not collected at CC RVAAP-83. The equipment rinsate results show that sampling tools were properly decontaminated and that there was no apparent cross-contamination between soil samples.

## Table 2-3: Trip Blanks

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **VOC (µg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 338807 | Acetone | 11 | U | Trip Blank | 11 U |

Notes:
SDG = Sample Delivery Group
U = Undetected
µg/kg = Micrograms per kilogram
VOC = Volatile Organic Compound

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## 2.7 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Pesticide results for sample 083SB-0012M-0001-SO, all non-detects, were qualified as UJ (non-detect with an estimated reporting limit) due to low surrogate recovery. All other applicable surrogate recoveries were within QAPP limits or were greater than the upper control limits. Sample results associated with high surrogate recoveries were all non-detects; hence, no data qualifications were required. See Table 2-4 for qualified data.

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## Table 2-4: Surrogate Recoveries

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg)** | | | | | | | | |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Aldrin | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | alpha-BHC (alpha-Hexachlorocyclohexane) | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | alpha-Chlordane | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | alpha-Endosulfan | 1.2 | UJ | Surrogate recovery - low | 1.1 J |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | beta-BHC (beta-Hexachlorocyclohexane) | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | beta-Endosulfan | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Dieldrin | 1.1 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Endosulfan Sulfate | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Endrin | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Endrin Aldehyde | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Endrin Ketone | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | gamma-BHC (Lindane) | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | gamma-Chlordane | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Heptachlor | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Heptachlor Epoxide | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | delta-BHC (delta-Hexachlorocyclohexane) | 1.2 | J | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Methoxychlor | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | p,p'-DDD | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | p,p'-DDE | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | p,p'-DDT | 1.2 | UJ | Surrogate recovery - low | 1.2 UJ |

## Table 2-4: Surrogate Recoveries (Continued)

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg)** | | | | | | | | |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Toxaphene | 12 | UJ | Surrogate recovery - low | 1.2 UJ |

Notes:
SDG = Sample Deliver Group
µg/kg = Micrograms per kilogram
UJ = Not Detected, with estimated reporting limit
J = Estimated
BHC = Hexachlorocyclohexane
DDD = Dichlorodiphenyldichloroethane
DDT = Dichlorodiphenyltrichloroethane
DDE = Dichlorodiphenyldichloroethylene

## 2.8 Laboratory Control Samples and/or Laboratory Control Sample Duplicates

A LCS consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD), if analyzed, is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the RPD, which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses. All applicable LCS recoveries were within QAPP limits with the exceptions of explosive 4-amino-2,6-dinitrotoluene, SVOC hexachlorocyclopentadiene, and VOC methylene chloride with low recoveries. See Table 2-5 for summary of LCS qualifications. As the methylene chloride associated result was qualified as non-detect based upon the method blank, this result does not require qualification and is not included in Table 2-5.

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## Table 2-5: Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Explosives (mg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 337811 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 337812 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337813 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337818 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337820 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337822 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337824 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337826 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337830 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337832 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 337834 | 4-Amino-2,6-Dinitrotoluene | 0.20 | UJ | LCS Recovery - low | 0.20 UJ |
| **SVOC (µg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 337811 | Hexachlorocyclopentadiene | 61 | UJ | LCS Recovery - low | 61 UJ |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 337812 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337813 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Hexachlorocyclopentadiene | 63 | UJ | LCS Recovery - low | 63 UJ |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337818 | Hexachlorocyclopentadiene | 64 | UJ | LCS Recovery - low | 64 UJ |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337820 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |

## Table 2-5: Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries (Continued)

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **SVOC (µg/kg)** | | | | | | | | |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337822 | Hexachlorocyclopentadiene | 63 | UJ | LCS Recovery - low | 63 UJ |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337824 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337826 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337830 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337832 | Hexachlorocyclopentadiene | 63 | UJ | LCS Recovery - low | 63 UJ |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 337834 | Hexachlorocyclopentadiene | 62 | UJ | LCS Recovery - low | 62 UJ |

Notes:
SDG = Sample Delivery Group
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
SVOC = Semi-volatile Organic Compound
UJ = Not Detected, with estimated reporting limit
LCS = Laboratory Control Sample

## 2.9 Matrix Spikes and Matrix Spike Duplicates

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for the percent of the spiked analytes. MS/MSD samples were analyzed for each SDG for all analyses. Low MS recovery exceedances for non-detects are qualified as UJ (non-detect with an estimate reporting limit) and detects qualified as J (estimated). High MS recovery exceedances are qualified as J (estimated) for detections.

MS/MSD results were provided for all analyses. All MS and MSD recoveries were within QAPP limits with the exception of those listed in Table 2-6. Explosives 3-nitrotoluene and 4-nitrotoluene, propellant nitrocellulose, SVOCs benzyl alcohol, chrysene, and fluoranthene, and metals antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, magnesium, mercury, nickel, selenium, vanadium, and zinc in sample 083SB-0004M-0001-SO were qualified due to MS recovery exceedances.

All MS results except mercury recovered below QAPP limits. Mercury MS recovery was above QAPP limits. Based upon validation protocol and professional judgment, the mercury qualification based upon the MS recovery exceedance was applied to the entire analytical batch, resulting in the qualification of 12 additional soil samples results. The MS recovery for benzyl alcohol was below 10% recovery, and this chemical was qualified as rejected (R). Although the MS recoveries for methylene chloride and thallium were outside QAPP limits, these results were qualified as non-detect (U) due to method blank and were therefore not qualified due to MS recovery or included in Table 2-6.

All MS/MSD RPDs were within QAPP limits with the exception of those listed in Table 2-6. Explosives 3-nitrotoluene and pentaerythritol tetranitrate (PETN) in sample 083SB-0004M-0001-SO were qualified due to MS/MSD RPDs exceedances.

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## Table 2-6: Matrix Spike/Matrix Spike Duplicate Recoveries and Relative Percent Differences

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Explosives (mg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | 3-Nitrotoluene | 0.30 | UJ | MS Recovery - low, MS RPD | 0.30 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | 4-Nitrotoluene | 0.20 | UJ | MS Recovery - low | 0.20 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | PETN | 1.2 | UJ | MS RPD | 1.2 UJ |
| **Metals (mg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Antimony | 1.0 | J | MS Recovery - low | 1.0 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Arsenic | 13.3 | J | MS Recovery - low | 13.3 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Barium | 76.5 | J | MS Recovery - low | 76.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Beryllium | 0.56 | J | MS Recovery - low | 0.56 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Cadmium | 0.10 | UJ | MS Recovery - low | 0.10 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Chromium | 15.4 | J | MS Recovery - low | 15.4 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Cobalt | 11.1 | J | MS Recovery - low | 11.1 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Copper | 14.2 | J | MS Recovery - low | 14.4 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Lead | 8.5 | J | MS Recovery - low | 8.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Magnesium | 6720 | J | MS Recovery - low | 6720 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Nickel | 24.5 | J | MS Recovery - low | 24.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Selenium | 0.20 | UJ | MS Recovery - low | 0.20 UJ |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Vanadium | 15.5 | J | MS Recovery - low | 15.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Zinc | 46.1 | J | MS Recovery - low | 46.1 J |
| **Propellants (mg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Nitrocellulose | 100 | UJ | MS Recovery - low | 100 UJ |

## Table 2-6: Matrix Spike/Matrix Spike Duplicate Recoveries and Relative Percent Differences (Continued)

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **SVOC (µg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Benzyl alcohol | 130 | R | MS Recovery - < 10% | 130 R |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Chrysene | 14 | J | MS Recovery - low | 14 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Fluoranthene | 24 | J | MS Recovery - low | 24 J |
| **Mercury (mg/kg)** | | | | | | | | |
| 083SB-0001M-0001-SO | 8/12/2013 | 99211 | 337811 | Mercury | 0.034 | J | MS Recovery - high | 0.034 J |
| 083SB-0002M-0001-SO | 8/12/2013 | 99211 | 337812 | Mercury | 0.010 | J | MS Recovery - high | 0.010 J |
| 083SB-0003M-0001-SO | 8/12/2013 | 99211 | 337813 | Mercury | 0.0090 | J | MS Recovery - high | 0.0090 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Mercury | 0.0072 | J | MS Recovery - high | 0.0072 J |
| 083SB-0005M-0001-SO | 8/12/2013 | 99211 | 337818 | Mercury | 0.013 | J | MS Recovery - high | 0.013 J |
| 083SB-0006M-0001-SO | 8/12/2013 | 99211 | 337820 | Mercury | 0.012 | J | MS Recovery - high | 0.012 J |
| 083SB-0008M-0001-SO | 8/12/2013 | 99211 | 337822 | Mercury | 0.0097 | J | MS Recovery - high | 0.0097 J |
| 083SB-0009M-0001-SO | 8/12/2013 | 99211 | 337824 | Mercury | 0.0097 | J | MS Recovery - high | 0.0097 J |
| 083SB-0011M-0001-SO | 8/12/2013 | 99211 | 337826 | Mercury | 0.0073 | J | MS Recovery - high | 0.0073 J |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | Mercury | 0.0065 | J | MS Recovery - high | 0.0065 J |
| 083SB-0013M-0001-SO | 8/12/2013 | 99211 | 337830 | Mercury | 0.0063 | J | MS Recovery - high | 0.0063 J |
| 083SB-0014-0001-SO | 8/12/2013 | 99211 | 337832 | Mercury | 0.0075 | J | MS Recovery - high | 0.0075 J |
| 083SB-0015M-0001-SO | 8/12/2013 | 99211 | 337834 | Mercury | 0.0076 | J | MS Recovery - high | 0.0076 J |

Notes:
SDG = Sample Delivery Group
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
J = Estimated
UJ = Not Detected, with estimated reporting limit
R = Rejected
SVOC = Semi-volatile Organic Compound
MS = Matrix Spike
RPD = Relative Percent Difference
PETN = Pentaerythritol Tetranitrate

## 2.10 Field Duplicates

Field duplicate analytical results provide information on the ability to reproduce field results and account for error introduced from handling, shipping, preparing, and analyzing field samples. All of the field duplicate RPDs were within the QAPP limits, as shown in the DVRW for field duplicate results.

## 2.11 Dilutions and Re-Analyses

Secondary dilutions are made as required to stay within the calibration range of the analytical method or to overcome matrix issues. Re-analyses are performed as necessary to confirm QC exceedances in accordance with the method SOP and DoD QSM. Dilutions were required to ensure results were reported within the calibration range (antimony, arsenic, beryllium, chromium, cobalt, copper, lead, and zinc) or due to overcome matrix issues (cadmium and thallium). Other chemicals had MRLs greater than the FWSAP MRLs, and these are listed in the DVWR in the Reporting Anomalies section. A review of these chemicals identified two non-detect results for thallium for which LODs were above screening criteria (083SB-0001M-0001-SO and 083SB-0002M-0002-SO). However, the respective DL's for these data were below screening criteria, indicating that all data not previously qualified R (see Section 2.8) were usable for screening purposes.

## 2.12 Internal Standards

All methods using internal calibration must have internal standards spiked into them in accordance with the method SOP and DoD QSM. All applicable internal standards were within method criteria. No qualifications were required.

## 2.13 Serial Dilution

Serial dilution for metals analysis may be performed if MS recovery is out of limits and analyte results are greater than 50 times the MRL. Serial dilution percent differences were within limits for serial dilution analysis performed on sample 083SB-0004M-0001-SO with the exception of barium and magnesium. See Table 2-7 for qualified data.

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## Table 2-7: Serial Dilution Percent Differences

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Metals (mg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Barium | 77 | J | Serial dilution %D | 77 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Magnesium | 6700 | J | Serial dilution %D | 6700 J |

Notes:
SDG = Sample Delivery Group
mg/kg = Milligrams per kilogram
J = Estimated
%D = Percent Difference

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## 2.14 Post Digestion Spikes

Post digestion spikes for metals analysis may be performed if MS recovery is out of limits and analyte results are not greater than 50 times the MRL. Post digestion spikes recoveries were within limits for post digestion spike analysis performed on sample 083SB-0004M-0001-SO, except for with the exception of arsenic, beryllium, cobalt, lead, nickel, vanadium, and zinc. See Table 2-8 for qualified data.

## 2.15 Dual Column Relative Percent Difference

All detected results from dual column methods were confirmed on a second column. Dual column comparisons between the detected explosive, pesticides and PCBs results were made using the identification summary forms. All applicable dual column results were within QC limits with the exception of alpha-BHC (alpha-Hexachlorocyclohexane) in pesticides sample 083SB-0012M-0001-SO, as presented in Table 2-9.

## 2.16 Method Reporting Limit Checks

The ability of the laboratory to quantitatively meet the MRL is verified by analyzing pre-analysis and post-analysis MRL check samples. The MRL check criterion is 70-130%. If the MRL % REC is less than 70 %, then non-detects are qualified as UJ and detects are qualified as J. If the MRL % REC is greater than 130%, then detects are qualified as J. If MRL % REC is less than 10%, then non-detects are qualified as R and detects are qualified as J.

The MRL check is in limits for all methods, except for one VOC, acetone. The MRL for acetone exceeded the upper limit; however, acetone in this sample was qualified as non-detect (U) due to trip blank contamination. Therefore, no further qualification is necessary.

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## Table 2-8: Post Digestion Spike Recoveries

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Metals (mg/kg)** | | | | | | | | |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Arsenic | 13 | J | PDS Recovery - low | 13 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Beryllium | 0.56 | J | PDS Recovery - low | 0.56 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Cobalt | 11.1 | J | PDS Recovery - low | 11.1 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Lead | 8.5 | J | PDS Recovery - low | 8.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Nickel | 24.5 | J | PDS Recovery - low | 24.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Vanadium | 15.5 | J | PDS Recovery - low | 15.5 J |
| 083SB-0004M-0001-SO | 8/12/2013 | 99211 | 337815 | Zinc | 46.1 | J | PDS Recovery - low | 46.1 J |

Notes:
SDG = Sample Delivery Group
mg/kg = Milligrams per kilogram
PDS = Post Digestion Spike

## Table 2-9: Dual Column Relative Percent Difference

| Sample Identification | Date Sampled | SDG | Lab Number | Parameter | Lab Result | Data Review Qualifier | Comments | Final Result |
|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg)** | | | | | | | | |
| 083SB-0012M-0001-SO | 8/12/2013 | 99211 | 337828 | delta-BHC (delta-Hexachlorocyclohexane) | 1.1 | J | Column RPD | 1.1 J |

Notes:
SDG = Sample Delivery Group
µg/kg = Micrograms per kilogram
J = Estimated
BHC = Hexachlorocyclohexane
RPD = Relative Percent Difference

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## 3.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for this project.

### 3.1 Field Completeness

Field completeness for sample collection was assessed by comparing the number of sample points sampled to the number of sample points planned for collection in accordance with FWQAPP Section 13.1. All planned samples were collected. Field completeness was 100%, and additional parameters were added to the required sampling and analysis plan. See Table 3-1 for a summary of field completeness.

### 3.2 Analytical Completeness

Analytical completeness was assessed by comparing the number of valid (analytes that have not been rejected) laboratory analyte measurements performed to the number of laboratory analyte measurements planned. Analytical completeness was 100% for all analytical methods except for SVOCs, which had a low MSD recovery (<10%) for benzyl alcohol. Benzyl alcohol was qualified as R in one sample. SVOC analytical completeness is 99.87 %. Full analytical completeness including SVOC analysis is 99.94%.

### 3.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data completeness) percentages. Project completeness for characterization site constituents of concern is 100%, except for SVOCs. SVOC project completeness is 99.87%. Full project completeness including SVOCs is 99.94%. The overall project completeness exceeds the project completeness goal of 90%. See Table 3-3 for the project completeness results.

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## Table 3-1: Field Completeness Summary[1]

| | VOC[2] | SVOC | TAL Metals | PCB | Pesticides | Explosives | Propellants |
|---|---|---|---|---|---|---|---|
| Collected Field Samples | 12 | 12 | 12 | 1 | 1 | 12 | 12 |
| Planned Field Samples | 11 | 11 | 11 | 1 | 1 | 11 | 11 |
| % Complete | 109 | 109 | 109 | 100 | 100 | 109 | 109 |

## Table 3-2: Analytical Completeness Summary

| | VOC | SVOC | TAL Metals | PCB | Pesticides | Explosives[3] | Propellants |
|---|---|---|---|---|---|---|---|
| Valid Analytes | 459 | 779 | 276 | 9 | 21 | 204 | 24 |
| Collected Analytes | 459 | 780 | 276 | 9 | 21 | 204 | 24 |
| % Complete | 100 | 99.9 | 100 | 100 | 100 | 100 | 100 |

## Table 3-3: Project Completeness Summary

| | VOC | SVOC | TAL Metals | PCB | Pesticides | Explosives[3] | Propellants |
|---|---|---|---|---|---|---|---|
| Valid Analytes | 459 | 779 | 276 | 9 | 21 | 204 | 24 |
| Planned and Field Modification Analytes | 459 | 780 | 276 | 9 | 21 | 204 | 24 |
| % Complete | 100 | 99.9 | 100 | 100 | 100 | 100 | 100 |

Notes for Table 3-1, 3-2, and 3-3:

1) Only field samples are included in completeness tally
2) For field completeness, VOC and VOC with methyl tert butyl ethylene (MTBE) both counted as VOC analysis
3) Nitroglycerin counted for completeness as an explosive

VOC = Volatile Organic Compound
SVOC = Semi-volatile Organic Compound
TAL = Target Analyte List
PCB = Polychlorinated Biphenyls
Propellants include nitroguanidine, nitrocellulose, and nitroglycerin

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## 3.4 Data Usability

The overall quality of the CC RVAAP-83 Former Buildings 1031 and 1039 Site Inspection (SI) information meets or exceeds the established project objectives. Through proper implementation of the project data verification and assessment process, 99.94% of the project information has been determined to be acceptable for use.

Data are usable as qualified J, U, or UJ. One SVOC analyte, benzyl alcohol, in one sample was qualified R due to a low MS recovery (< 10%). Data that have been estimated provide indications of either accuracy, precision, or sensitivity being less than desired but adequate for interpretation. All undetected analytes were reported at detection levels that were adequate for use during data interpretation and statistical applications. All results with final qualifiers are presented in Appendix E.

Data produced for this project demonstrate they can withstand scientific scrutiny; are appropriate for its intended purpose; are technically defensible; and are of known and acceptable sensitivity, precision, and accuracy. Data integrity has been documented through proper implementation of QA and QC measures. A third-party QA data validation report was completed, which is in general concurrence with the data verification findings, and that report is provided in Appendix F. Select analytes had reporting limits greater than FWQAPP requirements, as documented in the DVRWs, but data with elevated limits was still usable. The environmental information presented has an established confidence that allows utilization for the project objectives and provides data for future needs.

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## 4.0 REFERENCES

ECC, 2012. *Final Quality Assurance Project Plan for Site Inspections and Remedial Investigations at Compliance Restoration Sites Revision 0 Ravenna Army Ammunition Plant Ravenna, Ohio,* Revision 0. July

Science Applications International Corporation (SAIC), 2010. *Final Facility-Wide Human Health Cleanup Goals for the Ravenna Army Ammunition Plant Ravenna, Ohio, Revision 0*. March.

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United States Department of Defense (DoD), 2010. *Final Quality Systems Manual for Environmental Laboratories*. Environmental Data Quality Workgroup, Final Version 4.2. October.

United States Army Corp of Engineers (USACE), 2007. *Final Louisville DoD Supplement, Version 1*. Final, March.

United States Environmental Protection Agency (USEPA), 2008. *Final Contract Laboratory Program National Functional Guidelines for Superfund Organic Data Review,* EPA-540/R-08-01. June.

USEPA, 2010. *Final Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review,* EPA-540-R-10-011. January.

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**WORKSHEETS AND ATTACHMENTS**
**(Note – To be provided on disc only)**

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**WORKSHEET 1**

**Automated Data Review Summary for 99211**

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**Data Review Summary for 99211_83_0813**

| | |
|---|---|
| Facility: | Ravenna Army Ammunition Plant |
| Event: | Summer 2013 RI/SI Sampling Event |
| Guidance Document: | Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012 |
| Contract Laboratory: | CT LABS., BARABOO, WI |
| Field Contractor: | Environmental Chemical Corporation, Abingdon, MD |
| Data Review Contractor: | ECC |
| SDG: | 99211_83_0813, Certified - 9/10/2013 by frederickroche |
| QC Level: | ADR |
| Project Manager: | Al Easterday |
| Data Reviewer: | Kathryn Priess |
| Data Reviewer Title: | Staff Chemist |
| Date of Review Report: | September 19, 2013 |
| Second Reviewer: | |
| Completion Date of Second Reviewer: | |

| Analytical Method/ Leach Method | Normal Soil Samples | Normal Water Samples | Field QC Soil Samples | Field QC Water Samples |
|---|---|---|---|---|
| BNASIM/NONE | 12 | | 1 | |
| E160.3/NONE | 12 | | 1 | |
| E353.2/NONE | 12 | | 1 | |
| SW6010C/NONE | 12 | | 1 | |
| SW7471B/NONE | 12 | | 1 | |
| SW8081B/NONE | 1 | | | |
| SW8082/NONE | 1 | | | |
| SW8260C/NONE | 12 | 3 | 1 | |
| SW8270D/NONE | 12 | | 1 | |
| SW8330/NONE | 12 | | 1 | |
| SW8330B/NONE | 12 | | 1 | |

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012 to the extent possible. Where definitive guidance is not provided, data has been evaluated in a conservative manner using professional judgment. In cases where two qualifiers are listed as an action, such as 'J/UJ', the first qualifier applies to positive results, and the second to non-detect results.

Samples were collected by Environmental Chemical Corporation, Abingdon, MD; analyses were performed by CT LABS., BARABOO, WI and were reported under sample delivery group (SDG) 99211_83_0813. Results have been evaluated electronically using electronic data deliverables (EDDs) provided by the laboratory. The laboratory data summary forms (hard copy) have been reviewed during this effort and compared to the automated review output. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative.

The following quality control elements were supported by the electronic deliverable and were evaluated during this review effort:

Blank
Blank - Negative
Field Duplicate RPD
LCS Recovery
MS Recovery
MS RPD
Prep Hold Time
Surrogate
Test Hold Time

The following quality control elements were either not applicable to the deliverable, or were not supported by the electronic deliverable, and were therefore not included in the automated data review. Those elements required for the project were reviewed manually, as narrated in the Comment section below.

Ambient Blank
Calibration Blank
Calibration Blank - Negative
Continuing Calibration Verification
Equipment Blank
Field Blank
Initial Calibration Verification
Lab Replicate RPD
LCS RPD
Material Blank
Trip Blank

The following summaries were generated during the evaluation of this data set and are included in this report as applicable.

Batch – The analytical batch report is reviewed for completeness and compliance with project specific requirements. Incomplete or non-compliant run sequences are identified and their impact on data quality are discussed in the narrative.

QC Outlier – Results exceeding the evaluation criteria are reviewed for compliance with project requirements and a minimum of ten percent of the non-compliant QC values reported electronically are verified for consistency with hard-copy values.

Qualified Results – Qualified results are evaluated for compliance with project requirements and ten percent of qualified results are verified for consistency with the QC Outliers.

Rejected Results – All rejected results are evaluated for compliance with project requirements. The reason for rejection of the data is verified against hard copy data.

Field Duplicates – Field duplicate comparison results are evaluated for compliance with project requirements and ten percent of values reported are verified for consistency with the hard-copy data.

Data Submission Warnings – Warnings encountered during the data submission process are evaluated and their affect on data quality is discussed in the narrative below.

Analytical deficiencies, project non-compliance issues and inconsistencies with hard copy results observed during ADR evaluation process and their impact on data quality are summarized in the narrative below.

A total of 141 results (6.84%) out of the 2062 results (sample and field QC samples) reported are qualified based on review and 1 results (0.05%) have been rejected. Trace values are not counted as qualified results in the above count. The qualified results are detailed in the following tables and discussed in the narrative below, where appropriate.

Narrative Comments

| Analytical Method | Comment |
|---|---|
| E353.2 | |
| SW6010C | Post Digestive spike performed on sample 083SB-0004M-0001-SO. |
| SW8082 | |
| SW8270D | |
| SW8330B | |
| BNASIM | |
| E160.3 | |
| SW7471B | |
| SW8081B | |
| SW8260C | |
| SW8330 | |

September 19, 2013

Reviewed by Kathryn Priess, Staff Chemist

## Qualified Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | Acenaphthene | 1.50 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | N | Acenaphthylene | 1.50 | 0.460 | 0.460 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | N | Anthracene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | N | Dibenz(a,h)anthracene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Acenaphthene | 1.50 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Benzo(k)fluoranthene | 1.50 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Dibenz(a,h)anthracene | 1.50 | 0.820 | 0.820 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Fluorene | 1.50 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | 2-Methylnaphthalene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Anthracene | 1.60 | 1.00 | 1.00 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Benzo(a)anthracene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Benzo(a)pyrene | 1.60 | 0.780 | 0.780 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Benzo(k)fluoranthene | 1.60 | 0.700 | 0.700 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 0.620 | 0.620 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Fluorene | 1.60 | 0.560 | 0.560 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | N | Naphthalene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0004M-0001-SO | N | Chrysene | 1.60 | 14.0 | 14.0 J | - | ug/kg | M |
| 083SB-0004M-0001-SO | N | Fluoranthene | 1.60 | 24.0 | 24.0 J | - | ug/kg | M |
| 083SB-0004M-0001-SO | N | Fluorene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | N | Acenaphthene | 1.60 | 0.780 | 0.780 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | N | Fluorene | 1.60 | 0.930 | 0.930 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | FD | Acenaphthene | 1.50 | 0.710 | 0.710 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | FD | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | FD | Benzo(k)fluoranthene | 1.50 | 0.980 | 0.980 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | FD | Dibenz(a,h)anthracene | 1.50 | 0.750 | 0.750 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | FD | Fluorene | 1.50 | 0.740 | 0.740 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Benzo(a)pyrene | 1.60 | 0.450 | 0.450 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Fluoranthene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Fluorene | 1.60 | 0.620 | 0.620 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | N | Pyrene | 1.60 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | N | Acenaphthene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | N | Benzo(a)pyrene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | N | Benzo(k)fluoranthene | 1.60 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 0.910 | 0.910 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | N | Fluorene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | N | Acenaphthene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |

## Qualified Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0011M-0001-SO | N | Benzo(a)pyrene | 1.60 | 0.750 | 0.750 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 0.600 | 0.600 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | N | Fluoranthene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | N | Fluorene | 1.60 | 0.490 | 0.490 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | N | Acenaphthene | 1.50 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | N | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | N | Benzo(k)fluoranthene | 1.50 | 0.950 | 0.950 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | N | Dibenz(a,h)anthracene | 1.50 | 0.660 | 0.660 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | N | Fluorene | 1.50 | 0.660 | 0.660 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | N | Dibenz(a,h)anthracene | 1.50 | 0.650 | 0.650 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | N | Fluoranthene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | N | Fluorene | 1.50 | 0.500 | 0.500 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.50 | 0.580 | 0.580 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | N | Pyrene | 1.50 | 0.720 | 0.720 J | | ug/kg | TR |
| 083SB-0014-0001-SO | N | Benzo(a)pyrene | 1.60 | 0.680 | 0.680 J | | ug/kg | TR |
| 083SB-0014-0001-SO | N | Dibenz(a,h)anthracene | 1.60 | 0.890 | 0.890 J | | ug/kg | TR |
| 083SB-0014-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | N | Acenaphthene | 1.50 | 0.520 | 0.520 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | N | Benzo(a)pyrene | 1.50 | 0.590 | 0.590 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | N | Dibenz(a,h)anthracene | 1.50 | 0.680 | 0.680 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | N | Fluorene | 1.50 | 0.670 | 0.670 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | N | Indeno(1,2,3-c,d)pyrene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |

| Test Method: E353.2 | Extraction Method: METHOD | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0004M-0001-SO | N | Nitrocellulose | 200 | 100 | 100 UJ | - | mg/kg | M |

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0003M-0001-SO | N | Thallium | 2.50 | 0.490 | 1.30 U | + | mg/kg | L |
| 083SB-0004M-0001-SO | N | Antimony | 0.810 | 1.00 | 1.00 J | | mg/kg | M |
| 083SB-0004M-0001-SO | N | Arsenic | 4.10 | 13.3 | 13.3 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Barium | 0.250 | 76.5 | 76.5 J | | mg/kg | M/A |
| 083SB-0004M-0001-SO | N | Beryllium | 0.200 | 0.560 | 0.560 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Cadmium | 0.200 | 0.100 | 0.100 UJ | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Chromium | 0.710 | 15.4 | 15.4 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Cobalt | 1.20 | 11.1 | 11.1 J | - | mg/kg | M |

## Qualified Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0004M-0001-SO | N | Copper | 2.00 | 14.2 | 14.2 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Lead | 1.30 | 8.50 | 8.50 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Magnesium | 4.10 | 6720 | 6720 J | - | mg/kg | M/A |
| 083SB-0004M-0001-SO | N | Nickel | 0.610 | 24.5 | 24.5 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Selenium | 0.410 | 0.200 | 0.200 UJ | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Thallium | 2.40 | 0.640 | 1.20 U | | mg/kg | L/M |
| 083SB-0004M-0001-SO | N | Vanadium | 0.410 | 15.5 | 15.5 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | N | Zinc | 1.50 | 46.1 | 46.1 J | - | mg/kg | M |
| 083SB-0005M-0001-SO | N | Antimony | 4.10 | 1.20 | 1.20 J | | mg/kg | TR |
| 083SB-0005M-0001-SO | N | Thallium | 2.50 | 0.790 | 1.20 U | + | mg/kg | L |
| 083SB-0006M-0001-SO | FD | Antimony | 4.00 | 1.00 | 1.00 J | | mg/kg | TR |
| 083SB-0006M-0001-SO | FD | Cadmium | 0.200 | 0.0460 | 0.0460 J | | mg/kg | TR |
| 083SB-0008M-0001-SO | N | Antimony | 4.10 | 0.920 | 0.920 J | | mg/kg | TR |
| 083SB-0009M-0001-SO | N | Antimony | 4.20 | 0.920 | 0.920 J | | mg/kg | TR |
| 083SB-0011M-0001-SO | N | Antimony | 4.00 | 1.00 | 1.00 J | | mg/kg | TR |
| 083SB-0012M-0001-SO | N | Antimony | 4.10 | 1.10 | 1.10 J | | mg/kg | TR |
| 083SB-0013M-0001-SO | N | Antimony | 4.00 | 1.30 | 1.30 J | | mg/kg | TR |
| 083SB-0014-0001-SO | N | Antimony | 4.20 | 0.840 | 0.840 J | | mg/kg | TR |
| 083SB-0015M-0001-SO | N | Antimony | 4.10 | 0.860 | 0.860 J | | mg/kg | TR |
| 083SB-0015M-0001-SO | N | Vanadium | 0.0820 | 3.20 | 3.20 U | | mg/kg | B2 |

| Test Method: SW7471B | Extraction Method: TOTAL | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | Mercury | 0.00900 | 0.0340 | 0.0340 J | + | mg/kg | M |
| 083SB-0002M-0001-SO | N | Mercury | 0.00910 | 0.0100 | 0.0100 J | + | mg/kg | M |
| 083SB-0003M-0001-SO | N | Mercury | 0.00890 | 0.00900 | 0.00900 J | + | mg/kg | M |
| 083SB-0004M-0001-SO | N | Mercury | 0.00900 | 0.00720 | 0.00720 J | + | mg/kg | TR/M |
| 083SB-0005M-0001-SO | N | Mercury | 0.00910 | 0.0130 | 0.0130 J | + | mg/kg | M |
| 083SB-0006M-0001-SO | FD | Mercury | 0.00870 | 0.0120 | 0.0120 J | + | mg/kg | M |
| 083SB-0008M-0001-SO | N | Mercury | 0.00870 | 0.00970 | 0.00970 J | + | mg/kg | M |
| 083SB-0009M-0001-SO | N | Mercury | 0.00880 | 0.00970 | 0.00970 J | + | mg/kg | M |
| 083SB-0011M-0001-SO | N | Mercury | 0.00910 | 0.00730 | 0.00730 J | + | mg/kg | TR/M |
| 083SB-0012M-0001-SO | N | Mercury | 0.00920 | 0.00650 | 0.00650 J | + | mg/kg | TR/M |
| 083SB-0013M-0001-SO | N | Mercury | 0.00900 | 0.00630 | 0.00630 J | + | mg/kg | TR/M |
| 083SB-0014-0001-SO | N | Mercury | 0.00930 | 0.00750 | 0.00750 J | + | mg/kg | TR/M |
| 083SB-0015M-0001-SO | N | Mercury | 0.00890 | 0.00760 | 0.00760 J | + | mg/kg | TR/M |

## Qualified Results

| Test Method: SW8081B | Extraction Method: SW3546 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0012M-0001-SO | N | Aldrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | alpha-BHC (alpha-Hexachlorocyclohexane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | alpha-Chlordane | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | alpha-Endosulfan | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | beta-BHC (beta-Hexachlorocyclohexane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | beta-Endosulfan | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | delta-BHC (delta-Hexachlorocyclohexane) | 2.50 | 1.10 | 1.10 J | | ug/kg | TR/I/P1 |
| 083SB-0012M-0001-SO | N | Dieldrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Endosulfan Sulfate | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Endrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Endrin Aldehyde | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Endrin Ketone | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | gamma-BHC (Lindane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | gamma-Chlordane | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Heptachlor | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Heptachlor Epoxide | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Methoxychlor | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | p,p'-DDD | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | p,p'-DDE | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | p,p'-DDT | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | N | Toxaphene | 62.0 | 12.0 | 12.0 UJ | | ug/kg | I |

| Test Method: SW8260C | Extraction Method: SW5030B | | Leach Method: NONE | | Matrix: WG | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0016-0001-TB | N | Methylene Chloride | 10.0 | 7.90 | 2.00 U | + | ug/L | L/C |
| 083SB-0018-0001-TB | N | Methylene Chloride | 10.0 | 9.30 | 2.00 U | + | ug/L | L/C |
| 083SB-0020-0001-TB | N | Acetone | 20.0 | 15.0 | 15.0 J | | ug/L | TR |
| 083SB-0020-0001-TB | N | Methylene Chloride | 11.0 | 11.0 | 2.00 U | + | ug/L | L/C |

| Test Method: SW8260C | Extraction Method: SW5035 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | Acetone | 17.0 | 11.0 | 8.30 U | | ug/kg | T |
| 083SB-0001M-0001-SO | N | Bromomethane | 1.70 | 0.830 | 0.830 UJ | | ug/kg | V2 |
| 083SB-0001M-0001-SO | N | Methylene Chloride | 8.30 | 6.00 | 1.70 U | + | ug/kg | L/C/V2 |
| 083SB-0001M-0001-SO | N | Tetrachloroethene (PCE) | 1.70 | 0.830 | 0.830 UJ | | ug/kg | V2 |
| 083SB-0002M-0001-SO | N | Bromomethane | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |

## Qualified Results

| Test Method: SW8260C | Extraction Method: SW5035 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0002M-0001-SO | N | Methylene Chloride | 9.50 | 5.50 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0002M-0001-SO | N | Tetrachloroethene (PCE) | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |
| 083SB-0003M-0001-SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0003M-0001-SO | N | Methylene Chloride | 10.0 | 7.00 | 2.00 U | + | ug/kg | L/C/V2/J |
| 083SB-0003M-0001-SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0004M-0001-SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0004M-0001-SO | N | Methylene Chloride | 10.0 | 6.50 | 2.00 U | | ug/kg | L/C/M/V2/J |
| 083SB-0004M-0001-SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0005M-0001-SO | N | Bromomethane | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0005M-0001-SO | N | Methylene Chloride | 9.00 | 6.00 | 1.80 U | + | ug/kg | L/C/V2/J |
| 083SB-0005M-0001-SO | N | Tetrachloroethene (PCE) | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0006M-0001-SO | FD | Bromomethane | 1.80 | 0.910 | 0.910 UJ | | ug/kg | V2 |
| 083SB-0006M-0001-SO | FD | Methylene Chloride | 9.10 | 7.00 | 1.80 U | + | ug/kg | L/C/V2 |
| 083SB-0006M-0001-SO | FD | Tetrachloroethene (PCE) | 1.80 | 0.910 | 0.910 UJ | | ug/kg | V2 |
| 083SB-0008M-0001-SO | N | Bromomethane | 1.90 | 0.940 | 0.940 UJ | | ug/kg | V2 |
| 083SB-0008M-0001-SO | N | Methylene Chloride | 9.40 | 6.70 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0008M-0001-SO | N | Tetrachloroethene (PCE) | 1.90 | 0.940 | 0.940 UJ | | ug/kg | V2 |
| 083SB-0009M-0001-SO | N | Bromomethane | 1.90 | 0.970 | 0.970 UJ | | ug/kg | V2 |
| 083SB-0009M-0001-SO | N | Methylene Chloride | 9.70 | 6.90 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0009M-0001-SO | N | Tetrachloroethene (PCE) | 1.90 | 0.970 | 0.970 UJ | | ug/kg | V2 |
| 083SB-0011M-0001-SO | N | Bromomethane | 1.90 | 0.930 | 0.930 UJ | | ug/kg | V2 |
| 083SB-0011M-0001-SO | N | Methylene Chloride | 9.30 | 6.50 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0011M-0001-SO | N | Tetrachloroethene (PCE) | 1.90 | 0.930 | 0.930 UJ | | ug/kg | V2 |
| 083SB-0012M-0001-SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0012M-0001-SO | N | Methylene Chloride | 10.0 | 7.30 | 2.00 U | + | ug/kg | L/C/V2 |
| 083SB-0012M-0001-SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0013M-0001-SO | N | Bromomethane | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0013M-0001-SO | N | Methylene Chloride | 9.00 | 6.50 | 1.80 U | + | ug/kg | L/C/V2 |
| 083SB-0013M-0001-SO | N | Tetrachloroethene (PCE) | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0014-0001-SO | N | Bromomethane | 2.10 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0014-0001-SO | N | Methylene Chloride | 10.0 | 7.80 | 2.10 U | + | ug/kg | L/C/V2 |
| 083SB-0014-0001-SO | N | Tetrachloroethene (PCE) | 2.10 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0015M-0001-SO | N | Bromomethane | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |
| 083SB-0015M-0001-SO | N | Methylene Chloride | 9.50 | 5.80 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0015M-0001-SO | N | Tetrachloroethene (PCE) | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |

| Test Method: SW8270D | Extraction Method: SW3550 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | Di-n-Butyl Phthalate | 410 | 140 | 140 J | | ug/kg | TR |

## Qualified Results

| Test Method: SW8270D | Extraction Method: SW3550 | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | Hexachlorocyclopentadiene | 200 | 61.0 | 61.0 UJ | - | ug/kg | C |
| 083SB-0002M-0001-SO | N | Di-n-Butyl Phthalate | 410 | 90.0 | 90.0 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Di-n-Octylphthalate | 210 | 91.0 | 91.0 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0003M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0004M-0001-SO | N | Benzyl Alcohol | 420 | 130 | 0.00 R | - | ug/kg | M |
| 083SB-0004M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0005M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 64.0 | 64.0 UJ | - | ug/kg | C |
| 083SB-0006M-0001-SO | FD | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0008M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0009M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0011M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0012M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0013M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0014-0001-SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0015M-0001-SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |

| Test Method: SW8330B | Extraction Method: METHOD | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0001M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0002M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0002M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0003M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0003M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0004M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0004M-0001-SO | N | 3-Nitrotoluene | 0.500 | 0.300 | 0.300 UJ | | mg/kg | D/M |
| 083SB-0004M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0004M-0001-SO | N | 4-Nitrotoluene | 0.500 | 0.200 | 0.200 UJ | | mg/kg | M |
| 083SB-0004M-0001-SO | N | Pentaerythritol Tetranitrate | 2.00 | 1.20 | 1.20 UJ | | mg/kg | D |
| 083SB-0005M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0005M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0006M-0001-SO | FD | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0006M-0001-SO | FD | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0008M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0008M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0009M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0009M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0011M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |

## Qualified Results

| Test Method: SW8330B | Extraction Method: METHOD | | Leach Method: NONE | | Matrix: SO | | | |
|---|---|---|---|---|---|---|---|---|
| FieldSample ID | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0011M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0012M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0012M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0013M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0013M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0014-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0014-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0015M-0001-SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0015M-0001-SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |

Qualified analytes in samples are reported as estimated, not detected (UJ) at the Limit of Detection (LOD).

## Reason Code Definitions

| Code | Definition |
|---|---|
| A | Serial dilution |
| B2 | CCB |
| C | LCS Recovery |
| D | MS RPD |
| I | Surrogate recovery outside project limits. |
| J | CRA/CRI Recovery |
| L | Lab Blank |
| M | MS Recovery |
| P1 | Column RPD |
| T | Trip Blank |
| TR | Trace Level Detect |
| V2 | CCV |

## Flag Code and Definitions

| Flag | Definition |
|---|---|
| U | Undetected: The analyte was analyzed for, but not detected. |
| UJ | The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria. |
| J | Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| R | The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making. |
| B | Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample. |
| UB | The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected. |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Batch Report

Test Method: BNASIM Analysis Batch: 96978

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 07:15 | 8/22/2013 14:27 | 45490/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 07:15 | 8/22/2013 14:27 | 45490/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 07:15 | 8/22/2013 14:47 | 45490/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 07:15 | 8/22/2013 14:47 | 45490/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 07:15 | 8/22/2013 15:07 | 45490/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 07:15 | 8/22/2013 15:07 | 45490/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 15:27 | 45490/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 15:27 | 45490/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 15:46 | 45490/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 15:46 | 45490/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 16:06 | 45490/ | FD |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 16:06 | 45490/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 07:15 | 8/22/2013 16:26 | 45490/ | N |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 07:15 | 8/22/2013 16:26 | 45490/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 16:46 | 45490/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 16:46 | 45490/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 07:15 | 8/22/2013 17:07 | 45490/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 07:15 | 8/22/2013 17:07 | 45490/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/22/2013 17:27 | 45490/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/22/2013 17:27 | 45490/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 07:15 | 8/22/2013 17:46 | 45490/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 07:15 | 8/22/2013 17:46 | 45490/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 18:06 | 45490/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 18:06 | 45490/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 07:15 | 8/22/2013 18:26 | 45490/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 07:15 | 8/22/2013 18:26 | 45490/ | N |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Batch Report

Test Method: BNASIM Analysis Batch: 96978

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338957 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 18:46 | 45490/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338957 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 18:46 | 45490/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338958 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 19:06 | 45490/ | SD |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338958 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 19:06 | 45490/ | SD |

Test Method: E160.3 Analysis Batch: 96720

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | | 8/20/2013 13:00 | 96720/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | | 8/20/2013 13:00 | 96720/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | | 8/20/2013 13:00 | 96720/ | N |

Batch Report

Test Method: E353.2 Analysis Batch: 97018

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 342371 | | 1/1 | 8/21/2013 09:00 | 8/21/2013 09:00 | 8/25/2013 11:47 | 45577/ | BS |
| LABQC | SQ | LABQC | 342370 | | 1/1 | 8/21/2013 09:00 | 8/21/2013 09:00 | 8/25/2013 12:04 | 45577/ | LB |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/21/2013 09:00 | 8/25/2013 12:40 | 45577/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/21/2013 09:00 | 8/25/2013 12:58 | 45577/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/21/2013 09:00 | 8/25/2013 13:16 | 45577/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/21/2013 09:00 | 8/25/2013 13:33 | 45577/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 342372 | | 1/1 | 8/12/2013 12:15 | 8/21/2013 09:00 | 8/25/2013 13:51 | 45577/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 342373 | | 1/1 | 8/12/2013 12:15 | 8/21/2013 09:00 | 8/25/2013 14:09 | 45577/ | SD |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/21/2013 09:00 | 8/25/2013 14:27 | 45577/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/21/2013 09:00 | 8/25/2013 14:44 | 45577/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/21/2013 09:00 | 8/25/2013 15:02 | 45577/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/21/2013 09:00 | 8/25/2013 15:20 | 45577/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/21/2013 09:00 | 8/25/2013 16:13 | 45577/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/21/2013 09:00 | 8/25/2013 16:31 | 45577/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/21/2013 09:00 | 8/25/2013 16:49 | 45577/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/21/2013 09:00 | 8/25/2013 17:07 | 45577/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/21/2013 09:00 | 8/25/2013 17:25 | 45577/ | N |

Test Method: SW6010C Analysis Batch: 96872

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 339760 | | 1/1 | 8/19/2013 11:30 | 8/19/2013 11:30 | 8/20/2013 10:33 | 45510/ | BS |
| LABQC | SQ | LABQC | 339759 | | 1/1 | 8/19/2013 11:30 | 8/19/2013 11:30 | 8/20/2013 10:37 | 45510/ | LB |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 11:30 | 8/20/2013 10:41 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 11:30 | 8/20/2013 10:45 | 45510/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 11:30 | 8/20/2013 10:49 | 45510/ | N |

Batch Report

Test Method: SW6010C Analysis Batch: 96872

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 10:53 | 45510/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339762 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 11:04 | 45510/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 342228 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 11:19 | 45510/ | SD |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 11:27 | 45510/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 11:30 | 45510/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 11:30 | 8/20/2013 11:34 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 11:38 | 45510/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 11:30 | 8/20/2013 11:42 | 45510/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 11:30 | 8/20/2013 11:46 | 45510/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 11:30 | 8/20/2013 11:50 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 11:54 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 11:30 | 8/20/2013 12:08 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/5 | 8/12/2013 15:12 | 8/19/2013 11:30 | 8/20/2013 18:34 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/5 | 8/12/2013 15:16 | 8/19/2013 11:30 | 8/20/2013 18:38 | 45510/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/5 | 8/12/2013 11:41 | 8/19/2013 11:30 | 8/20/2013 18:42 | 45510/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/5 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 18:45 | 45510/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339762 | | 1/5 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 19:08 | 45510/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 342228 | | 1/5 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 19:11 | 45510/ | SD |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/5 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 19:19 | 45510/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/5 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 19:23 | 45510/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/5 | 8/12/2013 13:15 | 8/19/2013 11:30 | 8/20/2013 19:26 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/5 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 19:30 | 45510/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/5 | 8/12/2013 14:40 | 8/19/2013 11:30 | 8/20/2013 19:34 | 45510/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/5 | 8/12/2013 14:55 | 8/19/2013 11:30 | 8/20/2013 19:38 | 45510/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/5 | 8/12/2013 15:10 | 8/19/2013 11:30 | 8/20/2013 19:52 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/5 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 19:56 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 11:30 | 8/20/2013 20:00 | 45510/ | N |

## Batch Report

Test Method: SW6010C Analysis Batch: 96872

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/5 | 8/12/2013 15:14 | 8/19/2013 11:30 | 8/20/2013 20:00 | 45510/ | N |

Test Method: SW6010C Analysis Batch: 96873

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 339760 | | 1/1 | 8/19/2013 11:30 | 8/19/2013 11:30 | 8/20/2013 10:59 | 45510/ | BS |
| LABQC | SQ | LABQC | 339759 | | 1/1 | 8/19/2013 11:30 | 8/19/2013 11:30 | 8/20/2013 11:00 | 45510/ | LB |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 11:30 | 8/20/2013 11:01 | 45510/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 11:30 | 8/20/2013 11:02 | 45510/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 11:30 | 8/20/2013 11:03 | 45510/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 11:04 | 45510/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339762 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 11:09 | 45510/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339763 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 11:30 | 8/20/2013 11:10 | 45510/ | SD |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 11:12 | 45510/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 11:30 | 8/20/2013 11:13 | 45510/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 11:30 | 8/20/2013 11:14 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 11:15 | 45510/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 11:30 | 8/20/2013 11:16 | 45510/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 11:30 | 8/20/2013 11:19 | 45510/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 11:30 | 8/20/2013 11:20 | 45510/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 11:30 | 8/20/2013 11:21 | 45510/ | N |

## Batch Report

Test Method: SW6010C Analysis Batch: 96873

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 11:30 | 8/20/2013 11:22 | 45510/ | N |

Test Method: SW7471B Analysis Batch: 96929

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 337843 | | 1/1 | 8/20/2013 12:30 | 8/20/2013 12:30 | 8/22/2013 08:53 | 45457/ | BS |
| LABQC | SQ | LABQC | 337842 | | 1/1 | 8/20/2013 12:30 | 8/20/2013 12:30 | 8/22/2013 08:55 | 45457/ | LB |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/20/2013 12:30 | 8/22/2013 08:57 | 45457/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/20/2013 12:30 | 8/22/2013 08:59 | 45457/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/20/2013 12:30 | 8/22/2013 09:01 | 45457/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 12:30 | 8/22/2013 09:02 | 45457/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 337853 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 12:30 | 8/22/2013 09:08 | 45457/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 337854 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 12:30 | 8/22/2013 09:10 | 45457/ | SD |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 12:30 | 8/22/2013 09:18 | 45457/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 12:30 | 8/22/2013 09:19 | 45457/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/20/2013 12:30 | 8/22/2013 09:21 | 45457/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 12:30 | 8/22/2013 09:23 | 45457/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/20/2013 12:30 | 8/22/2013 09:25 | 45457/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/20/2013 12:30 | 8/22/2013 09:27 | 45457/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/20/2013 12:30 | 8/22/2013 09:29 | 45457/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 12:30 | 8/22/2013 09:30 | 45457/ | N |

## Batch Report

Test Method: SW7471B Analysis Batch: 96929

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/20/2013 12:30 | 8/22/2013 09:32 | 45457/ | N |

Test Method: SW8081B Analysis Batch: 96923

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338945 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/23/2013 16:31 | 45488/ | LB |
| LABQC | SQ | LABQC | 338946 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/23/2013 16:46 | 45488/ | BS |
| LABQC | SQ | LABQC | 338946 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/23/2013 17:01 | 45488/ | BS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:17 | 45488/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:17 | 45488/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338947 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:32 | 45488/ | MS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338947 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:32 | 45488/ | MS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338948 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:48 | 45488/ | SD |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338948 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/23/2013 17:48 | 45488/ | SD |

Test Method: SW8082 Analysis Batch: 96922

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338940 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/21/2013 12:08 | 45487/ | LB |
| LABQC | SQ | LABQC | 338941 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/21/2013 12:28 | 45487/ | BS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 12:47 | 45487/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 12:47 | 45487/ | N |

Batch Report

Test Method: SW8082 Analysis Batch: 96922

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338943 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 13:07 | 45487/ | MS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338943 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 13:07 | 45487/ | MS |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338944 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 13:27 | 45487/ | SD |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0002-SO | 338944 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/21/2013 13:27 | 45487/ | SD |

Test Method: SW8260C Analysis Batch: 96824

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 339694 | | 1/1 | 8/20/2013 07:45 | 8/20/2013 07:45 | 8/20/2013 09:34 | 45499/ | BS |
| LABQC | SQ | LABQC | 339693 | | 1/1 | 8/20/2013 07:45 | 8/20/2013 07:45 | 8/20/2013 11:00 | 45499/ | LB |
| 83-1039-DU1-SB7 | WG | 083SB-0016-0001-TB | 337835 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 11:58 | 45499/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337814 | | 1/1 | 8/12/2013 11:41 | 8/20/2013 08:15 | 8/20/2013 12:26 | 45499/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337814 | | 1/1 | 8/12/2013 11:41 | 8/20/2013 08:15 | 8/20/2013 12:26 | 45499/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337816 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/20/2013 12:55 | 45499/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337816 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/20/2013 12:55 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337819 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:24 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337819 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:24 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337821 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:53 | 45499/ | FD |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337821 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:53 | 45499/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337823 | | 1/1 | 8/12/2013 13:15 | 8/20/2013 08:15 | 8/20/2013 14:22 | 45499/ | N |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337823 | | 1/1 | 8/12/2013 13:15 | 8/20/2013 08:15 | 8/20/2013 14:22 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337825 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 14:51 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337825 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 14:51 | 45499/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337827 | | 1/1 | 8/12/2013 14:40 | 8/20/2013 08:15 | 8/20/2013 15:21 | 45499/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337827 | | 1/1 | 8/12/2013 14:40 | 8/20/2013 08:15 | 8/20/2013 15:21 | 45499/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337829 | | 1/1 | 8/12/2013 14:55 | 8/20/2013 08:15 | 8/20/2013 15:50 | 45499/ | N |

Batch Report

Test Method: SW8260C Analysis Batch: 96824

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337829 | | 1/1 | 8/12/2013 14:55 | 8/20/2013 08:15 | 8/20/2013 15:50 | 45499/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337831 | | 1/1 | 8/12/2013 15:10 | 8/20/2013 08:15 | 8/20/2013 16:19 | 45499/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337831 | | 1/1 | 8/12/2013 15:10 | 8/20/2013 08:15 | 8/20/2013 16:19 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337833 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 16:48 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337833 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 16:48 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 338807 | | 1/1 | 8/12/2013 15:12 | 8/20/2013 08:15 | 8/20/2013 17:17 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 338807 | | 1/1 | 8/12/2013 15:12 | 8/20/2013 08:15 | 8/20/2013 17:17 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 338808 | | 1/1 | 8/12/2013 15:16 | 8/20/2013 08:15 | 8/20/2013 17:46 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 338808 | | 1/1 | 8/12/2013 15:16 | 8/20/2013 08:15 | 8/20/2013 17:46 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 338810 | | 1/1 | 8/12/2013 15:14 | 8/20/2013 08:15 | 8/20/2013 18:15 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 338810 | | 1/1 | 8/12/2013 15:14 | 8/20/2013 08:15 | 8/20/2013 18:15 | 45499/ | N |
| 83-1039-DU1-SB8 | WG | 083SB-0018-0001-TB | 337836 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 23:54 | 45499/ | N |
| 83-1039-DU1-SB6 | WG | 083SB-0020-0001-TB | 338809 | | 1/1 | 8/14/2013 08:00 | 8/20/2013 08:15 | 8/21/2013 00:23 | 45499/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339695 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/21/2013 00:52 | 45499/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339695 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/21/2013 00:52 | 45499/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339696 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/21/2013 01:21 | 45499/ | SD |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 339696 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/21/2013 01:21 | 45499/ | SD |

Test Method: SW8260C Analysis Batch: 96825

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB7 | WG | 083SB-0016-0001-TB | 337835 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 11:58 | 45499/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337814 | | 1/1 | 8/12/2013 11:41 | 8/20/2013 08:15 | 8/20/2013 12:26 | 45499/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337816 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/20/2013 12:55 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337819 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:24 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337821 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:53 | 45499/ | FD |

Batch Report

Test Method: SW8260C Analysis Batch: 96825

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337823 | | 1/1 | 8/12/2013 13:15 | 8/20/2013 08:15 | 8/20/2013 14:22 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337825 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 14:51 | 45499/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337827 | | 1/1 | 8/12/2013 14:40 | 8/20/2013 08:15 | 8/20/2013 15:21 | 45499/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337829 | | 1/1 | 8/12/2013 14:55 | 8/20/2013 08:15 | 8/20/2013 15:50 | 45499/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337831 | | 1/1 | 8/12/2013 15:10 | 8/20/2013 08:15 | 8/20/2013 16:19 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337833 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 16:48 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 338807 | | 1/1 | 8/12/2013 15:12 | 8/20/2013 08:15 | 8/20/2013 17:17 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 338808 | | 1/1 | 8/12/2013 15:16 | 8/20/2013 08:15 | 8/20/2013 17:46 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 338810 | | 1/1 | 8/12/2013 15:14 | 8/20/2013 08:15 | 8/20/2013 18:15 | 45499/ | N |
| 83-1039-DU1-SB8 | WG | 083SB-0018-0001-TB | 337836 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 23:54 | 45499/ | N |
| 83-1039-DU1-SB6 | WG | 083SB-0020-0001-TB | 338809 | | 1/1 | 8/14/2013 08:00 | 8/20/2013 08:15 | 8/21/2013 00:23 | 45499/ | N |

Test Method: SW8260C Analysis Batch: 96826

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB7 | WG | 083SB-0016-0001-TB | 337835 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 11:58 | 45499/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337814 | | 1/1 | 8/12/2013 11:41 | 8/20/2013 08:15 | 8/20/2013 12:26 | 45499/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337816 | | 1/1 | 8/12/2013 12:15 | 8/20/2013 08:15 | 8/20/2013 12:55 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337819 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:24 | 45499/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337821 | | 1/1 | 8/12/2013 12:45 | 8/20/2013 08:15 | 8/20/2013 13:53 | 45499/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337823 | | 1/1 | 8/12/2013 13:15 | 8/20/2013 08:15 | 8/20/2013 14:22 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337825 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 14:51 | 45499/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337827 | | 1/1 | 8/12/2013 14:40 | 8/20/2013 08:15 | 8/20/2013 15:21 | 45499/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337829 | | 1/1 | 8/12/2013 14:55 | 8/20/2013 08:15 | 8/20/2013 15:50 | 45499/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337831 | | 1/1 | 8/12/2013 15:10 | 8/20/2013 08:15 | 8/20/2013 16:19 | 45499/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337833 | | 1/1 | 8/12/2013 14:15 | 8/20/2013 08:15 | 8/20/2013 16:48 | 45499/ | N |

Batch Report

Test Method: SW8260C Analysis Batch: 96826

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 338807 | | 1/1 | 8/12/2013 15:12 | 8/20/2013 08:15 | 8/20/2013 17:17 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 338808 | | 1/1 | 8/12/2013 15:16 | 8/20/2013 08:15 | 8/20/2013 17:46 | 45499/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 338810 | | 1/1 | 8/12/2013 15:14 | 8/20/2013 08:15 | 8/20/2013 18:15 | 45499/ | N |
| 83-1039-DU1-SB8 | WG | 083SB-0018-0001-TB | 337836 | | 1/1 | 8/12/2013 08:00 | 8/20/2013 08:15 | 8/20/2013 23:54 | 45499/ | N |
| 83-1039-DU1-SB6 | WG | 083SB-0020-0001-TB | 338809 | | 1/1 | 8/14/2013 08:00 | 8/20/2013 08:15 | 8/21/2013 00:23 | 45499/ | N |

Test Method: SW8270D Analysis Batch: 96978

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338954 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/22/2013 13:48 | 45490/ | LB |
| LABQC | SQ | LABQC | 338955 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/22/2013 14:07 | 45490/ | BS |

Test Method: SW8270D Analysis Batch: 97038

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338949 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/22/2013 16:39 | 45489/ | LB |
| LABQC | SQ | LABQC | 338950 | | 1/1 | 8/19/2013 07:15 | 8/19/2013 07:15 | 8/22/2013 16:57 | 45489/ | BS |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 07:15 | 8/22/2013 17:15 | 45489/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/19/2013 07:15 | 8/22/2013 17:15 | 45489/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 07:15 | 8/22/2013 17:34 | 45489/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/19/2013 07:15 | 8/22/2013 17:34 | 45489/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 07:15 | 8/22/2013 17:52 | 45489/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/19/2013 07:15 | 8/22/2013 17:52 | 45489/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 18:10 | 45489/ | N |

Batch Report

Test Method: SW8270D Analysis Batch: 97038

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 18:10 | 45489/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 18:29 | 45489/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 18:29 | 45489/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 18:47 | 45489/ | FD |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/19/2013 07:15 | 8/22/2013 18:47 | 45489/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 07:15 | 8/22/2013 19:05 | 45489/ | N |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/19/2013 07:15 | 8/22/2013 19:05 | 45489/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 19:24 | 45489/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 19:24 | 45489/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 07:15 | 8/22/2013 19:42 | 45489/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/19/2013 07:15 | 8/22/2013 19:42 | 45489/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/22/2013 20:00 | 45489/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/19/2013 07:15 | 8/22/2013 20:00 | 45489/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 07:15 | 8/22/2013 20:19 | 45489/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/19/2013 07:15 | 8/22/2013 20:19 | 45489/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 20:37 | 45489/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/19/2013 07:15 | 8/22/2013 20:37 | 45489/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 07:15 | 8/22/2013 20:55 | 45489/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/19/2013 07:15 | 8/22/2013 20:55 | 45489/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338952 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 21:14 | 45489/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338952 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 21:14 | 45489/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338953 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 21:32 | 45489/ | SD |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338953 | | 1/1 | 8/12/2013 12:15 | 8/19/2013 07:15 | 8/22/2013 21:32 | 45489/ | SD |

Batch Report

Test Method: SW8330 Analysis Batch: 97058

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/22/2013 13:30 | 8/27/2013 11:40 | 45484/ | N |

Test Method: SW8330 Analysis Batch: 97061

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338935 | | 1/1 | 8/22/2013 12:30 | 8/22/2013 12:30 | 8/28/2013 10:19 | 45486/ | LB |
| LABQC | SQ | LABQC | 338935 | | 1/1 | 8/22/2013 12:30 | 8/22/2013 12:30 | 8/28/2013 10:19 | 45486/ | LB |
| LABQC | SQ | LABQC | 338936 | | 1/1 | 8/22/2013 12:30 | 8/22/2013 12:30 | 8/28/2013 10:27 | 45486/ | BS |
| LABQC | SQ | LABQC | 338936 | | 1/1 | 8/22/2013 12:30 | 8/22/2013 12:30 | 8/28/2013 10:27 | 45486/ | BS |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/22/2013 12:30 | 8/28/2013 10:36 | 45486/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/22/2013 12:30 | 8/28/2013 10:36 | 45486/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/22/2013 12:30 | 8/28/2013 10:44 | 45486/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/22/2013 12:30 | 8/28/2013 10:44 | 45486/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/22/2013 12:30 | 8/28/2013 10:52 | 45486/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/22/2013 12:30 | 8/28/2013 10:52 | 45486/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 11:00 | 45486/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 11:00 | 45486/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 12:30 | 8/28/2013 11:25 | 45486/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 12:30 | 8/28/2013 11:25 | 45486/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 12:30 | 8/28/2013 11:33 | 45486/ | FD |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 12:30 | 8/28/2013 11:33 | 45486/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/22/2013 12:30 | 8/28/2013 11:49 | 45486/ | N |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/22/2013 12:30 | 8/28/2013 11:49 | 45486/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 12:30 | 8/28/2013 11:58 | 45486/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 12:30 | 8/28/2013 11:58 | 45486/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/22/2013 12:30 | 8/28/2013 12:06 | 45486/ | N |

Batch Report

Test Method: SW8330 Analysis Batch: 97061

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/22/2013 12:30 | 8/28/2013 12:06 | 45486/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/22/2013 12:30 | 8/28/2013 12:14 | 45486/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/22/2013 12:30 | 8/28/2013 12:14 | 45486/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/22/2013 12:30 | 8/28/2013 12:22 | 45486/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/22/2013 12:30 | 8/28/2013 12:22 | 45486/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 12:30 | 8/28/2013 12:30 | 45486/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 12:30 | 8/28/2013 12:30 | 45486/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/22/2013 12:30 | 8/28/2013 12:39 | 45486/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/22/2013 12:30 | 8/28/2013 12:39 | 45486/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338938 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 12:47 | 45486/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338938 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 12:47 | 45486/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338939 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 12:55 | 45486/ | SD |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338939 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 12:30 | 8/28/2013 12:55 | 45486/ | SD |

Test Method: SW8330B Analysis Batch: 97058

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| LABQC | SQ | LABQC | 338927 | | 1/1 | 8/22/2013 13:30 | 8/22/2013 13:30 | 8/27/2013 10:45 | 45484/ | LB |
| LABQC | SQ | LABQC | 338927 | | 1/1 | 8/22/2013 13:30 | 8/22/2013 13:30 | 8/27/2013 10:45 | 45484/ | LB |
| LABQC | SQ | LABQC | 338928 | | 1/1 | 8/22/2013 13:30 | 8/22/2013 13:30 | 8/27/2013 11:04 | 45484/ | BS |
| LABQC | SQ | LABQC | 338928 | | 1/1 | 8/22/2013 13:30 | 8/22/2013 13:30 | 8/27/2013 11:04 | 45484/ | BS |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/22/2013 13:30 | 8/27/2013 11:22 | 45484/ | N |
| 83-1039-DU1-SB | SO | 083SB-0001M-0001-SO | 337811 | | 1/1 | 8/12/2013 15:12 | 8/22/2013 13:30 | 8/27/2013 11:22 | 45484/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/22/2013 13:30 | 8/27/2013 11:40 | 45484/ | N |
| 83-1039-DU1-SB | SO | 083SB-0002M-0001-SO | 337812 | | 1/1 | 8/12/2013 15:16 | 8/22/2013 13:30 | 8/27/2013 11:40 | 45484/ | N |
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/22/2013 13:30 | 8/27/2013 11:59 | 45484/ | N |

Batch Report

Test Method: SW8330B Analysis Batch: 97058

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB1 | SO | 083SB-0003M-0001-SO | 337813 | | 1/1 | 8/12/2013 11:41 | 8/22/2013 13:30 | 8/27/2013 11:59 | 45484/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 12:17 | 45484/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0001-SO | 337815 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 12:17 | 45484/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 13:30 | 8/27/2013 13:12 | 45484/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0005M-0001-SO | 337818 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 13:30 | 8/27/2013 13:12 | 45484/ | N |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 13:30 | 8/27/2013 13:30 | 45484/ | FD |
| 83-1039-DU1-SB3 | SO | 083SB-0006M-0001-SO | 337820 | | 1/1 | 8/12/2013 12:45 | 8/22/2013 13:30 | 8/27/2013 13:30 | 45484/ | FD |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/22/2013 13:30 | 8/27/2013 14:07 | 45484/ | N |
| 83-1039-DU1-SB4 | SO | 083SB-0008M-0001-SO | 337822 | | 1/1 | 8/12/2013 13:15 | 8/22/2013 13:30 | 8/27/2013 14:07 | 45484/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 13:30 | 8/27/2013 14:25 | 45484/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0009M-0001-SO | 337824 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 13:30 | 8/27/2013 14:25 | 45484/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/22/2013 13:30 | 8/27/2013 14:43 | 45484/ | N |
| 83-1039-DU1-SB6 | SO | 083SB-0011M-0001-SO | 337826 | | 1/1 | 8/12/2013 14:40 | 8/22/2013 13:30 | 8/27/2013 14:43 | 45484/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/22/2013 13:30 | 8/27/2013 15:01 | 45484/ | N |
| 83-1039-DU1-SB7 | SO | 083SB-0012M-0001-SO | 337828 | | 1/1 | 8/12/2013 14:55 | 8/22/2013 13:30 | 8/27/2013 15:01 | 45484/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/22/2013 13:30 | 8/27/2013 15:20 | 45484/ | N |
| 83-1039-DU1-SB8 | SO | 083SB-0013M-0001-SO | 337830 | | 1/1 | 8/12/2013 15:10 | 8/22/2013 13:30 | 8/27/2013 15:20 | 45484/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 13:30 | 8/27/2013 15:38 | 45484/ | N |
| 83-1039-DU1-SB5 | SO | 083SB-0014-0001-SO | 337832 | | 1/1 | 8/12/2013 14:15 | 8/22/2013 13:30 | 8/27/2013 15:38 | 45484/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/22/2013 13:30 | 8/27/2013 15:56 | 45484/ | N |
| 83-1039-DU1-SB | SO | 083SB-0015M-0001-SO | 337834 | | 1/1 | 8/12/2013 15:14 | 8/22/2013 13:30 | 8/27/2013 15:56 | 45484/ | N |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338929 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 16:15 | 45484/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338929 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 16:15 | 45484/ | MS |
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338930 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 16:33 | 45484/ | SD |

Batch Report

Test Method: SW8330B Analysis Batch: 97058

| Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extraction Date/Time | Analysis Date/Time | Prep/Leach Batch | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-1039-DU1-SB2 | SO | 083SB-0004M-0002-SO | 338930 | | 1/1 | 8/12/2013 12:15 | 8/22/2013 13:30 | 8/27/2013 16:33 | 45484/ | SD |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Field Batch Report

--No Records Found--

## QC Outlier Report

Test Method: BNASIM Extraction Method: SW3550 Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MS Recovery | 083SB-0004M-0002-SO (SD) / 338958 | 1 / 1.00 | Chrysene | 45.7 (PERCENT) | J/UJ | 55 - 110 | 55 - 110 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 338958 | 1 / 1.00 | Fluoranthene | 46.8 (PERCENT) | J/UJ | 55 - 115 | 55 - 115 | M | | | |

Test Method: SW6010C Extraction Method: TOTAL Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Nickel | 0.0240 (mg/kg) | U/None | < 0.021 | < 0.12 | L | | 10 | 0.240 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Barium | 0.0530 (mg/kg) | U/None | < 0.009 | < 0.05 | L | | 10 | 0.530 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Manganese | 0.180 (mg/kg) | U/None | < 0.025 | < 0.15 | L | | 10 | 1.80 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Aluminum | 0.180 (mg/kg) | U/None | < 0.04 | < 0.24 | L | | 10 | 1.80 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Thallium | 0.300 (mg/kg) | U/None | < 0.08 | < 0.48 | L | | 10 | 3.00 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Magnesium | 0.540 (mg/kg) | U/None | < 0.14 | < 0.8 | L | | 10 | 5.40 |
| Blank | 339759 (LB) / 339759 | 1 / 1.00 | Calcium | 3.00 (mg/kg) | U/None | < 0.24 | < 1.4 | L | | 10 | 30.0 |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Iron | -5690 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Aluminum | -882 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Calcium | 27.5 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 1.00 | Antimony | 27.5 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | | | |

## QC Outlier Report

Test Method: SW6010C Extraction Method: TOTAL Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Manganese | 39.2 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Lead | 61.2 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Chromium | 63.7 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Vanadium | 66.3 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Cobalt | 67.8 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Thallium | 67.8 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Nickel | 71.0 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Arsenic | 72.3 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Zinc | 73.3 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Barium | 74.0 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Beryllium | 74.6 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Copper | 76.6 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339762 | 1 / 5.00 | Magnesium | 78.0 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Iron | -10100 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Aluminum | -1920 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Manganese | -217 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |

## QC Outlier Report

Test Method: SW6010C Extraction Method: TOTAL Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Calcium | -46.8 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | Spike amount Insignificant | 4.00 | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Chromium | 46.7 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 1.00 | Antimony | 5.24 (PERCENT) | J/R | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Thallium | 53.2 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Magnesium | 54.3 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Lead | 55.1 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Barium | 55.6 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Zinc | 56.2 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Vanadium | 56.9 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Nickel | 57.3 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Cobalt | 58.8 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Beryllium | 64.4 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Copper | 64.7 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |
| MS Recovery | 083SB-0004M-0002-SO (SD) / 342228 | 1 / 5.00 | Arsenic | 65.4 (PERCENT) | J/UJ | 80 - 120 | 30 - 125 | M | | | |

## QC Outlier Report

Test Method: SW7471B Extraction Method: TOTAL Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS Recovery | 337843 (BS) / 337843 | 1 / 1.00 | Mercury | 120 (PERCENT) | J/U | 80 - 120 | 30 - 125 | C | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 337853 | 1 / 1.00 | Mercury | 123 (PERCENT) | J/None | 80 - 120 | 30 - 125 | M | | | |

Test Method: SW8260C Extraction Method: SW5035 Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Blank | 339693 (LB) / 339693 | 1 / 1.00 | Methylene Chloride | 5.70 (ug/kg) | U/None | < 1.7 | < 10 | L | | 2 | 11.4 |
| LCS Recovery | 339694 (BS) / 339694 | 1 / 1.00 | Methylene Chloride | 166 (PERCENT) | J/U | 55 - 140 | 20 - 140 | C | | | |
| MS Recovery | 083SB-0004M-0002-SO (MS) / 339695 | 1 / 1.00 | Methylene Chloride | 53.5 (PERCENT) | J/UJ | 55 - 140 | 20 - 140 | M | | | |

Test Method: SW8270D Extraction Method: SW3550 Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS Recovery | 338950 (BS) / 338950 | 1 / 1.00 | Hexachlorocyclopentadiene | 45.6 (PERCENT) | J/UJ | 70 - 130 | 70 - 130 | C | | | |

Test Method: SW8330 Extraction Method: METHOD Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS Recovery | 338936 (BS) / 338936 | 1 / 1.00 | NITROGUANIDINE | 71.1 (PERCENT) | J/UJ | 80 - 120 | 20 - 120 | C | | | |
| Surrogate | 083SB-0001M-0001-SO (N) / 337811 | 1 / 1.00 | 1,2-Dinitrobenzene | 71.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |

## QC Outlier Report

Test Method: SW8330 Extraction Method: METHOD Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surrogate | 083SB-0002M-0001-SO (N) / 337812 | 1 / 1.00 | 1,2-Dinitrobenzene | 71.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0003M-0001-SO (N) / 337813 | 1 / 1.00 | 1,2-Dinitrobenzene | 72.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0004M-0001-SO (N) / 337815 | 1 / 1.00 | 1,2-Dinitrobenzene | 61.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0005M-0001-SO (N) / 337818 | 1 / 1.00 | 1,2-Dinitrobenzene | 64.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0006M-0001-SO (FD) / 337820 | 1 / 1.00 | 1,2-Dinitrobenzene | 70.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0008M-0001-SO (N) / 337822 | 1 / 1.00 | 1,2-Dinitrobenzene | 70.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0009M-0001-SO (N) / 337824 | 1 / 1.00 | 1,2-Dinitrobenzene | 62.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0011M-0001-SO (N) / 337826 | 1 / 1.00 | 1,2-Dinitrobenzene | 56.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0012M-0001-SO (N) / 337828 | 1 / 1.00 | 1,2-Dinitrobenzene | 73.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0013M-0001-SO (N) / 337830 | 1 / 1.00 | 1,2-Dinitrobenzene | 65.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0014-0001-SO (N) / 337832 | 1 / 1.00 | 1,2-Dinitrobenzene | 53.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0015M-0001-SO (N) / 337834 | 1 / 1.00 | 1,2-Dinitrobenzene | 64.0 (PERCENT) | J/UJ | 78 - 118 | 10 - 118 | I | | | |

Test Method: SW8330B Extraction Method: METHOD Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LCS Recovery | 338928 (BS) / 338928 | 1 / 1.00 | 4-Amino-2,6-Dinitrotoluene | 69.5 (PERCENT) | J/UJ | 80 - 125 | 20 - 125 | C | | | |
| LCS Recovery | 338928 (BS) / 338928 | 1 / 1.00 | 4-Amino-2,6-Dinitrotoluene | 69.5 (PERCENT) | J/R | 80 - 125 | 80 - 125 | C | | | |

## QC Outlier Report

Test Method: SW8330B Extraction Method: METHOD Leach Method: NONE

| QC Element | Sample ID/ Lab Sample ID | Run#/ Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surrogate | 083SB-0001M-0001-SO (N) / 337811 | 1 / 1.00 | 3,4-Dinitrotoluene | 132 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0003M-0001-SO (N) / 337813 | 1 / 1.00 | 3,4-Dinitrotoluene | 128 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0004M-0001-SO (N) / 337815 | 1 / 1.00 | 3,4-Dinitrotoluene | 122 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0011M-0001-SO (N) / 337826 | 1 / 1.00 | 3,4-Dinitrotoluene | 125 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0014-0001-SO (N) / 337832 | 1 / 1.00 | 3,4-Dinitrotoluene | 119 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |
| Surrogate | 083SB-0015M-0001-SO (N) / 337834 | 1 / 1.00 | 3,4-Dinitrotoluene | 141 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |

Rule is the multiplier used when blank contamination occurs to determine action level.

## Qualified Results

| Test Method: BNASIM | Extraction Method: SW3550 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | 337811 | SO | N | Acenaphthene | 1.50 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | Acenaphthylene | 1.50 | 0.460 | 0.460 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | Anthracene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | Dibenz(a,h)anthracene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Acenaphthene | 1.50 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Benzo(k)fluoranthene | 1.50 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Dibenz(a,h)anthracene | 1.50 | 0.820 | 0.820 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Fluorene | 1.50 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 2-Methylnaphthalene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Anthracene | 1.60 | 1.00 | 1.00 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Benzo(a)anthracene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Benzo(a)pyrene | 1.60 | 0.780 | 0.780 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Benzo(k)fluoranthene | 1.60 | 0.700 | 0.700 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Dibenz(a,h)anthracene | 1.60 | 0.620 | 0.620 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Fluorene | 1.60 | 0.560 | 0.560 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | Naphthalene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0004M-0001-SO | 337815 | SO | N | Chrysene | 1.60 | 14.0 | 14.0 J | - | ug/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Fluoranthene | 1.60 | 24.0 | 24.0 J | - | ug/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Fluorene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | Acenaphthene | 1.60 | 0.780 | 0.780 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | Dibenz(a,h)anthracene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | Fluorene | 1.60 | 0.930 | 0.930 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Acenaphthene | 1.50 | 0.710 | 0.710 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Benzo(k)fluoranthene | 1.50 | 0.980 | 0.980 J | | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Dibenz(a,h)anthracene | 1.50 | 0.750 | 0.750 J | | ug/kg | TR |

## Qualified Results

| Test Method: BNASIM | Extraction Method: SW3550 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Fluorene | 1.50 | 0.740 | 0.740 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Benzo(a)pyrene | 1.60 | 0.450 | 0.450 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Dibenz(a,h)anthracene | 1.60 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Fluoranthene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Fluorene | 1.60 | 0.620 | 0.620 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Pyrene | 1.60 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Acenaphthene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Benzo(a)pyrene | 1.60 | 1.20 | 1.20 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Benzo(k)fluoranthene | 1.60 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Dibenz(a,h)anthracene | 1.60 | 0.910 | 0.910 J | | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Fluorene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Acenaphthene | 1.60 | 0.540 | 0.540 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Benzo(a)pyrene | 1.60 | 0.750 | 0.750 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Dibenz(a,h)anthracene | 1.60 | 0.600 | 0.600 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Fluoranthene | 1.60 | 1.50 | 1.50 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Fluorene | 1.60 | 0.490 | 0.490 J | | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Acenaphthene | 1.50 | 0.570 | 0.570 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Benzo(k)fluoranthene | 1.50 | 0.950 | 0.950 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Dibenz(a,h)anthracene | 1.50 | 0.660 | 0.660 J | | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Fluorene | 1.50 | 0.660 | 0.660 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Dibenz(a,h)anthracene | 1.50 | 0.650 | 0.650 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Fluoranthene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Fluorene | 1.50 | 0.500 | 0.500 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.50 | 0.580 | 0.580 J | | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Pyrene | 1.50 | 0.720 | 0.720 J | | ug/kg | TR |

## Qualified Results

| Test Method: BNASIM | Extraction Method: SW3550 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0014-0001-SO | 337832 | SO | N | Benzo(a)pyrene | 1.60 | 0.680 | 0.680 J | | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | Dibenz(a,h)anthracene | 1.60 | 0.890 | 0.890 J | | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.40 | 1.40 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Acenaphthene | 1.50 | 0.520 | 0.520 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Benzo(a)pyrene | 1.50 | 0.590 | 0.590 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Dibenz(a,h)anthracene | 1.50 | 0.680 | 0.680 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Fluorene | 1.50 | 0.670 | 0.670 J | | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Indeno(1,2,3-c,d)pyrene | 1.50 | 1.10 | 1.10 J | | ug/kg | TR |

| Test Method: E353.2 | Extraction Method: METHOD | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0004M-0001-SO | 337815 | SO | N | Nitrocellulose | 200 | 100 | 100 UJ | - | mg/kg | M |

| Test Method: SW6010C | Extraction Method: TOTAL | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0003M-0001-SO | 337813 | SO | N | Thallium | 2.50 | 0.490 | 1.30 U | + | mg/kg | L |
| 083SB-0004M-0001-SO | 337815 | SO | N | Antimony | 0.810 | 1.00 | 1.00 J | | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Arsenic | 4.10 | 13.3 | 13.3 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Barium | 0.250 | 76.5 | 76.5 J | | mg/kg | M/A |
| 083SB-0004M-0001-SO | 337815 | SO | N | Beryllium | 0.200 | 0.560 | 0.560 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Cadmium | 0.200 | 0.100 | 0.100 UJ | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Chromium | 0.710 | 15.4 | 15.4 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Cobalt | 1.20 | 11.1 | 11.1 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Copper | 2.00 | 14.2 | 14.2 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Lead | 1.30 | 8.50 | 8.50 J | - | mg/kg | M |

## Qualified Results

| Test Method: SW6010C | Extraction Method: TOTAL | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0004M-0001-SO | 337815 | SO | N | Magnesium | 4.10 | 6720 | 6720 J | - | mg/kg | M/A |
| 083SB-0004M-0001-SO | 337815 | SO | N | Nickel | 0.610 | 24.5 | 24.5 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Selenium | 0.410 | 0.200 | 0.200 UJ | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Thallium | 2.40 | 0.640 | 1.20 U | | mg/kg | L/M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Vanadium | 0.410 | 15.5 | 15.5 J | - | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Zinc | 1.50 | 46.1 | 46.1 J | - | mg/kg | M |
| 083SB-0005M-0001-SO | 337818 | SO | N | Antimony | 4.10 | 1.20 | 1.20 J | | mg/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | Thallium | 2.50 | 0.790 | 1.20 U | + | mg/kg | L |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Antimony | 4.00 | 1.00 | 1.00 J | | mg/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Cadmium | 0.200 | 0.0460 | 0.0460 J | | mg/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | Antimony | 4.10 | 0.920 | 0.920 J | | mg/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | Antimony | 4.20 | 0.920 | 0.920 J | | mg/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | Antimony | 4.00 | 1.00 | 1.00 J | | mg/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | Antimony | 4.10 | 1.10 | 1.10 J | | mg/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | Antimony | 4.00 | 1.30 | 1.30 J | | mg/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | Antimony | 4.20 | 0.840 | 0.840 J | | mg/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Antimony | 4.10 | 0.860 | 0.860 J | | mg/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | Vanadium | 0.0820 | 3.20 | 3.20 U | | mg/kg | B2 |

| Test Method: SW7471B | Extraction Method: TOTAL | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | 337811 | SO | N | Mercury | 0.00900 | 0.0340 | 0.0340 J | + | mg/kg | M |
| 083SB-0002M-0001-SO | 337812 | SO | N | Mercury | 0.00910 | 0.0100 | 0.0100 J | + | mg/kg | M |
| 083SB-0003M-0001-SO | 337813 | SO | N | Mercury | 0.00890 | 0.00900 | 0.00900 J | + | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Mercury | 0.00900 | 0.00720 | 0.00720 J | + | mg/kg | TR/M |
| 083SB-0005M-0001-SO | 337818 | SO | N | Mercury | 0.00910 | 0.0130 | 0.0130 J | + | mg/kg | M |

## Qualified Results

Test Method: SW7471B Extraction Method: TOTAL Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0006M-0001-SO | 337820 | SO | FD | Mercury | 0.00870 | 0.0120 | 0.0120 J | + | mg/kg | M |
| 083SB-0008M-0001-SO | 337822 | SO | N | Mercury | 0.00870 | 0.00970 | 0.00970 J | + | mg/kg | M |
| 083SB-0009M-0001-SO | 337824 | SO | N | Mercury | 0.00880 | 0.00970 | 0.00970 J | + | mg/kg | M |
| 083SB-0011M-0001-SO | 337826 | SO | N | Mercury | 0.00910 | 0.00730 | 0.00730 J | + | mg/kg | TR/M |
| 083SB-0012M-0001-SO | 337828 | SO | N | Mercury | 0.00920 | 0.00650 | 0.00650 J | + | mg/kg | TR/M |
| 083SB-0013M-0001-SO | 337830 | SO | N | Mercury | 0.00900 | 0.00630 | 0.00630 J | + | mg/kg | TR/M |
| 083SB-0014-0001-SO | 337832 | SO | N | Mercury | 0.00930 | 0.00750 | 0.00750 J | + | mg/kg | TR/M |
| 083SB-0015M-0001-SO | 337834 | SO | N | Mercury | 0.00890 | 0.00760 | 0.00760 J | + | mg/kg | TR/M |

Test Method: SW8081B Extraction Method: SW3546 Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0012M-0001-SO | 337828 | SO | N | Aldrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | alpha-BHC (alpha-Hexachlorocyclohexane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | alpha-Chlordane | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | alpha-Endosulfan | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | beta-BHC (beta-Hexachlorocyclohexane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | beta-Endosulfan | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | delta-BHC (delta-Hexachlorocyclohexane) | 2.50 | 1.10 | 1.10 J | | ug/kg | TR/I/P1 |
| 083SB-0012M-0001-SO | 337828 | SO | N | Dieldrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Endosulfan Sulfate | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Endrin | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Endrin Aldehyde | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Endrin Ketone | 4.10 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | gamma-BHC (Lindane) | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | gamma-Chlordane | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |

## Qualified Results

| Test Method: SW8081B | Extraction Method: SW3546 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0012M-0001-SO | 337828 | SO | N | Heptachlor | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Heptachlor Epoxide | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Methoxychlor | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | p,p'-DDD | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | p,p'-DDE | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | p,p'-DDT | 2.50 | 1.20 | 1.20 UJ | | ug/kg | I |
| 083SB-0012M-0001-SO | 337828 | SO | N | Toxaphene | 62.0 | 12.0 | 12.0 UJ | | ug/kg | I |

| Test Method: SW8260C | Extraction Method: SW5030B | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0016-0001-TB | 337835 | WG | N | Methylene Chloride | 10.0 | 7.90 | 2.00 U | + | ug/L | L/C |
| 083SB-0018-0001-TB | 337836 | WG | N | Methylene Chloride | 10.0 | 9.30 | 2.00 U | + | ug/L | L/C |
| 083SB-0020-0001-TB | 338809 | WG | N | Acetone | 20.0 | 15.0 | 15.0 J | | ug/L | TR |
| 083SB-0020-0001-TB | 338809 | WG | N | Methylene Chloride | 11.0 | 11.0 | 2.00 U | + | ug/L | L/C |

| Test Method: SW8260C | Extraction Method: SW5035 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | 338807 | SO | N | Acetone | 17.0 | 11.0 | 8.30 U | | ug/kg | T |
| 083SB-0001M-0001-SO | 338807 | SO | N | Bromomethane | 1.70 | 0.830 | 0.830 UJ | | ug/kg | V2 |
| 083SB-0001M-0001-SO | 338807 | SO | N | Methylene Chloride | 8.30 | 6.00 | 1.70 U | + | ug/kg | L/C/V2 |
| 083SB-0001M-0001-SO | 338807 | SO | N | Tetrachloroethene (PCE) | 1.70 | 0.830 | 0.830 UJ | | ug/kg | V2 |
| 083SB-0002M-0001-SO | 338808 | SO | N | Bromomethane | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |
| 083SB-0002M-0001-SO | 338808 | SO | N | Methylene Chloride | 9.50 | 5.50 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0002M-0001-SO | 338808 | SO | N | Tetrachloroethene (PCE) | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |
| 083SB-0003M-0001-SO | 337814 | SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |

## Qualified Results

| Test Method: SW8260C | Extraction Method: SW5035 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0003M-0001-SO | 337814 | SO | N | Methylene Chloride | 10.0 | 7.00 | 2.00 U | + | ug/kg | L/C/V2/J |
| 083SB-0003M-0001-SO | 337814 | SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0004M-0001-SO | 337816 | SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0004M-0001-SO | 337816 | SO | N | Methylene Chloride | 10.0 | 6.50 | 2.00 U | | ug/kg | L/C/M/V2/J |
| 083SB-0004M-0001-SO | 337816 | SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0005M-0001-SO | 337819 | SO | N | Bromomethane | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0005M-0001-SO | 337819 | SO | N | Methylene Chloride | 9.00 | 6.00 | 1.80 U | + | ug/kg | L/C/V2/J |
| 083SB-0005M-0001-SO | 337819 | SO | N | Tetrachloroethene (PCE) | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0006M-0001-SO | 337821 | SO | FD | Bromomethane | 1.80 | 0.910 | 0.910 UJ | | ug/kg | V2 |
| 083SB-0006M-0001-SO | 337821 | SO | FD | Methylene Chloride | 9.10 | 7.00 | 1.80 U | + | ug/kg | L/C/V2 |
| 083SB-0006M-0001-SO | 337821 | SO | FD | Tetrachloroethene (PCE) | 1.80 | 0.910 | 0.910 UJ | | ug/kg | V2 |
| 083SB-0008M-0001-SO | 337823 | SO | N | Bromomethane | 1.90 | 0.940 | 0.940 UJ | | ug/kg | V2 |
| 083SB-0008M-0001-SO | 337823 | SO | N | Methylene Chloride | 9.40 | 6.70 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0008M-0001-SO | 337823 | SO | N | Tetrachloroethene (PCE) | 1.90 | 0.940 | 0.940 UJ | | ug/kg | V2 |
| 083SB-0009M-0001-SO | 337825 | SO | N | Bromomethane | 1.90 | 0.970 | 0.970 UJ | | ug/kg | V2 |
| 083SB-0009M-0001-SO | 337825 | SO | N | Methylene Chloride | 9.70 | 6.90 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0009M-0001-SO | 337825 | SO | N | Tetrachloroethene (PCE) | 1.90 | 0.970 | 0.970 UJ | | ug/kg | V2 |
| 083SB-0011M-0001-SO | 337827 | SO | N | Bromomethane | 1.90 | 0.930 | 0.930 UJ | | ug/kg | V2 |
| 083SB-0011M-0001-SO | 337827 | SO | N | Methylene Chloride | 9.30 | 6.50 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0011M-0001-SO | 337827 | SO | N | Tetrachloroethene (PCE) | 1.90 | 0.930 | 0.930 UJ | | ug/kg | V2 |
| 083SB-0012M-0001-SO | 337829 | SO | N | Bromomethane | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0012M-0001-SO | 337829 | SO | N | Methylene Chloride | 10.0 | 7.30 | 2.00 U | + | ug/kg | L/C/V2 |
| 083SB-0012M-0001-SO | 337829 | SO | N | Tetrachloroethene (PCE) | 2.00 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0013M-0001-SO | 337831 | SO | N | Bromomethane | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0013M-0001-SO | 337831 | SO | N | Methylene Chloride | 9.00 | 6.50 | 1.80 U | + | ug/kg | L/C/V2 |
| 083SB-0013M-0001-SO | 337831 | SO | N | Tetrachloroethene (PCE) | 1.80 | 0.900 | 0.900 UJ | | ug/kg | V2 |
| 083SB-0014-0001-SO | 337833 | SO | N | Bromomethane | 2.10 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0014-0001-SO | 337833 | SO | N | Methylene Chloride | 10.0 | 7.80 | 2.10 U | + | ug/kg | L/C/V2 |

## Qualified Results

| Test Method: SW8260C | Extraction Method: SW5035 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0014-0001-SO | 337833 | SO | N | Tetrachloroethene (PCE) | 2.10 | 1.00 | 1.00 UJ | | ug/kg | V2 |
| 083SB-0015M-0001-SO | 338810 | SO | N | Bromomethane | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |
| 083SB-0015M-0001-SO | 338810 | SO | N | Methylene Chloride | 9.50 | 5.80 | 1.90 U | + | ug/kg | L/C/V2 |
| 083SB-0015M-0001-SO | 338810 | SO | N | Tetrachloroethene (PCE) | 1.90 | 0.950 | 0.950 UJ | | ug/kg | V2 |

| Test Method: SW8270D | Extraction Method: SW3550 | Leach Method: NONE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
| 083SB-0001M-0001-SO | 337811 | SO | N | Di-n-Butyl Phthalate | 410 | 140 | 140 J | | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | Hexachlorocyclopentadiene | 200 | 61.0 | 61.0 UJ | - | ug/kg | C |
| 083SB-0002M-0001-SO | 337812 | SO | N | Di-n-Butyl Phthalate | 410 | 90.0 | 90.0 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Di-n-Octylphthalate | 210 | 91.0 | 91.0 J | | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0003M-0001-SO | 337813 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0004M-0001-SO | 337815 | SO | N | Benzyl Alcohol | 420 | 130 | 0.00 R | - | ug/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0005M-0001-SO | 337818 | SO | N | Hexachlorocyclopentadiene | 210 | 64.0 | 64.0 UJ | - | ug/kg | C |
| 083SB-0006M-0001-SO | 337820 | SO | FD | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0008M-0001-SO | 337822 | SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0009M-0001-SO | 337824 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0011M-0001-SO | 337826 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0012M-0001-SO | 337828 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0013M-0001-SO | 337830 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |
| 083SB-0014-0001-SO | 337832 | SO | N | Hexachlorocyclopentadiene | 210 | 63.0 | 63.0 UJ | - | ug/kg | C |
| 083SB-0015M-0001-SO | 337834 | SO | N | Hexachlorocyclopentadiene | 210 | 62.0 | 62.0 UJ | - | ug/kg | C |

## Qualified Results

Test Method: SW8330B Extraction Method: METHOD Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0001M-0001-SO | 337811 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0001M-0001-SO | 337811 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0002M-0001-SO | 337812 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0002M-0001-SO | 337812 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0003M-0001-SO | 337813 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0003M-0001-SO | 337813 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0004M-0001-SO | 337815 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0004M-0001-SO | 337815 | SO | N | 3-Nitrotoluene | 0.500 | 0.300 | 0.300 UJ | | mg/kg | D/M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0004M-0001-SO | 337815 | SO | N | 4-Nitrotoluene | 0.500 | 0.200 | 0.200 UJ | | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | Pentaerythritol Tetranitrate | 2.00 | 1.20 | 1.20 UJ | | mg/kg | D |
| 083SB-0005M-0001-SO | 337818 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0005M-0001-SO | 337818 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0008M-0001-SO | 337822 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0008M-0001-SO | 337822 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0009M-0001-SO | 337824 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0009M-0001-SO | 337824 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0011M-0001-SO | 337826 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0011M-0001-SO | 337826 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0012M-0001-SO | 337828 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0012M-0001-SO | 337828 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0013M-0001-SO | 337830 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0013M-0001-SO | 337830 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |
| 083SB-0014-0001-SO | 337832 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0014-0001-SO | 337832 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Qualified Results

Test Method: SW8330B Extraction Method: METHOD Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0015M-0001-SO | 337834 | SO | N | 3,5-Dinitroaniline | 0.300 | 0.200 | 0.200 UJ | | mg/kg | V2 |
| 083SB-0015M-0001-SO | 337834 | SO | N | 4-Amino-2,6-Dinitrotoluene | 0.300 | 0.200 | 0.200 UJ | | mg/kg | C |

Qualified analytes in samples are reported as estimated, not detected (UJ) at the Limit of Detection (LOD).

## Detected Results

Test Method: BNASIM Extraction Method: SW3550 Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | 2-Methylnaphthalene | 1.50 | 3.10 | 3.10 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Acenaphthene | 1.50 | 1.30 | 1.30 J | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Acenaphthylene | 1.50 | 0.460 | 0.460 J | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Anthracene | 1.50 | 1.10 | 1.10 J | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Benzo(a)anthracene | 1.50 | 4.70 | 4.70 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Benzo(a)pyrene | 1.50 | 2.60 | 2.60 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Benzo(b)fluoranthene | 1.50 | 6.70 | 6.70 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Benzo(g,h,i)perylene | 1.50 | 4.50 | 4.50 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Benzo(k)fluoranthene | 1.50 | 1.80 | 1.80 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Chrysene | 1.50 | 4.10 | 4.10 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Dibenz(a,h)anthracene | 1.50 | 1.10 | 1.10 J | ug/kg | TR |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Fluoranthene | 1.50 | 7.40 | 7.40 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Fluorene | 1.50 | 2.90 | 2.90 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 3.20 | 3.20 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Naphthalene | 1.50 | 2.60 | 2.60 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Phenanthrene | 1.50 | 9.20 | 9.20 | ug/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Pyrene | 1.50 | 5.90 | 5.90 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | 2-Methylnaphthalene | 1.50 | 1.50 | 1.50 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Acenaphthene | 1.50 | 1.20 | 1.20 J | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Anthracene | 1.50 | 2.40 | 2.40 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Benzo(a)anthracene | 1.50 | 5.30 | 5.30 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Benzo(a)pyrene | 1.50 | 2.10 | 2.10 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Benzo(b)fluoranthene | 1.50 | 6.00 | 6.00 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Benzo(g,h,i)perylene | 1.50 | 3.50 | 3.50 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Benzo(k)fluoranthene | 1.50 | 1.30 | 1.30 J | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Chrysene | 1.50 | 5.60 | 5.60 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Dibenz(a,h)anthracene | 1.50 | 0.820 | 0.820 J | ug/kg | TR |

Detected Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Fluoranthene | 1.50 | 7.50 | 7.50 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Fluorene | 1.50 | 1.20 | 1.20 J | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 2.20 | 2.20 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Naphthalene | 1.50 | 1.90 | 1.90 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Phenanthrene | 1.50 | 7.30 | 7.30 | ug/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Pyrene | 1.50 | 5.90 | 5.90 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 1.20 | 1.20 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Anthracene | 1.60 | 1.00 | 1.00 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Benzo(a)anthracene | 1.60 | 1.50 | 1.50 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 0.780 | 0.780 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 4.50 | 4.50 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 2.60 | 2.60 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Benzo(k)fluoranthene | 1.60 | 0.700 | 0.700 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Chrysene | 1.60 | 7.60 | 7.60 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 0.620 | 0.620 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Fluoranthene | 1.60 | 2.30 | 2.30 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Fluorene | 1.60 | 0.560 | 0.560 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Naphthalene | 1.60 | 1.50 | 1.50 J | ug/kg | TR |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Phenanthrene | 1.60 | 4.60 | 4.60 | ug/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Pyrene | 1.60 | 2.00 | 2.00 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 1.60 | 1.60 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Acenaphthene | 1.60 | 2.00 | 2.00 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Anthracene | 1.60 | 3.80 | 3.80 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Benzo(a)anthracene | 1.60 | 16.0 | 16.0 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 6.80 | 6.80 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 16.0 | 16.0 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 8.30 | 8.30 | ug/kg | |

Detected Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Benzo(k)fluoranthene | 1.60 | 3.10 | 3.10 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Chrysene | 1.60 | 14.0 | 14.0 J | ug/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 1.90 | 1.90 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Fluoranthene | 1.60 | 24.0 | 24.0 J | ug/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Fluorene | 1.60 | 1.30 | 1.30 J | ug/kg | TR |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 5.20 | 5.20 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Naphthalene | 1.60 | 1.80 | 1.80 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Phenanthrene | 1.60 | 16.0 | 16.0 | ug/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Pyrene | 1.60 | 18.0 | 18.0 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 1.90 | 1.90 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Acenaphthene | 1.60 | 0.780 | 0.780 J | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Anthracene | 1.60 | 2.10 | 2.10 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Benzo(a)anthracene | 1.60 | 7.30 | 7.30 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 3.20 | 3.20 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 8.90 | 8.90 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 6.00 | 6.00 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Benzo(k)fluoranthene | 1.60 | 1.90 | 1.90 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Chrysene | 1.60 | 8.30 | 8.30 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 1.20 | 1.20 J | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Fluoranthene | 1.60 | 10.0 | 10.0 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Fluorene | 1.60 | 0.930 | 0.930 J | ug/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 3.60 | 3.60 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Naphthalene | 1.60 | 2.00 | 2.00 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Phenanthrene | 1.60 | 11.0 | 11.0 | ug/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Pyrene | 1.60 | 8.10 | 8.10 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | 2-Methylnaphthalene | 1.50 | 2.00 | 2.00 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Acenaphthene | 1.50 | 0.710 | 0.710 J | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Anthracene | 1.50 | 7.50 | 7.50 | ug/kg | |

Detected Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Benzo(a)anthracene | 1.50 | 11.0 | 11.0 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Benzo(b)fluoranthene | 1.50 | 5.10 | 5.10 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Benzo(g,h,i)perylene | 1.50 | 3.80 | 3.80 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Benzo(k)fluoranthene | 1.50 | 0.980 | 0.980 J | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Chrysene | 1.50 | 8.30 | 8.30 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Dibenz(a,h)anthracene | 1.50 | 0.750 | 0.750 J | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Fluoranthene | 1.50 | 4.10 | 4.10 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Fluorene | 1.50 | 0.740 | 0.740 J | ug/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 1.80 | 1.80 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Naphthalene | 1.50 | 2.60 | 2.60 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Phenanthrene | 1.50 | 7.70 | 7.70 | ug/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Pyrene | 1.50 | 3.60 | 3.60 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 1.70 | 1.70 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 0.450 | 0.450 J | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 4.50 | 4.50 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 3.00 | 3.00 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Chrysene | 1.60 | 9.40 | 9.40 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 0.570 | 0.570 J | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Fluoranthene | 1.60 | 1.50 | 1.50 J | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Fluorene | 1.60 | 0.620 | 0.620 J | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.10 | 1.10 J | ug/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Naphthalene | 1.60 | 1.70 | 1.70 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Phenanthrene | 1.60 | 4.70 | 4.70 | ug/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Pyrene | 1.60 | 1.40 | 1.40 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 2.80 | 2.80 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Acenaphthene | 1.60 | 0.540 | 0.540 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Benzo(a)anthracene | 1.60 | 2.30 | 2.30 | ug/kg | |

Detected Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 1.20 | 1.20 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 5.70 | 5.70 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 5.40 | 5.40 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Benzo(k)fluoranthene | 1.60 | 0.570 | 0.570 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Chrysene | 1.60 | 9.60 | 9.60 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 0.910 | 0.910 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Fluoranthene | 1.60 | 3.10 | 3.10 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Fluorene | 1.60 | 0.540 | 0.540 J | ug/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.90 | 1.90 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Naphthalene | 1.60 | 2.90 | 2.90 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Phenanthrene | 1.60 | 7.40 | 7.40 | ug/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Pyrene | 1.60 | 3.20 | 3.20 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 2.20 | 2.20 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Acenaphthene | 1.60 | 0.540 | 0.540 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 0.750 | 0.750 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 3.90 | 3.90 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 4.30 | 4.30 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Chrysene | 1.60 | 8.60 | 8.60 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 0.600 | 0.600 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Fluoranthene | 1.60 | 1.50 | 1.50 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Fluorene | 1.60 | 0.490 | 0.490 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.30 | 1.30 J | ug/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Naphthalene | 1.60 | 2.20 | 2.20 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Phenanthrene | 1.60 | 6.40 | 6.40 | ug/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Pyrene | 1.60 | 1.80 | 1.80 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | 2-Methylnaphthalene | 1.50 | 2.10 | 2.10 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Acenaphthene | 1.50 | 0.570 | 0.570 J | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Benzo(a)anthracene | 1.50 | 2.80 | 2.80 | ug/kg | |

Detected Results

| Test Method: BNASIM | Extraction Method: SW3550 | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Benzo(a)pyrene | 1.50 | 1.40 | 1.40 J | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Benzo(b)fluoranthene | 1.50 | 5.60 | 5.60 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Benzo(g,h,i)perylene | 1.50 | 3.60 | 3.60 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Benzo(k)fluoranthene | 1.50 | 0.950 | 0.950 J | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Chrysene | 1.50 | 8.30 | 8.30 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Dibenz(a,h)anthracene | 1.50 | 0.660 | 0.660 J | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Fluoranthene | 1.50 | 4.50 | 4.50 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Fluorene | 1.50 | 0.660 | 0.660 J | ug/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 1.70 | 1.70 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Naphthalene | 1.50 | 2.40 | 2.40 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Phenanthrene | 1.50 | 9.10 | 9.10 | ug/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Pyrene | 1.50 | 3.60 | 3.60 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | 2-Methylnaphthalene | 1.50 | 1.80 | 1.80 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Benzo(b)fluoranthene | 1.50 | 3.20 | 3.20 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Benzo(g,h,i)perylene | 1.50 | 1.50 | 1.50 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Chrysene | 1.50 | 6.50 | 6.50 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Dibenz(a,h)anthracene | 1.50 | 0.650 | 0.650 J | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Fluoranthene | 1.50 | 1.10 | 1.10 J | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Fluorene | 1.50 | 0.500 | 0.500 J | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 0.580 | 0.580 J | ug/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Naphthalene | 1.50 | 2.80 | 2.80 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Phenanthrene | 1.50 | 3.90 | 3.90 | ug/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Pyrene | 1.50 | 0.720 | 0.720 J | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | 2-Methylnaphthalene | 1.60 | 3.70 | 3.70 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Benzo(a)pyrene | 1.60 | 0.680 | 0.680 J | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Benzo(b)fluoranthene | 1.60 | 5.90 | 5.90 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Benzo(g,h,i)perylene | 1.60 | 6.50 | 6.50 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Chrysene | 1.60 | 16.0 | 16.0 | ug/kg | |

## Detected Results

Test Method: BNASIM Extraction Method: SW3550 Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Dibenz(a,h)anthracene | 1.60 | 0.890 | 0.890 J | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Fluoranthene | 1.60 | 2.50 | 2.50 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.60 | 1.40 | 1.40 J | ug/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Naphthalene | 1.60 | 3.70 | 3.70 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Phenanthrene | 1.60 | 23.0 | 23.0 | ug/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Pyrene | 1.60 | 2.60 | 2.60 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | 2-Methylnaphthalene | 1.50 | 2.90 | 2.90 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Acenaphthene | 1.50 | 0.520 | 0.520 J | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Benzo(a)pyrene | 1.50 | 0.590 | 0.590 J | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Benzo(b)fluoranthene | 1.50 | 4.70 | 4.70 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Benzo(g,h,i)perylene | 1.50 | 4.10 | 4.10 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Chrysene | 1.50 | 12.0 | 12.0 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Dibenz(a,h)anthracene | 1.50 | 0.680 | 0.680 J | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Fluoranthene | 1.50 | 1.80 | 1.80 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Fluorene | 1.50 | 0.670 | 0.670 J | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Indeno(1,2,3-c,d)pyrene | 1.50 | 1.10 | 1.10 J | ug/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Naphthalene | 1.50 | 2.60 | 2.60 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Phenanthrene | 1.50 | 9.10 | 9.10 | ug/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Pyrene | 1.50 | 1.80 | 1.80 | ug/kg | |

Test Method: E160.3 Extraction Method: NONE Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Solids | 1.00 | 97.5 | 97.5 | PERCENT | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Solids | 1.00 | 97.5 | 97.5 | PERCENT | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Solids | 1.00 | 96.0 | 96.0 | PERCENT | |

## Detected Results

Test Method: E160.3 Extraction Method: NONE Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Solids | 1.00 | 95.6 | 95.6 | PERCENT | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Solids | 1.00 | 94.1 | 94.1 | PERCENT | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Solids | 1.00 | 97.1 | 97.1 | PERCENT | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Solids | 1.00 | 94.9 | 94.9 | PERCENT | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Solids | 1.00 | 96.1 | 96.1 | PERCENT | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Solids | 1.00 | 96.2 | 96.2 | PERCENT | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Solids | 1.00 | 96.6 | 96.6 | PERCENT | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Solids | 1.00 | 97.4 | 97.4 | PERCENT | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Solids | 1.00 | 95.3 | 95.3 | PERCENT | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Solids | 1.00 | 96.9 | 96.9 | PERCENT | |

Test Method: SW6010C Extraction Method: TOTAL Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Aluminum | 1.30 | 11300 | 11300 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Antimony | 0.850 | 1.00 | 1.00 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Arsenic | 4.30 | 13.9 | 13.9 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Barium | 0.270 | 73.5 | 73.5 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Beryllium | 0.210 | 0.650 | 0.650 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Calcium | 7.40 | 23100 | 23100 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Chromium | 0.740 | 17.0 | 17.0 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Cobalt | 1.30 | 11.9 | 11.9 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Copper | 2.10 | 20.2 | 20.2 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Iron | 9.60 | 24800 | 24800 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Lead | 1.30 | 21.0 | 21.0 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Magnesium | 4.30 | 6070 | 6070 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Manganese | 0.800 | 432 | 432 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Nickel | 0.640 | 27.8 | 27.8 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Potassium | 70.0 | 1200 | 1200 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Sodium | 26.0 | 49.2 | 49.2 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Vanadium | 0.430 | 18.3 | 18.3 | mg/kg | |
| 083SB-0001M-0001-SO | 337811 | SO | N | 5 | Zinc | 1.60 | 60.3 | 60.3 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Aluminum | 1.20 | 12300 | 12300 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Antimony | 0.800 | 1.10 | 1.10 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Arsenic | 4.00 | 16.6 | 16.6 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Barium | 0.250 | 83.4 | 83.4 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Beryllium | 0.200 | 0.670 | 0.670 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Calcium | 7.00 | 31900 | 31900 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Chromium | 0.700 | 18.7 | 18.7 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Cobalt | 1.20 | 13.7 | 13.7 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Copper | 2.00 | 20.7 | 20.7 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Iron | 9.00 | 27800 | 27800 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Lead | 1.20 | 12.2 | 12.2 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Magnesium | 4.00 | 8100 | 8100 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Manganese | 0.750 | 515 | 515 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Nickel | 0.600 | 31.4 | 31.4 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Potassium | 66.0 | 1420 | 1420 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Sodium | 24.0 | 68.2 | 68.2 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Vanadium | 0.400 | 18.5 | 18.5 | mg/kg | |
| 083SB-0002M-0001-SO | 337812 | SO | N | 5 | Zinc | 1.50 | 63.0 | 63.0 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Aluminum | 1.30 | 17900 | 17900 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Antimony | 0.840 | 0.960 | 0.960 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Arsenic | 4.20 | 18.2 | 18.2 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Barium | 0.260 | 110 | 110 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Beryllium | 0.210 | 0.920 | 0.920 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Calcium | 7.40 | 46700 | 46700 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Chromium | 0.740 | 25.5 | 25.5 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Cobalt | 1.30 | 15.8 | 15.8 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Copper | 2.10 | 25.4 | 25.4 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Iron | 9.50 | 39100 | 39100 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Lead | 1.30 | 16.6 | 16.6 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Magnesium | 4.20 | 11000 | 11000 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Manganese | 0.790 | 594 | 594 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Nickel | 0.630 | 37.9 | 37.9 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Potassium | 69.0 | 1590 | 1590 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Sodium | 25.0 | 66.6 | 66.6 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Vanadium | 0.420 | 25.6 | 25.6 | mg/kg | |
| 083SB-0003M-0001-SO | 337813 | SO | N | 5 | Zinc | 1.60 | 85.0 | 85.0 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Aluminum | 1.20 | 10900 | 10900 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Antimony | 0.810 | 1.00 | 1.00 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Arsenic | 4.10 | 13.3 | 13.3 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Barium | 0.250 | 76.5 | 76.5 J | mg/kg | M/A |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Beryllium | 0.200 | 0.560 | 0.560 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Calcium | 7.10 | 31600 | 31600 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Chromium | 0.710 | 15.4 | 15.4 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Cobalt | 1.20 | 11.1 | 11.1 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Copper | 2.00 | 14.2 | 14.2 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Iron | 9.10 | 25100 | 25100 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Lead | 1.30 | 8.50 | 8.50 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Magnesium | 4.10 | 6720 | 6720 J | mg/kg | M/A |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Manganese | 0.760 | 481 | 481 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Nickel | 0.610 | 24.5 | 24.5 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Potassium | 67.0 | 1660 | 1660 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Sodium | 24.0 | 67.0 | 67.0 | mg/kg | |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Vanadium | 0.410 | 15.5 | 15.5 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 5 | Zinc | 1.50 | 46.1 | 46.1 J | mg/kg | M |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Aluminum | 1.20 | 12500 | 12500 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Antimony | 4.10 | 1.20 | 1.20 J | mg/kg | TR |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Arsenic | 4.10 | 13.9 | 13.9 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Barium | 0.260 | 78.1 | 78.1 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Beryllium | 0.210 | 0.680 | 0.680 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Calcium | 7.30 | 28900 | 28900 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Chromium | 0.730 | 18.3 | 18.3 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Cobalt | 1.20 | 11.8 | 11.8 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Copper | 2.10 | 21.3 | 21.3 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Iron | 9.30 | 27200 | 27200 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Lead | 1.30 | 11.8 | 11.8 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Magnesium | 4.10 | 7530 | 7530 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Manganese | 0.780 | 428 | 428 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Nickel | 0.620 | 29.2 | 29.2 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Potassium | 68.0 | 1300 | 1300 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Sodium | 25.0 | 55.2 | 55.2 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Vanadium | 0.410 | 18.8 | 18.8 | mg/kg | |
| 083SB-0005M-0001-SO | 337818 | SO | N | 5 | Zinc | 1.60 | 70.2 | 70.2 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Aluminum | 1.20 | 10800 | 10800 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Antimony | 4.00 | 1.00 | 1.00 J | mg/kg | TR |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Arsenic | 4.00 | 12.6 | 12.6 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Barium | 0.250 | 70.2 | 70.2 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Beryllium | 0.200 | 0.610 | 0.610 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Cadmium | 0.200 | 0.0460 | 0.0460 J | mg/kg | TR |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Calcium | 6.90 | 24400 | 24400 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Chromium | 0.690 | 16.2 | 16.2 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Cobalt | 1.20 | 11.0 | 11.0 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Copper | 2.00 | 19.9 | 19.9 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Iron | 8.90 | 23800 | 23800 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Lead | 1.20 | 10.8 | 10.8 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Magnesium | 4.00 | 6660 | 6660 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Manganese | 0.740 | 380 | 380 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Nickel | 0.590 | 27.0 | 27.0 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Potassium | 65.0 | 1250 | 1250 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Sodium | 24.0 | 53.7 | 53.7 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Vanadium | 0.400 | 16.7 | 16.7 | mg/kg | |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 5 | Zinc | 1.50 | 64.1 | 64.1 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Aluminum | 1.20 | 12500 | 12500 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Antimony | 4.10 | 0.920 | 0.920 J | mg/kg | TR |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Arsenic | 4.10 | 11.7 | 11.7 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Barium | 0.260 | 80.4 | 80.4 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Beryllium | 0.200 | 0.640 | 0.640 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Calcium | 7.20 | 36200 | 36200 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Chromium | 0.720 | 18.5 | 18.5 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Cobalt | 1.20 | 12.5 | 12.5 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Copper | 2.00 | 20.7 | 20.7 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Iron | 9.20 | 26000 | 26000 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Lead | 1.30 | 11.5 | 11.5 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Magnesium | 4.10 | 8800 | 8800 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Manganese | 0.770 | 441 | 441 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Nickel | 0.610 | 29.9 | 29.9 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Potassium | 68.0 | 1610 | 1610 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Sodium | 25.0 | 72.6 | 72.6 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Vanadium | 0.410 | 18.8 | 18.8 | mg/kg | |
| 083SB-0008M-0001-SO | 337822 | SO | N | 5 | Zinc | 1.50 | 62.2 | 62.2 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Aluminum | 1.30 | 11600 | 11600 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Antimony | 4.20 | 0.920 | 0.920 J | mg/kg | TR |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Arsenic | 4.20 | 11.6 | 11.6 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Barium | 0.260 | 76.2 | 76.2 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Beryllium | 0.210 | 0.590 | 0.590 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Calcium | 7.40 | 30500 | 30500 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Chromium | 0.740 | 17.6 | 17.6 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Cobalt | 1.30 | 11.6 | 11.6 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Copper | 2.10 | 19.3 | 19.3 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Iron | 9.50 | 25000 | 25000 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Lead | 1.30 | 10.7 | 10.7 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Magnesium | 4.20 | 8030 | 8030 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Manganese | 0.790 | 387 | 387 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Nickel | 0.630 | 27.9 | 27.9 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Potassium | 70.0 | 1570 | 1570 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Sodium | 25.0 | 76.1 | 76.1 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Vanadium | 0.420 | 17.8 | 17.8 | mg/kg | |
| 083SB-0009M-0001-SO | 337824 | SO | N | 5 | Zinc | 1.60 | 58.9 | 58.9 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Aluminum | 1.20 | 11200 | 11200 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Antimony | 4.00 | 1.00 | 1.00 J | mg/kg | TR |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Arsenic | 4.00 | 12.6 | 12.6 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Barium | 0.250 | 79.8 | 79.8 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Beryllium | 0.200 | 0.580 | 0.580 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Calcium | 7.00 | 33900 | 33900 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Chromium | 0.700 | 16.6 | 16.6 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Cobalt | 1.20 | 12.9 | 12.9 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Copper | 2.00 | 18.5 | 18.5 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Iron | 9.00 | 24600 | 24600 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Lead | 1.30 | 9.10 | 9.10 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Magnesium | 4.00 | 7730 | 7730 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Manganese | 0.750 | 482 | 482 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Nickel | 0.600 | 28.9 | 28.9 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Potassium | 66.0 | 1580 | 1580 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Sodium | 24.0 | 91.1 | 91.1 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Vanadium | 0.400 | 16.6 | 16.6 | mg/kg | |
| 083SB-0011M-0001-SO | 337826 | SO | N | 5 | Zinc | 1.50 | 54.7 | 54.7 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Aluminum | 1.20 | 11300 | 11300 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Antimony | 4.10 | 1.10 | 1.10 J | mg/kg | TR |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Arsenic | 4.10 | 11.1 | 11.1 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Barium | 0.250 | 76.6 | 76.6 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Beryllium | 0.200 | 0.570 | 0.570 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Calcium | 7.10 | 32200 | 32200 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Chromium | 0.710 | 16.2 | 16.2 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Cobalt | 1.20 | 8.80 | 8.80 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Copper | 2.00 | 16.7 | 16.7 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Iron | 9.10 | 24200 | 24200 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Lead | 1.30 | 9.20 | 9.20 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Magnesium | 4.10 | 6980 | 6980 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Manganese | 0.760 | 307 | 307 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Nickel | 0.610 | 22.7 | 22.7 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Potassium | 67.0 | 1480 | 1480 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Sodium | 24.0 | 85.3 | 85.3 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Vanadium | 0.410 | 16.5 | 16.5 | mg/kg | |
| 083SB-0012M-0001-SO | 337828 | SO | N | 5 | Zinc | 1.50 | 51.3 | 51.3 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Aluminum | 1.20 | 10100 | 10100 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Antimony | 4.00 | 1.30 | 1.30 J | mg/kg | TR |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Arsenic | 4.00 | 11.0 | 11.0 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Barium | 0.250 | 58.6 | 58.6 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Beryllium | 0.200 | 0.530 | 0.530 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Calcium | 7.00 | 27400 | 27400 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Chromium | 0.700 | 15.1 | 15.1 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Cobalt | 1.20 | 9.10 | 9.10 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Copper | 2.00 | 16.9 | 16.9 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Iron | 9.00 | 22300 | 22300 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Lead | 1.30 | 8.60 | 8.60 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Magnesium | 4.00 | 6890 | 6890 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Manganese | 0.750 | 314 | 314 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Nickel | 0.600 | 23.0 | 23.0 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Potassium | 66.0 | 1480 | 1480 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Sodium | 24.0 | 96.4 | 96.4 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Vanadium | 0.400 | 15.5 | 15.5 | mg/kg | |
| 083SB-0013M-0001-SO | 337830 | SO | N | 5 | Zinc | 1.50 | 48.7 | 48.7 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Aluminum | 1.30 | 8880 | 8880 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Antimony | 4.20 | 0.840 | 0.840 J | mg/kg | TR |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Arsenic | 4.20 | 7.00 | 7.00 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Barium | 0.260 | 56.3 | 56.3 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Beryllium | 0.210 | 0.470 | 0.470 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Calcium | 7.30 | 25200 | 25200 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Chromium | 0.730 | 14.8 | 14.8 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Cobalt | 1.30 | 6.50 | 6.50 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Copper | 2.10 | 11.1 | 11.1 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Iron | 9.40 | 19200 | 19200 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Lead | 1.30 | 6.40 | 6.40 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Magnesium | 4.20 | 4750 | 4750 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Manganese | 0.790 | 275 | 275 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Nickel | 0.630 | 16.5 | 16.5 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Potassium | 69.0 | 1630 | 1630 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Sodium | 25.0 | 81.6 | 81.6 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Vanadium | 0.420 | 14.7 | 14.7 | mg/kg | |
| 083SB-0014-0001-SO | 337832 | SO | N | 5 | Zinc | 1.60 | 33.6 | 33.6 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Aluminum | 0.250 | 2020 | 2020 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 5 | Antimony | 4.10 | 0.860 | 0.860 J | mg/kg | TR |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Arsenic | 0.820 | 1.90 | 1.90 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Barium | 0.0510 | 11.7 | 11.7 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Beryllium | 0.0410 | 0.100 | 0.100 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Calcium | 1.40 | 6030 | 6030 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Chromium | 0.140 | 3.10 | 3.10 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Cobalt | 0.250 | 1.80 | 1.80 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Copper | 0.410 | 3.50 | 3.50 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Iron | 1.80 | 4310 | 4310 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Lead | 0.260 | 1.70 | 1.70 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Magnesium | 0.820 | 1480 | 1480 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Manganese | 0.150 | 65.2 | 65.2 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Nickel | 0.120 | 4.90 | 4.90 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Potassium | 68.0 | 1670 | 1670 | mg/kg | |

Detected Results

| Test Method: SW6010C | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Sodium | 25.0 | 87.5 | 87.5 | mg/kg | |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Vanadium | 0.0820 | 3.20 | 3.20 U | mg/kg | B2 |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Zinc | 0.310 | 10.0 | 10.0 | mg/kg | |

| Test Method: SW7471B | Extraction Method: TOTAL | | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Mercury | 0.00900 | 0.0340 | 0.0340 J | mg/kg | M |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Mercury | 0.00910 | 0.0100 | 0.0100 J | mg/kg | M |
| 083SB-0003M-0001-SO | 337813 | SO | N | 1 | Mercury | 0.00890 | 0.00900 | 0.00900 J | mg/kg | M |
| 083SB-0004M-0001-SO | 337815 | SO | N | 1 | Mercury | 0.00900 | 0.00720 | 0.00720 J | mg/kg | TR/M |
| 083SB-0005M-0001-SO | 337818 | SO | N | 1 | Mercury | 0.00910 | 0.0130 | 0.0130 J | mg/kg | M |
| 083SB-0006M-0001-SO | 337820 | SO | FD | 1 | Mercury | 0.00870 | 0.0120 | 0.0120 J | mg/kg | M |
| 083SB-0008M-0001-SO | 337822 | SO | N | 1 | Mercury | 0.00870 | 0.00970 | 0.00970 J | mg/kg | M |
| 083SB-0009M-0001-SO | 337824 | SO | N | 1 | Mercury | 0.00880 | 0.00970 | 0.00970 J | mg/kg | M |
| 083SB-0011M-0001-SO | 337826 | SO | N | 1 | Mercury | 0.00910 | 0.00730 | 0.00730 J | mg/kg | TR/M |
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | Mercury | 0.00920 | 0.00650 | 0.00650 J | mg/kg | TR/M |
| 083SB-0013M-0001-SO | 337830 | SO | N | 1 | Mercury | 0.00900 | 0.00630 | 0.00630 J | mg/kg | TR/M |
| 083SB-0014-0001-SO | 337832 | SO | N | 1 | Mercury | 0.00930 | 0.00750 | 0.00750 J | mg/kg | TR/M |
| 083SB-0015M-0001-SO | 337834 | SO | N | 1 | Mercury | 0.00890 | 0.00760 | 0.00760 J | mg/kg | TR/M |

## Detected Results

Test Method: SW8081B Extraction Method: SW3546 Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0012M-0001-SO | 337828 | SO | N | 1 | delta-BHC (delta-Hexachlorocyclohexane) | 2.50 | 1.10 | 1.10 J | ug/kg | TR/I/P1 |

Test Method: SW8260C Extraction Method: SW5030B Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0020-0001-TB | 338809 | WG | N | 1 | Acetone | 20.0 | 15.0 | 15.0 J | ug/L | TR |

Test Method: SW8270D Extraction Method: SW3550 Leach Method: NONE

| FieldSample ID | LabSample ID | Matrix | Type | Dilution | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| 083SB-0001M-0001-SO | 337811 | SO | N | 1 | Di-n-Butyl Phthalate | 410 | 140 | 140 J | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Di-n-Butyl Phthalate | 410 | 90.0 | 90.0 J | ug/kg | TR |
| 083SB-0002M-0001-SO | 337812 | SO | N | 1 | Di-n-Octylphthalate | 210 | 91.0 | 91.0 J | ug/kg | TR |

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## Rejected Results

| Test Method: SW8270D | Extraction Method: SW3550 | Leach Method: NONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| FieldSample ID | LabSample ID | Matrix | Type | Analyte | LOQ | Lab Result | Qualified Result | Units | Reason |
| 083SB-0004M-0001-SO | 337815 | SO | N | Benzyl Alcohol | 420 | 130 | 0.00 R | ug/kg | M |

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## Anomalies Count

| Test/Extraction Method/Leach | Field Samples Outside of Compliance | Analytes Outside of Compliance |
|---|---|---|
| E160.3/NONE/NONE | 13 | 13 |
| E353.2/METHOD/NONE | 13 | 13 |
| SW6010C/TOTAL/NONE | 13 | 150 |
| SW8081B/SW3546/NONE | 1 | 20 |
| SW8260C/SW5030B/NONE | 3 | 118 |
| SW8270D/SW3550/NONE | 13 | 303 |
| SW8330B/METHOD/NONE | 13 | 143 |

Anomalies are cases where the reported RL exceeds that specified in the governing project document.

## Review Questions

Method: BNASIM

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified PQLs achieved? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Was the GC/MS system properly tuned based on method criteria? | • | | | |
| Was the criteria met during each 12 hour shift (prior to ICAL and Cal Ver.)? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Did the Calibration Check Compounds (CCCs) have a relative standard deviation within QAPP acceptance limits? | • | | | |
| Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) within QAPP acceptance limits? | • | | | |
| Were all other target analytes within criteria? OR Was the average across all target analytes within criteria? Was a different calibration option used? | • | | | |
| If a linear regression curve was used, was the correlation coefficient within criteria? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria? | • | | | |
| Was a CCV(s) run at the proper frequency? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Did the CCCs have a %Difference within QAPP acceptance limits? | | | | |
| Were the average RFs for the SPCCs within QAPP acceptance limits? | • | | | |
| Was the average %D (difference or drift) for all target analytes within QAPP acceptance limits? | • | | | |
| Were the internal standards added to every standard, blank, matrix spike, matrix spike duplicate, and sample? | • | | | |
| Were the retention times for all IS compounds within QAPP acceptance limits? | • | | | |
| Are the area counts of all IS compounds within QAPP acceptance limits? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |

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## Review Questions

Method: BNASIM

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were target analytes detected in the method blank above the MDL? | • | | | Benzo (a) anthracene was detected in method blank. No samples qualified due to sample results >5x AL. |
| Was a field blank (equipment or trip) collected and analyzed at the required frequency? | • | | | Equipment Blank collected. Sample 083SB-0023-0001-ER . All ND. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? | • | | | Single LCS only |
| Were the LCS/LCSD recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | • | | Chrysene and Fluoranthene %R were below QC limits. Associated sample qualified |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| For non-aqueous sample, did the sample have a Percent Moisture less than 70.0%? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were instrument run logs present and filled out appropriately? | | | • | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were the MRL recoveries within 70-130% limits? | • | | | |

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## Review Questions

Method: E160.3

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | | | • | |
| Was a method blank prepared and analyzed with each batch? | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | | | • | |
| Was a duplicate sample prepared and analyzed with each batch? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | | | • | |
| Were sample concentrations within calibration range? | | | • | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | | | • | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | | | • | |

## Review Questions

Method: E353.2

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | | • | | |
| Was a field blank collected and analyzed? | • | | | Equipment Blank collected. Sample 083SB-0023-0001-ER . |
| Were target analytes reported in the field blank analyses above the MDL? | • | | | Traces found in Equipment Blank. No impact on samples. |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the MRL recoveries within 70-130% limits? | • | | | |
| Was a duplicate sample prepared and analyzed with each batch? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | | | • | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were the MS/MSD recoveries and RPDs within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001-SO; Nitrocellulose %R below QC limits. Sample qualified. |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | | | • | |

## Review Questions

Method: E353.2

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | | | • | |

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## Review Questions

Method: SW6010C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | Mg detected in the ICB; Ba and V detected in the CCB; V qualified U on 1 sample. |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | • | | | Al, Ba, Ca, Mg, Mn, Ni and Tl detected in the MB. Tl qualified U for 3 samples. No other impact on other samples due to results >5x AL. |
| Was a field blank collected and analyzed? | • | | | Equipment Blank collected. Sample 083SB-0023-0001-ER . |
| Were target analytes reported in the field blank analyses above the MDL? | • | | | Traces of Ag found in Equipment Blank. No impact on samples. |
| Was an Interference Check Standard (ICS) run at the beginning and end of every run? | • | | | |
| Was the ICS recovery within QAPP acceptance limits? | • | | | |
| If a field duplicate was analyzed, were the RPDs within criteria? | • | | | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the MRL recoveries within 70-130% limits? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were the MS/MSD within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001; Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mg, Ni, V, Zn %R were below QC limits. Results qualified in parent sample. |
| Was a serial dilution prepared and analyzed with each batch? | • | | | |
| Was the serial dilution within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001; Ba and Mg >10%. Results qualifed in parent sample. |
| Were sample concentrations within calibration range? | • | | | |

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## Review Questions

Method: SW6010C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | PSD low % R for As, Be, Co, Pb, Ni, V, Zn. Results qualified in parent sample. |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | | | • | |

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## Review Questions

Method: SW7471B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | | • | | |
| Was a field blank collected and analyzed? | • | | | Equipment Blank collected. All ND. |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Was the ICS recovery within QAPP acceptance limits? | | | • | Not analyzed with Hg. |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were the MS/MSD within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001; %R above QC limits. Batch results qualified. |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | | | • | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | | | • | |

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## Review Questions

Method: SW8081B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) ? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =15%)? | • | | | |
| Was a CCV(s) run at the proper frequency? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =15%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | • | | | Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| Were surrogate recoveries within QAPP acceptance limits? | | • | | low %R for 1 sample; results qualified. |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | Single LCS only. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | | | • | Not collected. |
| Were the Breakdown products within QAPP acceptance limits? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | Sample 083SB-0004M-0001; within %R within QC limits. |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | • | | | Dual column RPD out for delta-BHC in 1 sample; results qualified. |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

## Review Questions

Method: SW8081B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were instrument run logs present and filled out appropriately? | | | • | |

## Review Questions

Method: SW8082

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =15%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =15%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | • | | | Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | Single LCS only. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | • | | | |
| Were the Breakdown products within QAPP acceptance limits? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | Sample 083SB-0004M-0001; within QC limits |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | • | | | Samples all ND. |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |

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## Review Questions

Method: SW8082

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| For non-aqueous sample, did the sample have a Percent Moisture less than 70.0%? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were instrument run logs present and filled out appropriately? | | | • | |

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## Review Questions

Method: SW8260C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified PQLs achieved? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Was the GC/MS system properly tuned based on method criteria? | • | | | |
| Was the criteria met during each 12 hour shift (prior to ICAL and Cal Ver.)? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Did the Calibration Check Compounds (CCCs) have a relative standard deviation within QAPP acceptance limits? | • | | | |
| Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) within QAPP acceptance limits? | • | | | |
| Were all other target analytes within criteria? OR Was the average across all target analytes within criteria? Was a different calibration option used? | • | | | |
| If a linear regression curve was used, was the correlation coefficient within criteria? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria? | • | | | |
| Was a CCV(s) run at the proper frequency? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Did the CCCs have a %Difference within QAPP acceptance limits? | • | | | |
| Were the average RFs for the SPCCs within QAPP acceptance limits? | • | | | |
| Was the average %D (difference or drift) for all target analytes within QAPP acceptance limits? | | • | | Methylene Chloride, Bromomethane and tetrachloroethene %D >20%. M.C. results impacted by MB; not qualified. Others qualified by batch. |
| Were the internal standards added to every standard, blank, matrix spike, matrix spike duplicate, and sample? | • | | | |
| Were the retention times for all IS compounds within QAPP acceptance limits? | • | | | |
| Are the area counts of all IS compounds within QAPP acceptance limits? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | • | | | Methylene Chloride detected in MB. Sample and TB results changed to ND. |

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## Review Questions

Method: SW8260C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Was a field blank (equipment or trip) collected and analyzed at the required frequency? | • | | | 3 Trip Blanks and Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | • | | | Methylene Chloride detected in all 3 TBs (All changed to ND based on MB). Traces of Chlorofrm found in the Equipment Blank. No impact on samples due to concentrations being ND. Acetone detected in 1 TB. 1 Sample qualified U. |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? | • | | | Single LCS only. |
| Were the LCS/LCSD recoveries within QAPP acceptance limits? | | • | | Methylene Chloride %R outside QC limits. Results already qualified by MB. |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001; Methylene Chloride %R ouside QC limits. Associated sample qualified. |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were instrument run logs present and filled out appropriately? | | | • | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were the MRL recoveries within 70-130% limits? | | • | | Acetone and Methylene Chloride were outside QC limits, >130%. Following blank evaluations, all assoc. acetone and MC results ND. No quals necessary. |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Review Questions

Method: SW8270D

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified PQLs achieved? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Was the GC/MS system properly tuned based on method criteria? | • | | | |
| Was the criteria met during each 12 hour shift (prior to ICAL and Cal Ver.)? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Did the Calibration Check Compounds (CCCs) have a relative standard deviation within QAPP acceptance limits? | • | | | |
| Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) within QAPP acceptance limits? | • | | | |
| Were all other target analytes within criteria? OR Was the average across all target analytes within criteria? Was a different calibration option used? | • | | | |
| If a linear regression curve was used, was the correlation coefficient within criteria? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Did the CCCs have a %Difference within QAPP acceptance limits? | • | | | |
| Were the average RFs for the SPCCs within QAPP acceptance limits? | • | | | |
| Was the average %D (difference or drift) for all target analytes within QAPP acceptance limits? | • | | | |
| Were the internal standards added to every standard, blank, matrix spike, matrix spike duplicate, and sample? | • | | | |
| Were the retention times for all IS compounds within QAPP acceptance limits? | • | | | |
| Are the area counts of all IS compounds within QAPP acceptance limits? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |

## Review Questions

Method: SW8270D

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Was a field blank (equipment or trip) collected and analyzed at the required frequency? | • | | | Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? | • | | | Single LCS only. |
| Were the LCS/LCSD recoveries within QAPP acceptance limits? | | • | | Hexachlorocyclopentadiene %R below QC limits. Batch results qualified. |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001-SO; Benzyl Alcohol %R < 10% (3%). Sample qualified R. |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| For non-aqueous sample, did the sample have a Percent Moisture less than 70.0%? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were instrument run logs present and filled out appropriately? | | | • | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were the MRL recoveries within 70-130% limits? | | | | |

## Review Questions

Method: SW8330

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) ? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV(s) run at the proper frequency? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | • | | | Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | Single LCS only. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | Sample 083SB-0004M-0001; Within recovery limits. |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | • | | | |
| Did PDA spectra for reported compounds match associated standard spectra? | | | • | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Review Questions

Method: SW8330

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| For non-aqueous sample, did the sample have a Percent Moisture less than 70.0%? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were instrument run logs present and filled out appropriately? | | | • | |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Review Questions

Method: SW8330B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | | • | | 3,5-Dinitroaniline %D >20%. Samples qualified by batch. |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | • | | | Equipment Blank collected. |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| Were surrogate recoveries within QAPP acceptance limits? | | • | | Surrogate %R in sample 083SB-0015M-0001 was above lab QC limits. No sample detections; no impact on sample. |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | | • | | LCS %R below limits for 4-amino-2,6-dinitrotoluene; results qualified by batch. |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | Single LCS only. |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | • | | | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | • | | Sample 083SB-0004M-0001; MSD %R outside QC limits for 3-Nitrotoluene and 4-Nitrotoluene. RPD out for PETN. Associated sample results qualified. |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | • | | | All ND |
| Did PDA spectra for reported compounds match associated standard spectra? | | | • | |

**Automated Data Review Detail Report for 99211_83_0813**
Ravenna Army Ammunition Plant
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

## Review Questions

Method: SW8330B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| For non-aqueous sample, did the sample have a Percent Moisture less than 70.0%? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | | | • | |
| Were instrument run logs present and filled out appropriately? | | | • | |

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**WORKSHEET 2**

**Automated Data Review Summary for 240-18735-1/-2**
**Source Water**

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## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Facility:** Ravenna Army Ammunition Plant

**Event:** Fall 2012 SI/RI Sampling

**Guidance Document:** Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

**Contract Laboratory:** TestAmerica, Inc., North Canton, OH

**Field Contractor:** Environmental Chemical Corporation, Abingdon, MD

**Data Review Contractor:**

**SDG:** J18735_SourceWater, Certified - 10/4/2013 by frederickroche

**QC Level:**

**Project Manager:**

**Data Reviewer:**

**Data Reviewer Title:**

**Date of Review Report:**

### Samples Included in SDG J18735_SourceWater

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| E353.2/NONE | 2 | 0 |
| M8015D/NONE | 2 | 0 |
| M8015V/NONE | 2 | 0 |
| SW6020/NONE | 2 | 0 |
| SW7470A/NONE | 2 | 0 |
| SW8081/NONE | 2 | 0 |
| SW8082/NONE | 2 | 0 |

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| SW8151A/NONE | 2 | 0 |
| SW8260B/NONE | 2 | 0 |
| SW8270C/NONE | 2 | 0 |
| SW8330B/NONE | 2 | 0 |

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012 to the extent possible. Where definitive guidance is not provided, data has been evaluated in a conservative manner using professional judgment. In cases where two qualifiers are listed as an action, such as 'J/UJ', the first qualifier applies to positive results, and the second to non-detect results.

Samples were collected by Environmental Chemical Corporation, Abingdon, MD; analyses were performed by TestAmerica, Inc., North Canton, OH and were reported under sample delivery group (SDG) J18735_SourceWater. Results have been evaluated electronically using electronic data deliverables (EDDs) provided by the laboratory. The laboratory data summary forms (hard copy) have been reviewed during this effort and compared to the automated review output. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative.

The following quality control elements were supported by the electronic deliverable and were evaluated during this review effort:

Prep Hold Time

Surrogate

Test Hold Time

The following quality control elements were either not applicable to the deliverable, or were not supported by the electronic deliverable, and were therefore not included in the automated data review. Those elements required for the project were reviewed manually, as narrated in the Comment section below.

Ambient Blank

Blank

Blank - Negative

Calibration Blank

Calibration Blank - Negative

Continuing Calibration Verification

Equipment Blank

Field Blank

Field Duplicate RPD

Initial Calibration Verification

Lab Replicate RPD

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

LCS Recovery

LCS RPD

Material Blank

MS Recovery

MS RPD

Trip Blank

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

A representative sampling or ten percent of sample and QC results were manually evaluated for compliance with project specific requirements and consistency with hard copy results. The following summaries were generated during the evaluation of this data set and are included in this report as applicable.

Batch – The analytical batch report is reviewed for completeness and compliance with project specific requirements. Incomplete or non-compliant run sequences are identified and their impact on data quality are discussed in the narrative.

QC Outlier – Results exceeding the evaluation criteria are reviewed for compliance with project requirements and a minimum of ten percent of the non-compliant QC values reported electronically are verified for consistency with hard-copy values.

Qualified Results – Qualified results are evaluated for compliance with project requirements and ten percent of qualified results are verified for consistency with the QC Outliers.

Rejected Results – All rejected results are evaluated for compliance with project requirements. The reason for rejection of the data is verified against hard copy data.

Field Duplicates – Field duplicate comparison results are evaluated for compliance with project requirements and ten percent of values reported are verified for consistency with the hard-copy data.

Data Submission Warnings – Warnings encountered during the data submission process are evaluated and their affect on data quality is discussed in the narrative below.

Analytical deficiencies, project non-compliance issues and inconsistencies with hard copy results observed during ADR evaluation process and their impact on data quality are summarized in the narrative below.

A total of 0 results (0.00%) out of the 370 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected. Trace values are not counted as qualified results in the above count. The qualified results are detailed in the following tables and discussed in the narrative below, where appropriate.

### Narrative Comments

| Analytical Method | Comment |
|---|---|

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

Reviewed by ,

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reason and Comment Code Definitions**

| Reasons | |
|---|---|
| **Code** | **Definition** |
| A | Serial dilution |
| A1 | Ambient Blank |
| B | The analyte was found in an associated blank as well as in the sample. |
| B2 | CCB |
| B3 | CCB - Neg |
| c | LCS - low |
| C | LCS Recovery |
| d | Field Duplicate RPD |
| D | MS RPD |
| D1 | Lab Replicate RPD |
| D2 | No precision available |
| F | Field Blank |
| F1 | Hydrocarbon pattern does not match standard |
| G1 | Initial Calibration RRF |
| G2 | Initial Calibration RSD |
| h | Holding time exceeded by less than 2X. |
| H | Holding time exceeded by more than 2X. |
| H1 | Test Hold Time |
| H2 | Prep Hold Time |
| I | Surrogate recovery outside project limits. |
| J | CRA/CRI Recovery |
| K | An analyte (non-common laboratory artifact) was detected in the sample at a concentration less than 5X the concentration detected in the associated method blank. |
| L | Lab Blank |
| L1 | Lab Blank - Neg |
| m | MS - low |
| M | MS Recovery |
| N | Blank - No Action |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reason and Comment Code Definitions**

| | |
|---|---|
| O | ICS |
| P | Sample preservation/collection requirement not met. |
| P1 | Column RPD |
| P2 | Improper preparation/extraction |
| q | Encore sample holding time exceeded by less than 2X. |
| Q | Encore sample holding time exceeded by more than 2X. |
| Q1 | Material Blank |
| R | Exceeds LinearCalibration Range |
| S | Internal standard |
| T | Trip Blank |
| TI | Tentatively Identified Compound |
| TR | Trace Level Detect |
| U | Receipt Temperature |
| V | Equipment Blank |
| V1 | ICV |
| V2 | CCV |
| V3 | CCV RRF |
| V4 | Sample Receipt Condition |
| W | Column breakdown (pesticides) |
| X | Raised reporting limit |
| Y | Cooler temperature greater than 10 degreec C. |
| y | Cooler temperature greater than 4 degrees C, but less than 10 degreec C. |
| Y1 | False Positive |
| Y2 | Data rejected due to radiological anomolies |
| Z | LCS RPD |
| Z2 | Analyte not confirmed on second column |
| Z3 | High percent moisture in sample. |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

| Flag Code and Definitions | |
|---|---|
| Flag | Definition |
| U | Undetected: The analyte was analyzed for, but not detected. |
| UJ | The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria. |
| J | Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| R | The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making. |
| N | The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification". |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration. |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Batch Report**

**Test Method: E353.2; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8009 | 7878 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 27-Dec-2012 6:07 AM | 27-Dec-2012 1:51 PM | N |
| | 7878 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 27-Dec-2012 6:07 AM | 27-Dec-2012 1:53 PM | N |

**Test Method: M8015D; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68949 | 68549 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 13-Dec-2012 11:26 AM | 17-Dec-2012 9:35 PM | N |
| | 68549 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 13-Dec-2012 11:26 AM | 17-Dec-2012 10:05 PM | N |

**Test Method: M8015V; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69738 | 69738 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 22-Dec-2012 4:18 PM | 22-Dec-2012 4:18 PM | N |
| | 69738 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 22-Dec-2012 4:56 PM | 22-Dec-2012 4:56 PM | N |

**Test Method: SW6020; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 59694 | 59308 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 24-Dec-2012 10:24 AM | 29-Dec-2012 4:07 AM | N |
| | 59308 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 24-Dec-2012 10:24 AM | 29-Dec-2012 4:11 AM | N |

**Test Method: SW7470A; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70694 | 70255 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 27-Dec-2012 4:00 PM | 29-Dec-2012 12:08 PM | N |
| | 70255 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 27-Dec-2012 4:00 PM | 29-Dec-2012 12:10 PM | N |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Batch Report**

**Test Method: SW8081; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69152 | 68554 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 13-Dec-2012 11:40 AM | 18-Dec-2012 1:14 PM | N |
| | 68554 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 13-Dec-2012 11:40 AM | 18-Dec-2012 1:42 PM | N |

**Test Method: SW8082; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69119 | 68553 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 13-Dec-2012 11:37 AM | 18-Dec-2012 9:11 AM | N |
| | 68553 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 13-Dec-2012 11:37 AM | 18-Dec-2012 9:26 AM | N |

**Test Method: SW8151A; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70037 | 69372 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 19-Dec-2012 9:51 AM | 24-Dec-2012 5:40 PM | N |
| | 69372 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 19-Dec-2012 9:51 AM | 24-Dec-2012 6:03 PM | N |

**Test Method: SW8260B; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69591 | 69591 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 20-Dec-2012 2:04 PM | 20-Dec-2012 2:04 PM | N |
| | 69591 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 20-Dec-2012 2:26 PM | 20-Dec-2012 2:26 PM | N |

**Test Method: SW8270C; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68962 | 68547 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 13-Dec-2012 11:21 AM | 17-Dec-2012 12:28 PM | N |
| | 68547 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 13-Dec-2012 11:21 AM | 17-Dec-2012 12:51 PM | N |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Batch Report**

| Test Method: SW8330B; Leach Method: NONE | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 7620 | 7404 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 1/1 | 12-Dec-2012 1:00 PM | 14-Dec-2012 11:07 AM | 21-Dec-2012 3:22 PM | N |
| | 7404 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 1/1 | 12-Dec-2012 1:15 PM | 14-Dec-2012 11:07 AM | 21-Dec-2012 4:02 PM | N |
| 7855 | 7807 | NA | BLDG-1036 | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | | 2/1 | 12-Dec-2012 1:00 PM | 24-Dec-2012 12:40 PM | 27-Dec-2012 4:51 AM | N |
| | 7807 | NA | BLDG-1036 | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | | 2/1 | 12-Dec-2012 1:15 PM | 24-Dec-2012 12:40 PM | 27-Dec-2012 5:06 AM | N |

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

### Field Batch Report

**--No Records Found--**

### QC Outliers Report

**--No Records Found--**

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M8015V/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Petroleum Hydrocarbons C6-C12 | 100 | 39.0 | 39.0 J | | UG/L | TR |
| M8015V/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Petroleum Hydrocarbons C6-C12 | 100 | 36.0 | 36.0 J | | UG/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Aluminum | 30.0 | 13.0 | 13.0 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Arsenic | 1.0 | 0.49 | 0.49 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Cobalt | 0.50 | 0.11 | 0.11 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Copper | 2.0 | 0.83 | 0.83 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Barium | 10.0 | 0.13 | 0.13 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Calcium | 100 | 59.0 | 59.0 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Copper | 2.0 | 0.60 | 0.60 J | | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Magnesium | 100 | 29.0 | 29.0 J | | UG/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | 2-Butanone (MEK) | 10.0 | 1.2 | 1.2 J | | UG/L | TR |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Acetone | 10.0 | 2.1 | 2.1 J | | UG/L | TR |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Toluene | 1.0 | 0.15 | 0.15 J | | UG/L | TR |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

## AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Detected Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| M8015V/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Petroleum Hydrocarbons C6-C12 | 100 | 39.0 | 39.0 J | UG/L | TR |
| M8015V/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Petroleum Hydrocarbons C6-C12 | 100 | 36.0 | 36.0 J | UG/L | TR |

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Aluminum | 30.0 | 13.0 | 13.0 J | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Arsenic | 1.0 | 0.49 | 0.49 J | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Barium | 10.0 | 39.0 | 39.0 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Calcium | 100 | 66000 | 66000 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Cobalt | 0.50 | 0.11 | 0.11 J | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Copper | 2.0 | 0.83 | 0.83 J | UG/L | TR |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Iron | 50.0 | 440 | 440 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Potassium | 100 | 2500 | 2500 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Magnesium | 100 | 27000 | 27000 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Manganese | 5.0 | 77.0 | 77.0 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Sodium | 100 | 35000 | 35000 | UG/L | |
| SW6020/NONE | WG | 070-0056-0001-SOURCE WATER | 240-18735-3 | N | Zinc | 5.0 | 18.0 | 18.0 | UG/L | |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Barium | 10.0 | 0.13 | 0.13 J | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Calcium | 100 | 59.0 | 59.0 J | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Copper | 2.0 | 0.60 | 0.60 J | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Magnesium | 100 | 29.0 | 29.0 J | UG/L | TR |
| SW6020/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Sodium | 100 | 1600 | 1600 | UG/L | |

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Acetone | 10.0 | 2.1 | 2.1 J | UG/L | TR |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Bromodichloromethane | 1.0 | 3.6 | 3.6 | UG/L | |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Toluene | 1.0 | 0.15 | 0.15 J | UG/L | TR |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Dibromochloromethane | 1.0 | 1.3 | 1.3 | UG/L | |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | 2-Butanone (MEK) | 10.0 | 1.2 | 1.2 J | UG/L | TR |
| SW8260B/NONE | WG | 070-0057-0001-SOURCE WATER | 240-18735-4 | N | Chloroform | 1.0 | 5.3 | 5.3 | UG/L | |

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

## Rejected Results

**--No Records Found--**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Anomalies Count**

SDG Name: J18735_SourceWater

| Test/Extraction Method/Leach | # of Field Samples Outside of Compliance | # of Analytes Outside of Compliance |
|---|---|---|
| M8015D/SW3520C/NONE | 2 | 4 |
| SW6020/TOTAL/NONE | 2 | 2 |
| SW8081/SW3520C/NONE | 2 | 10 |
| SW8082/SW3520C/NONE | 2 | 14 |
| SW8151A/METHOD/NONE | 2 | 22 |
| SW8260B/SW5030B/NONE | 2 | 2 |
| SW8330B/METHOD/NONE | 2 | 6 |

**Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reporting Anomalies**

SDG Name: J18735_SourceWater

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| M8015D/NONE | 070-0056-0001-SOURCE WATER | N | 1 | C10-C20 Diesel Range Organics | 480 U | 230 | 480 | 0.5 | UG/L |
| M8015D/NONE | 070-0056-0001-SOURCE WATER | N | 1 | C20-C34 Motor Oil Range Organics | 480 U | 230 | 480 | 0.5 | UG/L |
| M8015D/NONE | 070-0057-0001-SOURCE WATER | N | 1 | C10-C20 Diesel Range Organics | 480 U | 230 | 480 | 0.5 | UG/L |
| M8015D/NONE | 070-0057-0001-SOURCE WATER | N | 1 | C20-C34 Motor Oil Range Organics | 480 U | 230 | 480 | 0.5 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW6020/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Cadmium | 1 U | 0.13 | 1 | 0.5 | UG/L |
| SW6020/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Cadmium | 1 U | 0.13 | 1 | 0.5 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8081/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Aldrin | 0.048 U | 0.0078 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0056-0001-SOURCE WATER | N | 1 | alpha-BHC (alpha-Hexachlorocyclohexane) | 0.048 U | 0.0067 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Dieldrin | 0.048 U | 0.0071 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Heptachlor | 0.048 U | 0.0076 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Heptachlor Epoxide | 0.048 U | 0.0068 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Aldrin | 0.048 U | 0.0078 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0057-0001-SOURCE WATER | N | 1 | alpha-BHC (alpha-Hexachlorocyclohexane) | 0.048 U | 0.0067 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Dieldrin | 0.048 U | 0.0071 | 0.048 | 0.03 | UG/L |
| SW8081/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Heptachlor | 0.048 U | 0.0076 | 0.048 | 0.03 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reporting Anomalies**

SDG Name: J18735_SourceWater

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8081/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Heptachlor Epoxide | 0.048 U | 0.0068 | 0.048 | 0.03 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1016 (Arochlor 1016) | 0.48 U | 0.16 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1221 (Arochlor 1221) | 0.48 U | 0.12 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1232 (Arochlor 1232) | 0.48 U | 0.15 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1242 (Arochlor 1242) | 0.48 U | 0.21 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1248 (Arochlor 1248) | 0.48 U | 0.095 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1254 (Arochlor 1254) | 0.48 U | 0.15 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0056-0001-SOURCE WATER | N | 1 | PCB-1260 (Arochlor 1260) | 0.48 U | 0.16 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1016 (Arochlor 1016) | 0.48 U | 0.16 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1221 (Arochlor 1221) | 0.48 U | 0.12 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1232 (Arochlor 1232) | 0.48 U | 0.15 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1242 (Arochlor 1242) | 0.48 U | 0.21 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1248 (Arochlor 1248) | 0.48 U | 0.095 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1254 (Arochlor 1254) | 0.48 U | 0.15 | 0.48 | 0.2 | UG/L |
| SW8082/NONE | 070-0057-0001-SOURCE WATER | N | 1 | PCB-1260 (Arochlor 1260) | 0.48 U | 0.16 | 0.48 | 0.2 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 2,4 DB | 4 U | 0.69 | 4 | 0 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reporting Anomalies**

SDG Name: J18735_SourceWater

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 2,4,5-T (Trichlorophenoxyacetic Acid) | 1 U | 0.3 | 1 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 2,4-D (Dichlorophenoxyacetic Acid) | 4 U | 0.41 | 4 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Dalapon | 2 U | 0.17 | 2 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Dicamba | 2 U | 0.52 | 2 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Dichloroprop | 4 U | 0.86 | 4 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Dinoseb | 0.6 U | 0.087 | 0.6 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | MCPA | 400 U | 390 | 400 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | MCPP | 400 U | 400 | 400 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Pentachlorophenol | 0.1 U | 0.024 | 0.1 | 0 | UG/L |
| SW8151A/NONE | 070-0056-0001-SOURCE WATER | N | 1 | Silvex (2,4,5-TP) | 1 U | 0.2 | 1 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 2,4 DB | 4 U | 0.69 | 4 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 2,4,5-T (Trichlorophenoxyacetic Acid) | 1 U | 0.3 | 1 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 2,4-D (Dichlorophenoxyacetic Acid) | 4 U | 0.41 | 4 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Dalapon | 2 U | 0.17 | 2 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Dicamba | 2 U | 0.52 | 2 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Dichloroprop | 4 U | 0.86 | 4 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Dinoseb | 0.6 U | 0.087 | 0.6 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | MCPA | 400 U | 390 | 400 | 0 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Reporting Anomalies**

SDG Name: J18735_SourceWater

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | MCPP | 400 U | 400 | 400 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Pentachlorophenol | 0.1 U | 0.024 | 0.1 | 0 | UG/L |
| SW8151A/NONE | 070-0057-0001-SOURCE WATER | N | 1 | Silvex (2,4,5-TP) | 1 U | 0.2 | 1 | 0 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8260B/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 1,2-Dichloroethene | 2 U | 0.34 | 2 | 1 | UG/L |
| SW8260B/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 1,2-Dichloroethene | 2 U | 0.34 | 2 | 1 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8330B/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 2-Nitrotoluene | 0.5 U | 0.088 | 0.5 | 0.2 | UG/L |
| SW8330B/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 3-Nitrotoluene | 0.5 U | 0.057 | 0.5 | 0.2 | UG/L |
| SW8330B/NONE | 070-0056-0001-SOURCE WATER | N | 1 | 4-Nitrotoluene | 0.5 U | 0.088 | 0.5 | 0.2 | UG/L |
| SW8330B/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 2-Nitrotoluene | 0.49 U | 0.087 | 0.49 | 0.2 | UG/L |
| SW8330B/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 3-Nitrotoluene | 0.49 U | 0.056 | 0.49 | 0.2 | UG/L |
| SW8330B/NONE | 070-0057-0001-SOURCE WATER | N | 1 | 4-Nitrotoluene | 0.49 U | 0.087 | 0.49 | 0.2 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for J18735_SourceWater

**Worksheet**

SDG Name: J18735_SourceWater

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**WORKSHEET 3**

**Automated Data Review Summary for 240-21987-1**
**Source Water**

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## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Facility:** Ravenna Army Ammunition Plant

**Event:** Spring 2013 RI/SI Sampling Event

**Guidance Document:** Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

**Contract Laboratory:** TestAmerica, Inc., North Canton, OH

**Field Contractor:** Environmental Chemical Corporation, Cincinnati, OH

**Data Review Contractor:** ECC

**SDG:** 240-21987-1_79_SourceWater_TB_1, Certified - 6/10/2013 by frederickroche

**QC Level:** ADR

**Project Manager:** Al Easterday

**Data Reviewer:** Samir A. Naguib

**Data Reviewer Title:** Sr. QA Chemist

**Date of Review Report:** June 11, 2013

### Samples Included in SDG 240-21987-1_79_SourceWater_TB_1

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| E353.2/NONE | 1 | 0 |
| M8015D/NONE | 1 | 0 |
| M8015V/NONE | 2 | 0 |
| SW6020/NONE | 1 | 0 |
| SW7196A/NONE | 1 | 0 |
| SW7470A/NONE | 1 | 0 |
| SW8081/NONE | 1 | 0 |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| SW8082/NONE | 1 | 0 |
| SW8151/NONE | 1 | 0 |
| SW8260B/NONE | 2 | 0 |
| SW8270C/NONE | 1 | 0 |
| SW8330B/NONE | 1 | 0 |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012 to the extent possible. Where definitive guidance is not provided, data has been evaluated in a conservative manner using professional judgment. In cases where two qualifiers are listed as an action, such as 'J/UJ', the first qualifier applies to positive results, and the second to non-detect results.

Samples were collected by Environmental Chemical Corporation, Cincinnati, OH; analyses were performed by TestAmerica, Inc., North Canton, OH and were reported under sample delivery group (SDG) 240-21987-1_79_SourceWater_TB_1. Results have been evaluated electronically using electronic data deliverables (EDDs) provided by the laboratory. The laboratory data summary forms (hard copy) have been reviewed during this effort and compared to the automated review output. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative.

The following quality control elements were supported by the electronic deliverable and were evaluated during this review effort:

- Blank
- Blank - Negative
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

The following quality control elements were either not applicable to the deliverable, or were not supported by the electronic deliverable, and were therefore not included in the automated data review. Those elements required for the project were reviewed manually, as narrated in the Comment section below.

- Ambient Blank
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Equipment Blank

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

Field Blank

Field Duplicate RPD

Initial Calibration Verification

Lab Replicate RPD

Material Blank

Trip Blank

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

A representative sampling or ten percent of sample and QC results were manually evaluated for compliance with project specific requirements and consistency with hard copy results. The following summaries were generated during the evaluation of this data set and are included in this report as applicable.

Batch – The analytical batch report is reviewed for completeness and compliance with project specific requirements. Incomplete or non-compliant run sequences are identified and their impact on data quality are discussed in the narrative.

QC Outlier – Results exceeding the evaluation criteria are reviewed for compliance with project requirements and a minimum of ten percent of the non-compliant QC values reported electronically are verified for consistency with hard-copy values.

Qualified Results – Qualified results are evaluated for compliance with project requirements and ten percent of qualified results are verified for consistency with the QC Outliers.

Rejected Results – All rejected results are evaluated for compliance with project requirements. The reason for rejection of the data is verified against hard copy data.

Field Duplicates – Field duplicate comparison results are evaluated for compliance with project requirements and ten percent of values reported are verified for consistency with the hard-copy data.

Data Submission Warnings – Warnings encountered during the data submission process are evaluated and their affect on data quality is discussed in the narrative below.

Analytical deficiencies, project non-compliance issues and inconsistencies with hard copy results observed during ADR evaluation process and their impact on data quality are summarized in the narrative below.

A total of 23 results (10.31%) out of the 223 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected. Trace values are not counted as qualified results in the above count. The qualified results are detailed in the following tables and discussed in the narrative below, where appropriate.

### Narrative Comments

| Analytical Method | Comment |
|---|---|
| E353.2 | |
| M8015D | |

| | |
|---|---|
| M8015V | |
| SW6020 | |
| SW7470A | |
| SW8081 | |
| SW8260B | |
| SW8270C | |
| SW8330B | |
| SW7196A | |
| SW8082 | |
| SW8151 | |

11-Jun-2013

Reviewed by Samir A. Naguib, Sr. QA Chemist

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Reason and Comment Code Definitions**

| Reasons | |
|---|---|
| **Code** | **Definition** |
| A | Serial dilution |
| A1 | Ambient Blank |
| B | The analyte was found in an associated blank as well as in the sample. |
| B2 | CCB |
| B3 | CCB - Neg |
| c | LCS - low |
| C | LCS Recovery |
| d | Field Duplicate RPD |
| D | MS RPD |
| D1 | Lab Replicate RPD |
| D2 | No precision available |
| F | Field Blank |
| F1 | Hydrocarbon pattern does not match standard |
| G1 | Initial Calibration RRF |
| G2 | Initial Calibration RSD |
| h | Holding time exceeded by less than 2X. |
| H | Holding time exceeded by more than 2X. |
| H1 | Test Hold Time |
| H2 | Prep Hold Time |
| I | Surrogate recovery outside project limits. |
| J | CRA/CRI Recovery |
| K | An analyte (non-common laboratory artifact) was detected in the sample at a concentration less than 5X the concentration detected in the associated method blank. |
| L | Lab Blank |
| L1 | Lab Blank - Neg |
| m | MS - low |
| M | MS Recovery |
| N | Blank - No Action |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Reason and Comment Code Definitions**

| | |
|---|---|
| O | ICS |
| P | Sample preservation/collection requirement not met. |
| P1 | Column RPD |
| P2 | Improper preparation/extraction |
| q | Encore sample holding time exceeded by less than 2X. |
| Q | Encore sample holding time exceeded by more than 2X. |
| Q1 | Material Blank |
| R | Exceeds LinearCalibration Range |
| S | Internal standard |
| T | Trip Blank |
| TI | Tentatively Identified Compound |
| TR | Trace Level Detect |
| U | Receipt Temperature |
| V | Equipment Blank |
| V1 | ICV |
| V2 | CCV |
| V3 | CCV RRF |
| V4 | Sample Receipt Condition |
| W | Column breakdown (pesticides) |
| X | Raised reporting limit |
| Y | Cooler temperature greater than 10 degreec C. |
| y | Cooler temperature greater than 4 degrees C, but less than 10 degreec C. |
| Y1 | False Positive |
| Y2 | Data rejected due to radiological anomolies |
| Z | LCS RPD |
| Z2 | Analyte not confirmed on second column |
| Z3 | High percent moisture in sample. |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

| Flag Code and Definitions | |
|---|---|
| Flag | Definition |
| U | Undetected: The analyte was analyzed for, but not detected. |
| UJ | The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria. |
| J | Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| R | The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making. |
| N | The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification". |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration. |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Batch Report**

| Test Method: E353.2; Leach Method: NONE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 13190 | 12938 | NA | LABQC | WQ | LABQC | MB 320-12877/1-B | | 1/1 | 25-Mar-2013 8:23 AM | 25-Mar-2013 8:23 AM | 25-Mar-2013 12:47 PM | LB |
| | 12938 | NA | LABQC | WQ | LABQC | LCS 320-12877/2-B | | 1/1 | 25-Mar-2013 8:23 AM | 25-Mar-2013 8:23 AM | 25-Mar-2013 12:49 PM | BS |
| | 12938 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 25-Mar-2013 8:23 AM | 25-Mar-2013 12:51 PM | N |
| | 12938 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 25-Mar-2013 8:23 AM | 25-Mar-2013 12:53 PM | MS |
| | 12938 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 25-Mar-2013 8:23 AM | 25-Mar-2013 12:55 PM | SD |
| **Test Method: M8015D; Leach Method: NONE** | | | | | | | | | | | | |
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 78992 | 78624 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 18-Mar-2013 10:31 AM | 21-Mar-2013 5:45 PM | N |
| **Test Method: M8015V; Leach Method: NONE** | | | | | | | | | | | | |
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 79100 | 79100 | NA | LABQC | WQ | LABQC | MB 240-79100/38 | | 1/1 | 23-Mar-2013 8:14 AM | 23-Mar-2013 8:14 AM | 23-Mar-2013 8:14 AM | LB |
| | 79100 | NA | LABQC | WQ | LABQC | LCS 240-79100/39 | | 1/1 | 23-Mar-2013 8:51 AM | 23-Mar-2013 8:51 AM | 23-Mar-2013 8:51 AM | BS |
| | 79100 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 23-Mar-2013 9:27 AM | 23-Mar-2013 9:27 AM | N |
| | 79100 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 23-Mar-2013 10:03 AM | 23-Mar-2013 10:03 AM | MS |
| | 79100 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 23-Mar-2013 10:40 AM | 23-Mar-2013 10:40 AM | SD |
| | 79100 | NA | 79-LL3-DU1-SB3 | WG | 079-0009-0001-TB TRIP BLANK | 240-21987-3 | | 1/1 | 14-Mar-2013 8:00 AM | 23-Mar-2013 11:16 AM | 23-Mar-2013 11:16 AM | N |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Batch Report**

**Test Method: SW6020; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68058 | 66565 | NA | LABQC | WQ | LABQC | MB 180-66565/1-A | | 1/1 | 18-Mar-2013 1:02 PM | 18-Mar-2013 1:02 PM | 01-Apr-2013 3:24 PM | LB |
| | 66565 | NA | LABQC | WQ | LABQC | LCS 180-66565/2-A | | 1/1 | 18-Mar-2013 1:02 PM | 18-Mar-2013 1:02 PM | 01-Apr-2013 3:29 PM | BS |
| | 66565 | NA | LABQC | WQ | LABQC | LCSD 180-66565/3-A | | 1/1 | 18-Mar-2013 1:02 PM | 18-Mar-2013 1:02 PM | 01-Apr-2013 3:34 PM | BD |
| | 66565 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 18-Mar-2013 1:02 PM | 01-Apr-2013 3:42 PM | N |

**Test Method: SW7196A; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 78405 | 78405 | NA | LABQC | WQ | LABQC | MB 240-78405/8 | | 1/1 | 14-Mar-2013 5:42 PM | 14-Mar-2013 5:42 PM | 14-Mar-2013 5:42 PM | LB |
| | 78405 | NA | LABQC | WQ | LABQC | LCS 240-78405/9 | | 1/1 | 14-Mar-2013 5:43 PM | 14-Mar-2013 5:43 PM | 14-Mar-2013 5:43 PM | BS |
| | 78405 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 14-Mar-2013 5:44 PM | 14-Mar-2013 5:44 PM | N |
| | 78405 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 14-Mar-2013 5:46 PM | 14-Mar-2013 5:46 PM | MS |
| | 78405 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 14-Mar-2013 5:47 PM | 14-Mar-2013 5:47 PM | SD |

**Test Method: SW7470A; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 78674 | 78432 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 15-Mar-2013 12:45 PM | 18-Mar-2013 5:49 PM | N |

**Test Method: SW8081; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79056 | 78726 | NA | LABQC | WQ | LABQC | LCS 240-78726/3-A | | 1/1 | 19-Mar-2013 9:10 AM | 19-Mar-2013 9:10 AM | 21-Mar-2013 5:16 PM | BS |
| | 78726 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 19-Mar-2013 9:10 AM | 21-Mar-2013 5:36 PM | N |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Batch Report**

**Test Method: SW8081; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79056 | 78726 | NA | LABQC | WQ | LABQC | MB 240-78726/2-A | | 1/1 | 19-Mar-2013 9:10 AM | 19-Mar-2013 9:10 AM | 21-Mar-2013 5:56 PM | LB |

**Test Method: SW8082; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79577 | 78721 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 19-Mar-2013 8:52 AM | 27-Mar-2013 10:07 AM | N |
| | 78721 | NA | LABQC | WQ | LABQC | MB 240-78721/17-A | | 1/1 | 19-Mar-2013 8:52 AM | 19-Mar-2013 8:52 AM | 27-Mar-2013 12:28 PM | LB |
| | 78721 | NA | LABQC | WQ | LABQC | LCS 240-78721/18-A | | 1/1 | 19-Mar-2013 8:52 AM | 19-Mar-2013 8:52 AM | 27-Mar-2013 2:59 PM | BS |

**Test Method: SW8151; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79197 | 78626 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 18-Mar-2013 10:35 AM | 22-Mar-2013 8:57 PM | N |
| | 78626 | NA | LABQC | WQ | LABQC | MB 240-78626/3-A | | 1/1 | 18-Mar-2013 10:35 AM | 18-Mar-2013 10:35 AM | 22-Mar-2013 9:21 PM | LB |
| | 78626 | NA | LABQC | WQ | LABQC | LCS 240-78626/4-A | | 1/1 | 18-Mar-2013 10:35 AM | 18-Mar-2013 10:35 AM | 22-Mar-2013 9:44 PM | BS |

**Test Method: SW8260B; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79725 | 79725 | NA | LABQC | WQ | LABQC | LCS 240-79725/4 | | 1/1 | 28-Mar-2013 10:02 AM | 28-Mar-2013 10:02 AM | 28-Mar-2013 10:02 AM | BS |
| | 79725 | NA | LABQC | WQ | LABQC | MB 240-79725/6 | | 1/1 | 28-Mar-2013 10:55 AM | 28-Mar-2013 10:55 AM | 28-Mar-2013 10:55 AM | LB |
| | 79725 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 28-Mar-2013 11:21 AM | 28-Mar-2013 11:21 AM | N |
| | 79725 | NA | 79-LL3-DU1-SB2 | WG | 079-0008-0001-TB TRIP BLANK | 240-21987-2 | | 1/1 | 14-Mar-2013 8:00 AM | 28-Mar-2013 11:47 AM | 28-Mar-2013 11:47 AM | N |
| | 79725 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 28-Mar-2013 1:33 PM | 28-Mar-2013 1:33 PM | MS |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Batch Report**

| Test Method: SW8260B; Leach Method: NONE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 79725 | 79725 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 28-Mar-2013 1:59 PM | 28-Mar-2013 1:59 PM | SD |

| Test Method: SW8270C; Leach Method: NONE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 79745 | 78456 | NA | LABQC | WQ | LABQC | MB 240-78456/17-A | | 1/1 | 15-Mar-2013 8:45 AM | 15-Mar-2013 8:45 AM | 28-Mar-2013 12:06 PM | LB |
| | 78456 | NA | LABQC | WQ | LABQC | LCS 240-78456/18-A | | 1/1 | 15-Mar-2013 8:45 AM | 15-Mar-2013 8:45 AM | 28-Mar-2013 12:29 PM | BS |
| | 78456 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 AM | 15-Mar-2013 8:45 AM | 28-Mar-2013 12:53 PM | N |

| Test Method: SW8330B; Leach Method: NONE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 12703 | 12565 | NA | LABQC | WQ | LABQC | MB 320-12565/1-A | | 1/1 | 19-Mar-2013 1:52 PM | 19-Mar-2013 1:52 PM | 21-Mar-2013 12:51 PM | LB |
| | 12565 | NA | LABQC | WQ | LABQC | LCS 320-12565/2-A | | 1/1 | 19-Mar-2013 1:52 PM | 19-Mar-2013 1:52 PM | 21-Mar-2013 1:31 PM | BS |
| | 12565 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 2/1 | 14-Mar-2013 12:00 AM | 19-Mar-2013 1:52 PM | 21-Mar-2013 2:11 PM | N |
| 12714 | 12568 | NA | LABQC | WQ | LABQC | MB 320-12568/1-A | | 1/1 | 19-Mar-2013 2:18 PM | 19-Mar-2013 2:18 PM | 21-Mar-2013 1:01 PM | LB |
| | 12568 | NA | LABQC | WQ | LABQC | LCS 320-12568/2-A | | 1/1 | 19-Mar-2013 2:18 PM | 19-Mar-2013 2:18 PM | 21-Mar-2013 1:16 PM | BS |
| | 12568 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 19-Mar-2013 2:18 PM | 21-Mar-2013 1:45 PM | MS |
| | 12568 | NA | 79-LL3-DU1-SB1 | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 1/1 | 14-Mar-2013 12:00 PM | 19-Mar-2013 2:18 PM | 21-Mar-2013 2:00 PM | SD |
| 12878 | 12568 | NA | LABQC | WQ | LABQC | MB 320-12568/1-A | | 2/1 | 19-Mar-2013 2:18 PM | 19-Mar-2013 2:18 PM | 22-Mar-2013 3:32 PM | LB |
| | 12568 | NA | 79-841-DU1-SB | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | | 3/1 | 14-Mar-2013 12:00 AM | 19-Mar-2013 2:18 PM | 22-Mar-2013 3:53 PM | N |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

## Field Batch Report

**--No Records Found--**

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**QC Outlier Report**

| Test/Prep/Leach | QC Element | Sample ID/ Lab Sample ID | Run# / Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M8015V / SW5030B/NONE | Blank | MB 240-79100/38 (LB) / MB 240-79100/38 | 1 / 1.00 | Petroleum Hydrocarbons C6-C12 | 57.2 (UG/L) | U/None | < 25 | < 100 | L | | 1 | 57.2 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Aluminum | 4.6 (UG/L) | U/None | < 2.6 | < 30 | L | | 1 | 4.59 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Barium | 0.18 (UG/L) | U/None | < 0.098 | < 10 | L | | 1 | 0.181 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Copper | 0.32 (UG/L) | U/None | < 0.24 | < 2 | L | | 1 | 0.315 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Lead | 0.24 (UG/L) | U/None | < 0.15 | < 1 | L | | 1 | 0.236 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Manganese | 0.31 (UG/L) | U/None | < 0.16 | < 5 | L | | 1 | 0.314 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Potassium | 40.6 (UG/L) | U/None | < 32 | < 100 | L | | 1 | 40.6 |
| SW6020 / TOTAL/NONE | Blank | MB 180-66565/1-A (LB) / MB 180-66565/1-A | 1 / 1.00 | Sodium | 67.4 (UG/L) | U/None | < 27 | < 100 | L | | 1 | 67.4 |
| SW8151 / METHOD/NONE | LCS Recovery | LCS 240-78626/4-A (BS) / LCS 240-78626/4-A | 1 / 1.00 | 2,4,5-T (Trichlorophenoxyacetic Acid) | 111 (PERCENT) | J/U | 35 - 110 | 35 - 110 | C | | | |
| SW8151 / METHOD/NONE | LCS Recovery | LCS 240-78626/4-A (BS) / LCS 240-78626/4-A | 1 / 1.00 | Dichloroprop | 126 (PERCENT) | J/U | 70 - 120 | 70 - 120 | C | | | |
| SW8260B / SW5030B/NONE | Blank | MB 240-79725/6 (LB) / MB 240-79725/6 | 1 / 1.00 | Methylene Chloride | 0.34 (UG/L) | U/None | < 0.33 | < 1 | L | | 2 | 0.688 |
| SW8260B / SW5030B | Test Hold Time | 079-0008-0001-TB TRI (N) / 240-21987-2 | 1 / 1.00 | All in Run | 14.2 (Days) | J/UJ | < 14 | < 28 | H1 | Test Exceeds UWL | | |
| SW8270C / SW3510/NONE | Blank | MB 240-78456/17-A (LB) / MB 240-78456/17-A | 1 / 1.00 | bis(2-Ethylhexyl) Phthalate | 0.86 (UG/L) | U/None | < 0.8 | < 2 | L | | 5 | 4.28 |
| SW8270C / SW3510/NONE | LCS Recovery | LCS 240-78456/18-A (BS) / LCS 240-78456/18-A | 1 / 1.00 | Cresols, m & p | 67.0 (PERCENT) | J/UJ | 70 - 130 | 70 - 130 | C | | | |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M8015V/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Petroleum Hydrocarbons C6-C12 | 100 | 74.0 | 100 U | + | UG/L | L |
| M8015V/NONE | WG | 079-0009-0001-TB TRIP BLANK | 240-21987-3 | N | Petroleum Hydrocarbons C6-C12 | 100 | 81.0 | 100 U | + | UG/L | L |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Arsenic | 1.0 | 0.48 | 0.48 J | | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Chromium | 2.0 | 1.3 | 1.3 J | | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Cobalt | 0.50 | 0.054 | 0.054 J | | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Copper | 2.0 | 1.4 | 2.0 U | + | UG/L | L/B2 |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Thallium | 1.0 | 0.11 | 0.11 J | | UG/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8081/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Methoxychlor | 0.10 | 0.10 | 0.10 UJ | | UG/L | V2 |
| SW8081/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Toxaphene | 2.0 | 2.0 | 2.0 UJ | | UG/L | V1 |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8151/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Dalapon | 2.0 | 0.55 | 2.0 U | | UG/L | P1/Y1 |
| SW8151/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | MCPA | 400 | 400 | 400 UJ | | UG/L | J |
| SW8151/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | MCPP | 400 | 400 | 400 UJ | | UG/L | J |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8260B/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Carbon Tetrachloride | 1.0 | 1.0 | 1.0 UJ | | UG/L | V2 |
| SW8260B/NONE | WG | 079-0008-0001-TB TRIP BLANK | 240-21987-2 | N | Carbon Tetrachloride | 1.0 | 1.0 | 1.0 UJ | | UG/L | V2 |
| SW8260B/NONE | WG | 079-0008-0001-TB TRIP BLANK | 240-21987-2 | N | Chloroform | 1.0 | 0.31 | 0.31 J | | UG/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 2,4-Dimethylphenol | 2.0 | 2.0 | 2.0 UJ | | UG/L | V1 |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 2,4-Dinitrophenol | 5.1 | 5.1 | 5.1 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 2-Chlorophenol | 1.0 | 1.0 | 1.0 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 2-Methylphenol (o-Cresol) | 1.0 | 1.0 | 1.0 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 2-Nitrophenol | 2.0 | 2.0 | 2.0 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 3,3'-Dichlorobenzidine | 5.1 | 5.1 | 5.1 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 4,6-Dinitro-2-Methylphenol | 5.1 | 5.1 | 5.1 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 4-Nitroaniline | 2.0 | 2.0 | 2.0 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | 4-Nitrophenol | 5.1 | 5.1 | 5.1 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | bis(2-Ethylhexyl) Phthalate | 2.0 | 0.91 | 2.0 U | + | UG/L | L |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | n-Nitrosodiphenylamine | 1.0 | 1.0 | 1.0 UJ | | UG/L | J |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Pentachlorophenol | 5.1 | 5.1 | 5.1 UJ | | UG/L | V1 |
| SW8270C/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Phenol | 1.0 | 1.0 | 1.0 UJ | | UG/L | V1 |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Detected Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Arsenic | 1.0 | 0.48 | 0.48 J | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Barium | 10.0 | 41.0 | 41.0 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Calcium | 100 | 65000 | 65000 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Cobalt | 0.50 | 0.054 | 0.054 J | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Chromium | 2.0 | 1.3 | 1.3 J | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Iron | 50.0 | 590 | 590 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Potassium | 100 | 2500 | 2500 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Magnesium | 100 | 27000 | 27000 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Manganese | 5.0 | 94.0 | 94.0 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Sodium | 100 | 37000 | 37000 | UG/L | |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Thallium | 1.0 | 0.11 | 0.11 J | UG/L | TR |
| SW6020/NONE | WG | 079-0007-0001-SOURCEWATER | 240-21987-1 | N | Zinc | 5.0 | 5.1 | 5.1 | UG/L | |

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW8260B/NONE | WG | 079-0008-0001-TB TRIP BLANK | 240-21987-2 | N | Chloroform | 1.0 | 0.31 | 0.31 J | UG/L | TR |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

### Rejected Results

**--No Records Found--**

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Anomalies Count**

SDG Name: 240-21987-1_79_SourceWater_TB_1

| Test/Extraction Method/Leach | # of Field Samples Outside of Compliance | # of Analytes Outside of Compliance |
|---|---|---|
| M8015D/SW3520C/NONE | 1 | 2 |
| SW6020/TOTAL/NONE | 1 | 1 |
| SW8081/SW3520C/NONE | 1 | 5 |
| SW8082/SW3520C/NONE | 1 | 7 |
| SW8260B/SW5030B/NONE | 2 | 2 |
| SW8270C/SW3510/NONE | 1 | 4 |
| SW8330B/METHOD/NONE | 1 | 3 |

**Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Reporting Anomalies**

SDG Name: 240-21987-1_79_SourceWater_TB_1

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| M8015D/NONE | 079-0007-0001-SOURCEWATER | N | 1 | C10-C20 Diesel Range Organics | 490 U | 230 | 490 | 0.5 | UG/L |
| M8015D/NONE | 079-0007-0001-SOURCEWATER | N | 1 | C20-C34 Motor Oil Range Organics | 490 U | 230 | 490 | 0.5 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW6020/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Cadmium | 1 U | 0.13 | 1 | 0.5 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8081/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Aldrin | 0.05 U | 0.0082 | 0.05 | 0.03 | UG/L |
| SW8081/NONE | 079-0007-0001-SOURCEWATER | N | 1 | alpha-BHC (alpha-Hexachlorocyclohexane) | 0.05 U | 0.007 | 0.05 | 0.03 | UG/L |
| SW8081/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Dieldrin | 0.05 U | 0.0075 | 0.05 | 0.03 | UG/L |
| SW8081/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Heptachlor | 0.05 U | 0.008 | 0.05 | 0.03 | UG/L |
| SW8081/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Heptachlor Epoxide | 0.05 U | 0.0071 | 0.05 | 0.03 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1016 (Arochlor 1016) | 0.5 U | 0.17 | 0.5 | 0.2 | UG/L |
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1221 (Arochlor 1221) | 0.5 U | 0.13 | 0.5 | 0.2 | UG/L |
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1232 (Arochlor 1232) | 0.5 U | 0.16 | 0.5 | 0.2 | UG/L |
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1242 (Arochlor 1242) | 0.5 U | 0.22 | 0.5 | 0.2 | UG/L |
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1248 (Arochlor 1248) | 0.5 U | 0.1 | 0.5 | 0.2 | UG/L |
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1254 (Arochlor 1254) | 0.5 U | 0.16 | 0.5 | 0.2 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Reporting Anomalies**

SDG Name: 240-21987-1_79_SourceWater_TB_1

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8082/NONE | 079-0007-0001-SOURCEWATER | N | 1 | PCB-1260 (Arochlor 1260) | 0.5 U | 0.17 | 0.5 | 0.2 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8260B/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 1,2-Dichloroethene | 2 U | 0.34 | 2 | 1 | UG/L |
| SW8260B/NONE | 079-0008-0001-TB TRIP BLANK | N | 1 | 1,2-Dichloroethene | 2 U | 0.34 | 2 | 1 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8270C/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 2,4,5-Trichlorophenol | 5.1 U | 0.3 | 5.1 | 5 | UG/L |
| SW8270C/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 2,4,6-Trichlorophenol | 5.1 U | 0.81 | 5.1 | 5 | UG/L |
| SW8270C/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 3,3'-Dichlorobenzidine | 5.1 UJ | 0.37 | 5.1 | 5 | UG/L |
| SW8270C/NONE | 079-0007-0001-SOURCEWATER | N | 1 | Pentachlorophenol | 5.1 UJ | 2.4 | 5.1 | 5 | UG/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8330B/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 2-Nitrotoluene | 0.51 U | 0.09 | 0.51 | 0.2 | UG/L |
| SW8330B/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 3-Nitrotoluene | 0.51 U | 0.058 | 0.51 | 0.2 | UG/L |
| SW8330B/NONE | 079-0007-0001-SOURCEWATER | N | 1 | 4-Nitrotoluene | 0.51 U | 0.09 | 0.51 | 0.2 | UG/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Worksheet**

SDG Name: 240-21987-1_79_SourceWater_TB_1

**Method:** E353.2

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures  met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | | • | | |
| Was a field blank collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | | | • | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Was a duplicate sample prepared and analyzed with each batch? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | | | • | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were the MS/MSD recoveries and RPDs within QAPP acceptance limits? | • | | | |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

**Method:** M8015D

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | | • | | LCS was extracted with preparation batch. |
| Were the LCS recoveries within QAPP acceptance limits? | | • | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | | • | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

**Method:** M8015V

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | • | | | MB 240-79100/38: C6-C12 was detected above the MDL but below RL. |
| Was a field blank (equipment or trip) collected and analyzed? | • | | | |
| Were target analytes reported in the field blank analyses above the MDL? | | • | | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | LCS was analyzed with each analytical batch. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW6020

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures  met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | • | | | CCB1: Cu, K, and Na were detected above MDL but below RL. 2. MB 180-66565/1-A: Al, Ba, Cu, Mn, Na, Pb, and K were detected above MDL but below RL. |
| Was a field blank collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Was an Interference Check Standard (ICS) run at the beginning and end of every run? | • | | | |
| Was the ICS recovery within QAPP acceptance limits? | • | | | |
| If a field duplicate was analyzed, were the RPDs within criteria? | • | | | |
| Was a LCS prepared and analyzed with each batch? | • | | | LCS and LCSD were digested in the preparation batch : 66565. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Was a MS/MSD pair prepared with each batch? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were the MS/MSD within QAPP acceptance limits? | | | • | |
| Was a serial dilution prepared and analyzed with each batch? | • | | | |
| Was the serial dilution within QAPP acceptance limits? | • | | | |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

| **Method:** SW7196A | | | | |
|---|---|---|---|---|
| **Review Questions** | **Yes** | **No** | **NA** | **Comment** |
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures  met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the ICB/CCB/method blank? | | • | | |
| Was a field blank collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Was the ICS recovery within QAPP acceptance limits? | | | • | |
| If a field duplicate was analyzed, were the RPDs within criteria? | | | • | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were the MS/MSD within QAPP acceptance limits? | • | | | |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

| **Method:** SW7470A | | | | |
|---|---|---|---|---|
| **Review Questions** | **Yes** | **No** | **NA** | **Comment** |
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |

**Method:** SW7470A

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures  met? | • | | | |
| Were QAPP specified RLs achieved? | • | | | |
| Were all QAPP specified target analytes reported? | • | | | |
| Was the initial calibration curve within QAPP acceptance limits? | • | | | |
| Were the ICV/CCVs analyzed (frequency) as required in the QAPP? | • | | | |
| Were ICV/CCV results within QAPP acceptance limits? | • | | | |
| Were the ICB/CCBs analyzed (frequency) as required in the QAPP? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | • | | |
| Were target analytes detected in the ICB/CCB/method blank? | | • | | |
| Was a field blank collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Was the ICS recovery within QAPP acceptance limits? | | | • | |
| If a field duplicate was analyzed, were the RPDs within criteria? | | | • | |
| Was a LCS prepared and analyzed with each batch? | • | | | |
| Were the LCS recoveries within QAPP acceptance limits? | | | • | |
| Was a MS/MSD pair prepared with each batch? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were the MS/MSD within QAPP acceptance limits? | | | • | |
| Were sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |

**Method:** SW8081

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |

**Method:** SW8081

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | | • | | Toxaphene %D=38.9%. |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | CCV 240-7956/14: Methoxychlor %D=20.2% |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | LCS was extracted with each preparation batch. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Were the Breakdown products within QAPP acceptance limits? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | | • | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | | | • | All Pesticides compounds in the samples were reported as non-detects. |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW8082

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | 15% |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | 15% |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | LCS was extracted with each preparation batch. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Were the Breakdown products within QAPP acceptance limits? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | | • | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | | | • | All PCBs were reported as non-detect. |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW8082

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

**Method:** SW8151

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | LCS was extracted with each preparation batch. |
| Were the LCS recoveries within QAPP acceptance limits? | | • | | LCS 240-78626/4-A: Dichlorprop and 2,4,5-T were recovered above the QC limits. No qualifications were required due to these compounds were not detected in the native sample. |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Were the Breakdown products within QAPP acceptance limits? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | | • | |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW8151

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | | • | | 240-21987-1: Dalapon RPD was 56%. False Positive. |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

**Method:** SW8260B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures  met? | • | | | |
| Were QAPP specified PQLs achieved? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Was the GC/MS system properly tuned based on method criteria? | • | | | |
| Was the criteria met during each 12 hour shift (prior to ICAL and Cal Ver.)? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Did the Calibration Check Compounds (CCCs) have a relative standard deviation within QAPP acceptance limits? | • | | | |
| Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) within QAPP acceptance limits? | • | | | |
| Were all other target analytes within criteria?  OR Was the average across all target analytes within criteria? Was a different calibration option used? | • | | | |
| If a linear regression curve was used, was the correlation coefficient  within criteria? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |

# AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW8260B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did the CCCs have a %Difference within QAPP acceptance limits? | • | | | |
| Were the average RFs for the SPCCs within QAPP acceptance limits? | | | | |
| Was the average %D (difference or drift) for all target analytes within QAPP acceptance limits? | | • | | CCV 240-79725/2: Carbon tetrachloride: %D= 24.4. |
| Were the internal standards added to every standard, blank, matrix spike, matrix spike duplicate, and sample? | • | | | |
| Were the retention times for all IS compounds within QAPP acceptance limits? | • | | | |
| Are the area counts of all IS compounds within QAPP acceptance limits? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | • | | | MB 240-79725/6: Methylene chloride was detected above the MDL but below the RL. |
| Was a field blank (equipment or trip) collected and analyzed at the required frequency? | • | | | |
| Were target analytes reported in the field blank analyses above the MDL? | • | | | 079-0008-0001-TB (Trip Blank): Chloroform was detected above the MDL but below the RL. |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | | | • | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? | • | | | LCS was analyzed with each analytical batch. |
| Were the LCS/LCSD recoveries within QAPP acceptance limits? | | | • | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | | | • | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Was a MS/MSD pair prepared with each batch? | • | | | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |

**Method:** SW8270C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were holding times met? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were QAPP specified PQLs achieved? | • | | | |
| Were all QAPP-specified target analytes reported? | • | | | |
| Was the GC/MS system properly tuned based on method criteria? | • | | | |
| Was the criteria met during each 12 hour shift (prior to ICAL and Cal Ver.)? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Did the Calibration Check Compounds (CCCs) have a relative standard deviation within QAPP acceptance limits? | • | | | |
| Were the average response factors (RFs) for the System Performance Check Compounds (SPCCs) within QAPP acceptance limits? | • | | | |
| Were all other target analytes within criteria? OR Was the average across all target analytes within criteria? Was a different calibration option used? | • | | | |
| If a linear regression curve was used, was the correlation coefficient within criteria? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria? | | • | | ICV 240-79445/12: %Ds for several compounds were >20%. All non-detects compounds were qualified (UJ). |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Did the CCCs have a %Difference within QAPP acceptance limits? | • | | | |
| Were the average RFs for the SPCCs within QAPP acceptance limits? | • | | | |
| Was the average %D (difference or drift) for all target analytes within QAPP acceptance limits? | • | | | |
| Were the internal standards added to every standard, blank, matrix spike, matrix spike duplicate, and sample? | • | | | |
| Were the retention times for all IS compounds within QAPP acceptance limits? | • | | | |
| Are the area counts of all IS compounds within QAPP acceptance limits? | • | | | |
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | • | | | MB 240-78456/17-A: Bis (2-ethylhexyl) phthalate was detected above the MDL but below the RL. |
| Was a field blank (equipment or trip) collected and analyzed at the required frequency? | | | • | |

**Method:** SW8270C

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits? | | | • | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? | • | | | LCS was extracted with each preparation batch. |
| Were the LCS/LCSD recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? | | | • | |
| Was the duplicate RPD within QAPP acceptance limits? | | | • | |
| Are all samples associated with QC non-compliances flagged appropriately? | | | • | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | | | | |
| Was a MS/MSD pair prepared with each batch? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |

**Method:** SW8330B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Did Chain-of-Custody information agree with laboratory report? | • | | | |
| Were samples preserved properly and received in good condition? | • | | | |
| Were sample reciept temperatures met? | • | | | |
| Were holding times for prep and analysis met? | • | | | |
| Does the initial calibration curve consist of 5 concentration levels, with the low standard near but > MDL? | • | | | |
| Is the ICAL %RSD within acceptance limits (%D =20%) on both columns? | • | | | |
| Was a second source verification analyzed after the ICAL and all analytes within criteria (%D =20%)? | • | | | |
| Was a CCV run at the beginning of the analytical sequence and every 12 hours? | • | | | |
| Was the CCV a mid-level standard from the initial calibration curve? | • | | | |
| Was the CCV %D within criteria (%D =20%)? | • | | | |

## AUTOMATED DATA REVIEW SUMMARY for 240-21987-1_79_SourceWater_TB_1

**Method:** SW8330B

| Review Questions | Yes | No | NA | Comment |
|---|---|---|---|---|
| Was a method blank prepared and analyzed with each batch? | • | | | |
| Were target analytes detected in the method blank above the MDL? | | • | | |
| Was a field blank (equipment or trip) collected and analyzed? | | | • | |
| Were target analytes reported in the field blank analyses above the MDL? | | | • | |
| Were surrogate recoveries within QAPP acceptance limits? | • | | | |
| Was an LCS/LCSD pair prepared and analyzed with each batch? (if applicable) | • | | | LCS was extracted with each preparation batch. |
| Were the LCS recoveries within QAPP acceptance limits? | • | | | |
| Were the LCS/LCSD RPDs within QAPP acceptance limits? (if applicable) | | | • | |
| If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits (RPD = 30%) ? | | | • | |
| Is the MS/MSD parent sample the one designated by the sampling team? | | | • | |
| Were MS/MSD recoveries and RPD within QAPP acceptance limits? | • | | | MS and MSD were performed on Nitroguanidine only. |
| Were all QAPP-specified target analytes reported? | • | | | |
| Were reported sample concentrations within calibration range? | • | | | |
| Were RPDs between primary and confirmation columns < 40%? | | • | | 240-21987-1: Nitroguanidine was not confirmed on the column Hyrdo RP80A. |
| Did PDA spectra for reported compounds match associated standard spectra? | | | • | |
| Are all samples associated with QC non-compliances flagged appropriately? | • | | | |
| Are the Qualified, Detected, and Rejected tables of the ADR report in agreement? | • | | | |
| Have all Laboratory Case Narrative comments/findings been addressed in the data review process? | • | | | |
| Were sample prepration sheets present and filled out appropriately? | • | | | |
| Were instrument run logs present and filled out appropriately? | • | | | |

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**WORKSHEET 4**

**Automated Data Review Summary for 99335**
**Rinsate Blank**

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## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Facility:** Ravenna Army Ammunition Plant

**Event:** Summer 2013 RI/SI Sampling Event

**Guidance Document:** Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

**Contract Laboratory:** CT LABS., BARABOO, WI

**Field Contractor:** Environmental Chemical Corporation, Cincinnati, OH

**Data Review Contractor:**

**SDG:** Site 83 EB csv, Certified - 9/24/2013 by KathrynPriess

**QC Level:**

**Project Manager:**

**Data Reviewer:**

**Data Reviewer Title:**

**Date of Review Report:**

### Samples Included in SDG Site 83 EB csv

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| BNASIM/NONE | 0 | 1 |
| ORTPHG/NONE | 0 | 1 |
| SW6010B/NONE | 0 | 1 |
| SW7470A/NONE | 0 | 1 |
| SW8081B/NONE | 0 | 1 |
| SW8082/NONE | 0 | 1 |
| SW8260C/NONE | 0 | 2 |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

| Analytical Method/ Leach Method | Normal Water Samples | Field QC Water Samples |
|---|---|---|
| SW8270D/NONE | 0 | 1 |
| SW8330/NONE | 0 | 1 |
| SW8330B/NONE | 0 | 1 |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3,  2012 to the extent possible. Where definitive guidance is not provided, data has been evaluated in a conservative manner using professional judgment. In cases where two qualifiers are listed as an action, such as 'J/UJ', the first qualifier applies to positive results, and the second to non-detect results.

Samples were collected by Environmental Chemical Corporation, Cincinnati, OH; analyses were performed by CT LABS., BARABOO, WI and were reported under sample delivery group (SDG) Site 83 EB csv. Results have been evaluated electronically using electronic data deliverables (EDDs) provided by the laboratory. The laboratory data summary forms (hard copy) have been reviewed during this effort and compared to the automated review output. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative.

The following quality control elements were supported by the electronic deliverable and were evaluated during this review effort:

- Blank
- Blank - Negative
- Equipment Blank
- Lab Replicate RPD
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

The following quality control elements were either not applicable to the deliverable, or were not supported by the electronic deliverable, and were therefore not included in the automated data review.  Those elements required for the project were reviewed manually, as narrated in the Comment section below.

- Ambient Blank
- Calibration Blank
- Calibration Blank - Negative

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

Continuing Calibration Verification

Field Blank

Field Duplicate RPD

Initial Calibration Verification

LCS RPD

Material Blank

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

A representative sampling or ten percent of sample and QC results were manually evaluated for compliance with project specific requirements and consistency with hard copy results. The following summaries were generated during the evaluation of this data set and are included in this report as applicable.

Batch – The analytical batch report is reviewed for completeness and compliance with project specific requirements. Incomplete or non-compliant run sequences are identified and their impact on data quality are discussed in the narrative.

QC Outlier – Results exceeding the evaluation criteria are reviewed for compliance with project requirements and a minimum of ten percent of the non-compliant QC values reported electronically are verified for consistency with hard-copy values.

Qualified Results – Qualified results are evaluated for compliance with project requirements and ten percent of qualified results are verified for consistency with the QC Outliers.

Rejected Results – All rejected results are evaluated for compliance with project requirements. The reason for rejection of the data is verified against hard copy data.

Field Duplicates – Field duplicate comparison results are evaluated for compliance with project requirements and ten percent of values reported are verified for consistency with the hard-copy data.

Data Submission Warnings – Warnings encountered during the data submission process are evaluated and their affect on data quality is discussed in the narrative below.

Analytical deficiencies, project non-compliance issues and inconsistencies with hard copy results observed during ADR evaluation process and their impact on data quality are summarized in the narrative below.

A total of 49 results (22.58%) out of the 217 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected. Trace values are not counted as qualified results in the above count. The qualified results are detailed in the following tables and discussed in the narrative below, where appropriate.

### Narrative Comments

| Analytical Method | Comment |
|---|---|

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

Reviewed by ,

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Reason and Comment Code Definitions**

| Reasons | |
|---|---|
| **Code** | **Definition** |
| A | Serial dilution |
| A1 | Ambient Blank |
| B | The analyte was found in an associated blank as well as in the sample. |
| B2 | CCB |
| B3 | CCB - Neg |
| c | LCS - low |
| C | LCS Recovery |
| d | Field Duplicate RPD |
| D | MS RPD |
| D1 | Lab Replicate RPD |
| D2 | No precision available |
| F | Field Blank |
| F1 | Hydrocarbon pattern does not match standard |
| G1 | Initial Calibration RRF |
| G2 | Initial Calibration RSD |
| h | Holding time exceeded by less than 2X. |
| H | Holding time exceeded by more than 2X. |
| H1 | Test Hold Time |
| H2 | Prep Hold Time |
| I | Surrogate recovery outside project limits. |
| J | CRA/CRI Recovery |
| K | An analyte (non-common laboratory artifact) was detected in the sample at a concentration less than 5X the concentration detected in the associated method blank. |
| L | Lab Blank |
| L1 | Lab Blank - Neg |
| m | MS - low |
| M | MS Recovery |
| N | Blank - No Action |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Reason and Comment Code Definitions**

| | |
|---|---|
| O | ICS |
| P | Sample preservation/collection requirement not met. |
| P1 | Column RPD |
| P2 | Improper preparation/extraction |
| q | Encore sample holding time exceeded by less than 2X. |
| Q | Encore sample holding time exceeded by more than 2X. |
| Q1 | Material Blank |
| R | Exceeds LinearCalibration Range |
| S | Internal standard |
| T | Trip Blank |
| TI | Tentatively Identified Compound |
| TR | Trace Level Detect |
| U | Receipt Temperature |
| V | Equipment Blank |
| V1 | ICV |
| V2 | CCV |
| V3 | CCV RRF |
| V4 | Sample Receipt Condition |
| W | Column breakdown (pesticides) |
| X | Raised reporting limit |
| Y | Cooler temperature greater than 10 degreec C. |
| y | Cooler temperature greater than 4 degrees C, but less than 10 degreec C. |
| Y1 | False Positive |
| Y2 | Data rejected due to radiological anomolies |
| Z | LCS RPD |
| Z2 | Analyte not confirmed on second column |
| Z3 | High percent moisture in sample. |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

| Flag Code and Definitions | |
|---|---|
| Flag | Definition |
| U | Undetected: The analyte was analyzed for, but not detected. |
| UJ | The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria. |
| J | Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria. |
| R | The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making. |
| N | The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification". |
| NJ | The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration. |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Batch Report**

**Test Method: BNASIM; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96939 | 45508 | NA | LABQC | WQ | LABQC | 339737 | | 1/1 | 20-Aug-2013 7:30 AM | 20-Aug-2013 7:30 AM | 21-Aug-2013 11:46 AM | LB |
| | 45508 | NA | LABQC | WQ | LABQC | 339738 | | 1/1 | 20-Aug-2013 7:30 AM | 20-Aug-2013 7:30 AM | 21-Aug-2013 12:06 PM | BS |
| | 45508 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 20-Aug-2013 7:30 AM | 21-Aug-2013 12:26 PM | EB |

**Test Method: ORTPHG; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96940 | 96940 | NA | LABQC | WQ | LABQC | 342875 | | 1/1 | 21-Aug-2013 11:11 AM | | 21-Aug-2013 11:11 AM | BS |
| | 96940 | NA | LABQC | WQ | LABQC | 342876 | | 1/1 | 21-Aug-2013 12:35 PM | | 21-Aug-2013 12:35 PM | LB |
| | 96940 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | | 21-Aug-2013 1:18 PM | EB |

**Test Method: SW6010B; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96853 | 45497 | NA | LABQC | WQ | LABQC | 339613 | | 1/1 | 16-Aug-2013 12:30 PM | 16-Aug-2013 12:30 PM | 19-Aug-2013 2:39 PM | BS |
| | 45497 | NA | LABQC | WQ | LABQC | 339612 | | 1/1 | 16-Aug-2013 12:30 PM | 16-Aug-2013 12:30 PM | 19-Aug-2013 2:43 PM | LB |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 19-Aug-2013 2:47 PM | EB |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339614 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 19-Aug-2013 3:05 PM | LR |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339615 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 19-Aug-2013 3:09 PM | MS |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339616 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 19-Aug-2013 3:13 PM | SD |
| 96854 | 45497 | NA | LABQC | WQ | LABQC | 339613 | | 1/1 | 16-Aug-2013 12:30 PM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:03 AM | BS |
| | 45497 | NA | LABQC | WQ | LABQC | 339612 | | 1/1 | 16-Aug-2013 12:30 PM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:06 AM | LB |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Batch Report**

| Test Method: SW6010B; Leach Method: NONE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 96854 | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:07 AM | EB |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339614 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:09 AM | LR |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339615 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:10 AM | MS |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339616 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 20-Aug-2013 10:11 AM | SD |
| 96853 | 45497 | NA | LABQC | WQ | LABQC | 339612 | | 1/1 | 16-Aug-2013 12:30 PM | 16-Aug-2013 12:30 PM | 21-Aug-2013 1:51 PM | LB |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 21-Aug-2013 1:55 PM | EB |
| | 45497 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339614 | | 1/1 | 15-Aug-2013 9:30 AM | 16-Aug-2013 12:30 PM | 21-Aug-2013 2:03 PM | LR |
| **Test Method: SW7470A; Leach Method: NONE** | | | | | | | | | | | | |
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 96908 | 45527 | NA | LABQC | WQ | LABQC | 339931 | | 1/1 | 20-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 10:54 AM | BS |
| | 45527 | NA | LABQC | WQ | LABQC | 339930 | | 1/1 | 20-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 10:56 AM | LB |
| | 45527 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 10:58 AM | EB |
| | 45527 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339932 | | 1/1 | 15-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 11:02 AM | LR |
| | 45527 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339933 | | 1/1 | 15-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 11:04 AM | MS |
| | 45527 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339934 | | 1/1 | 15-Aug-2013 9:30 AM | 20-Aug-2013 9:30 AM | 21-Aug-2013 11:06 AM | SD |
| **Test Method: SW8081B; Leach Method: NONE** | | | | | | | | | | | | |
| **Analytical Batch** | **Prep Batch** | **Leach Batch** | **Location** | **Matrix** | **Field Sample ID** | **Lab Sample ID** | **Calibration Ref** | **Run#/ Dil'n** | **Collection Date/Time** | **Extract Date/Time** | **Analysis Date/Time** | **Sample Type** |
| 96883 | 45504 | NA | LABQC | WQ | LABQC | 339717 | | 1/1 | 19-Aug-2013 8:00 AM | 19-Aug-2013 8:00 AM | 23-Aug-2013 12:59 PM | LB |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Batch Report**

**Test Method: SW8081B; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96883 | 45504 | NA | LABQC | WQ | LABQC | 339718 | | 1/1 | 19-Aug-2013 8:00 AM | 19-Aug-2013 8:00 AM | 23-Aug-2013 1:15 PM | BS |
| | 45504 | NA | LABQC | WQ | LABQC | 339718 | | 1/1 | 19-Aug-2013 8:00 AM | 19-Aug-2013 8:00 AM | 23-Aug-2013 1:32 PM | BS |
| | 45504 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 19-Aug-2013 8:00 AM | 23-Aug-2013 1:49 PM | EB |
| 97001 | 45551 | NA | LABQC | WQ | LABQC | 340733 | | 1/1 | 21-Aug-2013 8:00 AM | 21-Aug-2013 8:00 AM | 23-Aug-2013 3:46 PM | BS |

**Test Method: SW8082; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96884 | 45505 | NA | LABQC | WQ | LABQC | 339720 | | 1/1 | 19-Aug-2013 8:00 AM | 19-Aug-2013 8:00 AM | 21-Aug-2013 11:09 AM | LB |
| | 45505 | NA | LABQC | WQ | LABQC | 339721 | | 1/1 | 19-Aug-2013 8:00 AM | 19-Aug-2013 8:00 AM | 21-Aug-2013 11:29 AM | BS |
| | 45505 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 19-Aug-2013 8:00 AM | 21-Aug-2013 11:48 AM | EB |

**Test Method: SW8260C; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96835 | 96835 | NA | LABQC | WQ | LABQC | 340024 | | 1/1 | 19-Aug-2013 11:55 AM | | 19-Aug-2013 11:55 AM | BS |
| | 96835 | NA | LABQC | WQ | LABQC | 340028 | | 1/1 | 19-Aug-2013 12:25 PM | | 19-Aug-2013 12:25 PM | LB |
| | 96835 | NA | FIELDQC | WQ | 083SB-0024-0001-TB | 339581 | | 1/1 | 15-Aug-2013 8:00 AM | | 19-Aug-2013 7:19 PM | TB |
| | 96835 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | | 19-Aug-2013 7:48 PM | EB |
| | 96835 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 340195 | | 1/1 | 15-Aug-2013 9:30 AM | | 19-Aug-2013 9:16 PM | MS |
| | 96835 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 340715 | | 1/1 | 15-Aug-2013 9:30 AM | | 19-Aug-2013 9:46 PM | SD |
| 97040 | 97040 | NA | LABQC | WQ | LABQC | 343270 | | 1/1 | 23-Aug-2013 3:40 PM | | 23-Aug-2013 3:40 PM | BS |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Batch Report**

**Test Method: SW8260C; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97040 | 97040 | NA | LABQC | WQ | LABQC | 343278 | | 1/1 | 23-Aug-2013 4:39 PM | | 23-Aug-2013 4:39 PM | LB |

**Test Method: SW8270D; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 96903 | 45503 | NA | LABQC | WQ | LABQC | 339715 | | 1/1 | 19-Aug-2013 10:30 AM | 19-Aug-2013 10:30 AM | 20-Aug-2013 1:57 PM | LB |
| | 45503 | NA | LABQC | WQ | LABQC | 339716 | | 1/1 | 19-Aug-2013 10:30 AM | 19-Aug-2013 10:30 AM | 20-Aug-2013 2:17 PM | BS |
| | 45503 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 19-Aug-2013 10:30 AM | 20-Aug-2013 4:22 PM | EB |
| 97009 | 45552 | NA | LABQC | WQ | LABQC | 340736 | | 1/1 | 21-Aug-2013 8:00 AM | 21-Aug-2013 8:00 AM | 22-Aug-2013 2:11 PM | LB |
| | 45552 | NA | LABQC | WQ | LABQC | 340737 | | 1/1 | 21-Aug-2013 8:00 AM | 21-Aug-2013 8:00 AM | 22-Aug-2013 2:48 PM | BS |

**Test Method: SW8330B; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97103 | 45570 | NA | LABQC | WQ | LABQC | 341681 | | 1/1 | 22-Aug-2013 9:00 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 10:40 AM | LB |
| | 45570 | NA | LABQC | WQ | LABQC | 341682 | | 1/1 | 22-Aug-2013 9:00 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 10:59 AM | BS |
| | 45570 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 11:17 AM | EB |
| 97104 | 45571 | NA | LABQC | WQ | LABQC | 341684 | | 1/1 | 22-Aug-2013 9:00 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 3:14 PM | LB |
| | 45571 | NA | LABQC | WQ | LABQC | 341685 | | 1/1 | 22-Aug-2013 9:00 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 3:22 PM | BS |

**Test Method: SW8330; Leach Method: NONE**

| Analytical Batch | Prep Batch | Leach Batch | Location | Matrix | Field Sample ID | Lab Sample ID | Calibration Ref | Run#/ Dil'n | Collection Date/Time | Extract Date/Time | Analysis Date/Time | Sample Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97104 | 45571 | NA | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | | 1/1 | 15-Aug-2013 9:30 AM | 22-Aug-2013 9:00 AM | 28-Aug-2013 3:31 PM | EB |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Field Batch Report**

| **Test Method: BNASIM** | | **Leach Method: NONE** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: ORTPHG** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW6010B** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW7470A** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8081B** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8082** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8260C** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8270D** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8330** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Field Batch Report**

| **Test Method: SW8330B** | | **Leach Method: NONE** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| 15081301 | | | FIELDQC | WQ | 083SB-0023-0001-ER | 339561 | 8/15/2013 9:30:00 AM | EB |
| **Test Method: SW8260C** | | **Leach Method: NONE** | | | | | | |
| **EBLOT** | **TBLOT** | **ABLOT** | **LOCID** | **Matrix** | **FLDSAMPID** | **LABSAMPID** | **LOGDATE** | **SACODE** |
| | 15081301 | | FIELDQC | WQ | 083SB-0024-0001-TB | 339581 | 8/15/2013 8:00:00 AM | TB |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**QC Outlier Report**

| Test/Prep/Leach | QC Element | Sample ID/ Lab Sample ID | Run# / Dil'n | Analyte | Result (Units) | Qualifier | Warning Limits | Control Limits | Reason | Comment | Rule | Action Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ORTPHG / SW5030B/NONE | Equipment Blank | 083SB-0023-0001-ER (EB) / 339561 | 1 / 1.00 | Gasoline Components | 26.0 (ug/L) | U/None | < 23 | < 100 | V | | 1 | 26.0 |
| SW6010B / TOTAL/NONE | Blank | 339612 (LB) / 339612 | 1 / 1.00 | Calcium | 109 (ug/L) | U/None | < 17 | < 100 | L | | 1 | 109 |
| SW6010B / TOTAL/NONE | Blank | 339612 (LB) / 339612 | 1 / 1.00 | Iron | 77.2 (ug/L) | U/None | < 16 | < 100 | L | | 1 | 77.2 |
| SW6010B / TOTAL/NONE | Blank | 339612 (LB) / 339612 | 1 / 1.00 | Manganese | 1.8 (ug/L) | U/None | < 0.7 | < 4 | L | | 1 | 1.82 |
| SW6010B / TOTAL/NONE | Blank | 339612 (LB) / 339612 | 1 / 1.00 | Thallium | 2.7 (ug/L) | U/None | < 2.5 | < 15 | L | | 1 | 2.66 |
| SW6010B / TOTAL/NONE | Equipment Blank | 083SB-0023-0001-ER (EB) / 339561 | 1 / 1.00 | Silver | 0.77 (ug/L) | U/None | < 0.7 | < 4 | V | | 1 | 0.770 |
| SW8260C / SW5030B/NONE | Equipment Blank | 083SB-0023-0001-ER (EB) / 339561 | 1 / 1.00 | Chloroform | 0.37 (ug/L) | U/None | < 0.15 | < 0.5 | V | | 1 | 0.370 |
| SW8260C / SW5030B/NONE | Trip Blank | 083SB-0024-0001-TB (TB) / 339581 | 1 / 1.00 | Methylene Chloride | 1.3 (ug/L) | U/None | < 0.4 | < 2 | T | | 2 | 2.60 |
| SW8270D / SW3510/NONE | LCS Recovery | 339716 (BS) / 339716 | 1 / 1.00 | 2,2'-Oxybis(1-chloro)propane | 66.5 (PERCENT) | J/UJ | 70 - 130 | 70 - 130 | C | | | |
| SW8270D / SW3510/NONE | LCS Recovery | 339716 (BS) / 339716 | 1 / 1.00 | Cresols, m & p | 59.0 (PERCENT) | J/UJ | 70 - 130 | 70 - 130 | C | | | |
| SW8270D / SW3510/NONE | LCS Recovery | 339716 (BS) / 339716 | 1 / 1.00 | Hexachlorocyclopentadiene | 53.0 (PERCENT) | J/UJ | 70 - 130 | 70 - 130 | C | | | |
| SW8270D / SW3510/NONE | Surrogate | 083SB-0023-0001-ER (EB) / 339561 | 1 / 1.00 | Phenol-d5 | 27.0 (PERCENT) | J/UJ | 40 - 100 | 10 - 100 | I | | | |
| SW8330B / METHOD/NONE | LCS Recovery | 341685 (BS) / 341685 | 1 / 1.00 | NITROGUANIDINE | 78.6 (PERCENT) | J/UJ | 80 - 120 | 20 - 120 | C | | | |
| SW8330B / METHOD/NONE | Surrogate | 083SB-0023-0001-ER (EB) / 339561 | 1 / 1.00 | 1,2-Dinitrobenzene | 120 (PERCENT) | J/None | 78 - 118 | 10 - 118 | I | | | |

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ORTPHG/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Gasoline Components | 100 | 26.0 | 26.0 J | | ug/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW6010B/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Silver | 4.0 | 0.77 | 0.77 J | | ug/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8260C/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Chloroform | 0.50 | 0.37 | 0.37 J | | ug/L | TR |
| SW8260C/NONE | WQ | 083SB-0024-0001-TB | 339581 | TB | Methylene Chloride | 2.0 | 1.3 | 1.3 J | | ug/L | TR |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 1,2,4-Trichlorobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 1,2-Dichlorobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 1,3-Dichlorobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 1,4-Dichlorobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,2'-Oxybis(1-chloro)propane | 1.0 | 1.0 | 1.0 UJ | - | ug/L | C/I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4,5-Trichlorophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4,6-Trichlorophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4-Dichlorophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4-Dimethylphenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4-Dinitrophenol | 6.1 | 6.1 | 6.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,4-Dinitrotoluene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2,6-Dinitrotoluene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2-Chloronaphthalene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2-Chlorophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2-Methylphenol (o-Cresol) | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2-Nitroaniline | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 2-Nitrophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 3,3'-Dichlorobenzidine | 2.5 | 2.5 | 2.5 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 3-Nitroaniline | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4,6-Dinitro-2-Methylphenol | 6.1 | 6.1 | 6.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Bromophenyl phenyl ether | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Qualified Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Bias | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Chloro-3-Methylphenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Chloroaniline | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Chlorophenyl Phenyl Ether | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Nitroaniline | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | 4-Nitrophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Benzoic acid | 76.0 | 76.0 | 76.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Benzyl alcohol | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Benzyl butyl phthalate | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | bis(2-Chloroethoxy) Methane | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Carbazole | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Cresols, m & p | 9.1 | 9.1 | 9.1 UJ | - | ug/L | C/I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Dibenzofuran | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Diethyl Phthalate | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Dimethyl Phthalate | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Di-n-Butyl Phthalate | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Di-n-Octylphthalate | 3.0 | 3.0 | 3.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Hexachlorobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Hexachlorobutadiene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Hexachlorocyclopentadiene | 1.2 | 1.2 | 1.2 UJ | - | ug/L | C/I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Hexachloroethane | 1.2 | 1.2 | 1.2 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Isophorone | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Nitrobenzene | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | n-Nitrosodi-n-propylamine | 1.0 | 1.0 | 1.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | n-Nitrosodiphenylamine | 2.0 | 2.0 | 2.0 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Pentachlorophenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| SW8270D/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Phenol | 5.1 | 5.1 | 5.1 UJ | - | ug/L | I |
| **Test Leach** | **Matrix** | **FieldSample ID** | **LabSample ID** | **Type** | **Analyte** | **RL** | **Lab Result** | **Qualified Result** | **Bias** | **Units** | **Reason** |
| SW8330/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | NITROGUANIDINE | 120 | 120 | 120 UJ | - | ug/L | C |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Detected Results**

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| ORTPHG/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Gasoline Components | 100 | 26.0 | 26.0 J | ug/L | TR |

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW6010B/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Silver | 4.0 | 0.77 | 0.77 J | ug/L | TR |

| Test Leach | Matrix | FieldSample ID | LabSample ID | Type | Analyte | RL | Lab Result | Qualified Result | Units | Reason |
|---|---|---|---|---|---|---|---|---|---|---|
| SW8260C/NONE | WQ | 083SB-0023-0001-ER | 339561 | EB | Chloroform | 0.50 | 0.37 | 0.37 J | ug/L | TR |
| SW8260C/NONE | WQ | 083SB-0024-0001-TB | 339581 | TB | Methylene Chloride | 2.0 | 1.3 | 1.3 J | ug/L | TR |

## AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

### Rejected Results

**--No Records Found--**

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Anomalies Count**

SDG Name: Site 83 EB csv

| Test/Extraction Method/Leach | # of Field Samples Outside of Compliance | # of Analytes Outside of Compliance |
|---|---|---|
| ORTPHG/SW5030B/NONE | 1 | 1 |
| SW6010B/TOTAL/NONE | 1 | 9 |
| SW8082/SW3520C/NONE | 1 | 9 |
| SW8260C/SW5030B/NONE | 2 | 2 |
| SW8270D/SW3510/NONE | 1 | 5 |
| SW8330/METHOD/NONE | 1 | 1 |
| SW8330B/METHOD/NONE | 1 | 16 |

**Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Reporting Anomalies**

SDG Name: Site 83 EB csv

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| ORTPHG/NONE | 083SB-0023-0001-ER | EB | 1 | Gasoline Components | 26 J | 23 | 100 | 0.5 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Antimony | 12 U | 2 | 12 | 2 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Arsenic | 24 U | 4 | 24 | 5 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Cadmium | 2 U | 0.3 | 2 | 0.5 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Copper | 7 U | 1.2 | 7 | 5 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Lead | 4 U | 1.4 | 4 | 3 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Potassium | 500 U | 90 | 500 | 200 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Selenium | 13 U | 2.2 | 13 | 5 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Sodium | 600 U | 100 | 600 | 200 | ug/L |
| SW6010B/NONE | 083SB-0023-0001-ER | EB | 1 | Thallium | 15 U | 2.5 | 15 | 1 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1016 (Arochlor 1016) | 1 U | 0.12 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1221 (Arochlor 1221) | 1 U | 0.087 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1232 (Arochlor 1232) | 1 U | 0.15 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1242 (Arochlor 1242) | 1 U | 0.098 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1248 (Arochlor 1248) | 1 U | 0.09 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1254 (Arochlor 1254) | 1 U | 0.096 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1260 (Arochlor 1260) | 1 U | 0.1 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1262 (Arochlor 1262) | 1 U | 0.29 | 1 | 0.2 | ug/L |
| SW8082/NONE | 083SB-0023-0001-ER | EB | 1 | PCB-1268 (Arochlor 1268) | 1 U | 0.057 | 1 | 0.2 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8260C/NONE | 083SB-0023-0001-ER | EB | 1 | Methylene Chloride | 2 U | 0.4 | 2 | 1 | ug/L |
| SW8260C/NONE | 083SB-0024-0001-TB | TB | 1 | Methylene Chloride | 1.3 J | 0.4 | 2 | 1 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8270D/NONE | 083SB-0023-0001-ER | EB | 1 | 2,4,5-Trichlorophenol | 5.1 UJ | 1.1 | 5.1 | 5 | ug/L |
| SW8270D/NONE | 083SB-0023-0001-ER | EB | 1 | 2,4,6-Trichlorophenol | 5.1 UJ | 1 | 5.1 | 5 | ug/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Reporting Anomalies**

SDG Name: Site 83 EB csv

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8270D/NONE | 083SB-0023-0001-ER | EB | 1 | Benzoic acid | 76 UJ | 11 | 76 | 25 | ug/L |
| SW8270D/NONE | 083SB-0023-0001-ER | EB | 1 | Hexachlorobenzene | 1 UJ | 0.27 | 1 | 0.2 | ug/L |
| SW8270D/NONE | 083SB-0023-0001-ER | EB | 1 | Pentachlorophenol | 5.1 UJ | 1.1 | 5.1 | 5 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8330/NONE | 083SB-0023-0001-ER | EB | 1 | NITROGUANIDINE | 120 UJ | 32 | 120 | 20 | ug/L |

| Test Leach | FieldSample ID | Type | Dilution | Analyte | Result | DL | RL | Project RL | Units |
|---|---|---|---|---|---|---|---|---|---|
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 1,3,5-Trinitrobenzene | 0.8 U | 0.23 | 0.8 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 1,3-Dinitrobenzene | 1 U | 0.2 | 1 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 2,4,6-Trinitrotoluene | 1 U | 0.22 | 1 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 2,4-Dinitrotoluene | 2 U | 0.3 | 2 | 0.1 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 2,6-Dinitrotoluene | 1 U | 0.24 | 1 | 0.1 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 2-Amino-4,6-dinitrotoluene | 1 U | 0.24 | 1 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 2-Nitrotoluene | 2 U | 0.4 | 2 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 3-Nitrotoluene | 0.8 U | 0.23 | 0.8 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 4-Amino-2,6-Dinitrotoluene | 1 U | 0.28 | 1 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | 4-Nitrotoluene | 1 U | 0.22 | 1 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) | 1 U | 0.18 | 1 | 0.5 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Nitrobenzene | 0.8 U | 0.22 | 0.8 | 0.2 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Nitroglycerin | 8 U | 2.2 | 8 | 3 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX) | 1 U | 0.25 | 1 | 0.5 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Pentaerythritol Tetranitrate | 12 U | 3 | 12 | 3 | ug/L |
| SW8330B/NONE | 083SB-0023-0001-ER | EB | 1 | Tetryl | 1 U | 0.21 | 1 | 0.2 | ug/L |

**Reporting Anomalies are cases where the reported RL exceeds that specified in the governing project document.**

# AUTOMATED DATA REVIEW SUMMARY for Site 83 EB csv

**Worksheet**

SDG Name: Site 83 EB csv

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# WORKSHEET 5

## Automated Data Review Summary for Field Duplicates

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**Field Duplicate Report By Event and Site**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | BNASIM |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Methylnaphthalene | 1.90 | 2.00 | 1.60 | 5.13 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Acenaphthene | 0.780 | 0.710 | 1.60 | 9.40 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Acenaphthylene | ND | ND | 1.60 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Anthracene | 2.10 | 7.50 | 1.60 | 113 | 50 | NA | 5.4 |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzo(a)anthracene | 7.30 | 11.0 | 1.60 | 40.4 | 50 | NA | 3.7 |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzo(a)pyrene | 3.20 | 1.40 | 1.60 | 78.3 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzo(b)fluoranthene | 8.90 | 5.10 | 1.60 | 54.3 | 50 | NA | 3.8 |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzo(g,h,i)perylene | 6.00 | 3.80 | 1.60 | 44.9 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzo(k)fluoranthene | 1.90 | 0.980 | 1.60 | 63.9 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Chrysene | 8.30 | 8.30 | 1.60 | 0.00 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Dibenz(a,h)anthracene | 1.20 | 0.750 | 1.60 | 46.2 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Fluoranthene | 10.0 | 4.10 | 1.60 | 83.7 | 50 | NA | 5.9 |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Fluorene | 0.930 | 0.740 | 1.60 | 22.8 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Indeno(1,2,3-c,d)pyrene | 3.60 | 1.80 | 1.60 | 66.7 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Naphthalene | 2.00 | 2.60 | 1.60 | 26.1 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Phenanthrene | 11.0 | 7.70 | 1.60 | 35.3 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Pyrene | 8.10 | 3.60 | 1.60 | 76.9 | 50 | NA | 4.5 |

**Field Duplicate Report By Event and Site**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | E353.2 |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Nitrocellulose | ND | ND | 200 | NA | 40 | NA | OK |

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW6010C |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Aluminum | 12500 | 10800 | 1.20 | 14.6 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Antimony | 1.20 | 1.00 | 4.10 | 18.2 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Arsenic | 13.9 | 12.6 | 4.10 | 9.81 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Barium | 78.1 | 70.2 | 0.260 | 10.7 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Beryllium | 0.680 | 0.610 | 0.210 | 10.9 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Cadmium | ND | 0.0460 | 0.210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Calcium | 28900 | 24400 | 7.30 | 16.9 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Chromium | 18.3 | 16.2 | 0.730 | 12.2 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Cobalt | 11.8 | 11.0 | 1.20 | 7.02 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Copper | 21.3 | 19.9 | 2.10 | 6.80 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Iron | 27200 | 23800 | 9.30 | 13.3 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Lead | 11.8 | 10.8 | 1.30 | 8.85 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Magnesium | 7530 | 6660 | 4.10 | 12.3 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Manganese | 428 | 380 | 0.780 | 11.9 | 50 | OK | NA |

**Field Duplicate Report By Event and Site**
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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW6010C |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Nickel | 29.2 | 27.0 | 0.620 | 7.83 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Potassium | 1300 | 1250 | 68.0 | 3.92 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Selenium | ND | ND | 0.410 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Silver | ND | ND | 0.100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Sodium | 55.2 | 53.7 | 25.0 | 2.75 | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Thallium | ND | ND | 2.50 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Vanadium | 18.8 | 16.7 | 0.410 | 11.8 | 50 | OK | NA |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Zinc | 70.2 | 64.1 | 1.60 | 9.08 | 50 | OK | NA |

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW7471B |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Mercury | 0.0130 | 0.0120 | 0.00910 | 8.00 | 50 | NA | OK |

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8260C |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,1,1-Trichloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,1,2,2-Tetrachloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,1,2-Trichloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |

**Field Duplicate Report By Event and Site**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8260C |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,1-Dichloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,1-Dichloroethene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,2-Dibromoethane (EDB) | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,2-Dichloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,2-Dichloroethene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 1,2-Dichloropropane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 2-Butanone (MEK) | ND | ND | 18.0 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 2-Hexanone | ND | ND | 36.0 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | 4-Methyl-2-pentanone (MIBK) | ND | ND | 18.0 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Acetone | ND | ND | 18.0 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Benzene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Bromochloromethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Bromodichloromethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Bromoform | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Bromomethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Carbon Disulfide | ND | ND | 3.60 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Carbon Tetrachloride | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Chlorobenzene | ND | ND | 1.80 | NA | 50 | NA | OK |

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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8260C |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Chloroethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Chloroform | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Chloromethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | cis-1,2-Dichloroethylene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | cis-1,3-Dichloropropene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Dibromochloromethane | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Ethylbenzene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | m,p-Xylene | ND | ND | 3.60 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Methylene Chloride | ND | ND | 9.00 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | o-Xylene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Styrene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Tetrachloroethene (PCE) | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Toluene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | trans-1,2-Dichloroethene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | trans-1,3-Dichloropropene | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Trichloroethene (TCE) | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Vinyl Chloride | ND | ND | 1.80 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337819 / 337821 | Xylenes, Total | ND | ND | 3.60 | NA | 50 | NA | OK |

**Field Duplicate Report By Event and Site**
Ravenna Army Ammunition Plant
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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8270D |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,2,4-Trichlorobenzene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,2-Dichlorobenzene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,3-Dichlorobenzene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,4-Dichlorobenzene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,2'-Oxybis(1-chloro)propane | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4,5-Trichlorophenol | ND | ND | 640 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4,6-Trichlorophenol | ND | ND | 640 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4-Dichlorophenol | ND | ND | 640 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4-Dimethylphenol | ND | ND | 640 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4-Dinitrophenol | ND | ND | 1100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4-Dinitrotoluene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,6-Dinitrotoluene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Chloronaphthalene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Chlorophenol | ND | ND | 2100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Methylphenol (o-Cresol) | ND | ND | 2100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Nitroaniline | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Nitrophenol | ND | ND | 1100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 3,3'-Dichlorobenzidine | ND | ND | 530 | NA | 50 | NA | OK |

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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8270D |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 3-Nitroaniline | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4,6-Dinitro-2-Methylphenol | ND | ND | 1100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Bromophenyl phenyl ether | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Chloro-3-Methylphenol | ND | ND | 2100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Chloroaniline | ND | ND | 210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Chlorophenyl Phenyl Ether | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Nitroaniline | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Nitrophenol | ND | ND | 2100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzoic acid | ND | ND | 3200 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzyl alcohol | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Benzyl butyl phthalate | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | bis(2-Chloroethoxy) Methane | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Carbazole | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Cresols, m & p | ND | ND | 3800 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Di-n-Butyl Phthalate | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Di-n-Octylphthalate | ND | ND | 210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Dibenzofuran | ND | ND | 130 | NA | 50 | NA | OK |

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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8270D |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Diethyl Phthalate | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Dimethyl Phthalate | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Hexachlorobenzene | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Hexachlorobutadiene | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Hexachlorocyclopentadiene | ND | ND | 210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Hexachloroethane | ND | ND | 130 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Isophorone | ND | ND | 210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | n-Nitrosodi-n-propylamine | ND | ND | 420 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | n-Nitrosodiphenylamine | ND | ND | 250 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Nitrobenzene | ND | ND | 210 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Pentachlorophenol | ND | ND | 1100 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Phenol | ND | ND | 640 | NA | 50 | NA | OK |

| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8330 |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | NITROGUANIDINE | ND | ND | 0.250 | NA | 50 | NA | OK |

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| Location | Analysis |
|---|---|
| 83-1039-DU1-SB3 | SW8330B |

| Sample Date | Field ID - Primary/Field Dup | Lab ID - Primary/Field Dup | Analyte | Primary Result | FD Result | RL | RPD | RPD Criteria | RPD Check | RL Check |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,3,5-Trinitrobenzene | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 1,3-Dinitrobenzene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4,6-Trinitrotoluene | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,4-Dinitrotoluene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2,6-Dinitrotoluene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Amino-4,6-dinitrotoluene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 2-Nitrotoluene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 3,5-Dinitroaniline | ND | ND | 0.300 | NA | 30 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 3-Nitrotoluene | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Amino-2,6-Dinitrotoluene | ND | ND | 0.300 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | 4-Nitrotoluene | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Nitrobenzene | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Nitroglycerin | ND | ND | 2.00 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX) | ND | ND | 0.500 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Pentaerythritol Tetranitrate | ND | ND | 2.00 | NA | 50 | NA | OK |
| Aug 12 2013 | 083SB-0005M-0001-SO / 083SB-0006M-0001-SO | 337818 / 337820 | Tetryl | ND | ND | 0.300 | NA | 50 | NA | OK |

**Field Duplicate Report By Event and Site**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil

**ATTACHMENTS**

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# ATTACHMENT A

## Field Blank Quality Control – Trip Blanks and Equipment Rinsate Blanks

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**Trip Blanks**
**Chemistry Results**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| **Site Name: Site 83** | | | | |
|---|---|---|---|---|
| | | TB-1 | TB-2 | TB-3 |
| Field Sample ID: | | 083SB-0016-0001-TB | 083SB-0018-0001-TB | 083SB-0020-0001-TB |
| Lab Sample ID: | | 337835 | 337836 | 338809 |
| Lab Name: | | CTLB | CTLB | CTLB |
| Sample Date: | | 8/12/2013 | 8/12/2013 | 8/14/2013 |
| Analysis Information: | | 1X | 1X | 1X |
| **Volatile Organic Compounds by GC/MS** | **Units** | | | |
| 1,1,1-Trichloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,1,2,2-Tetrachloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,1,2-Trichloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,1-Dichloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,1-Dichloroethene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,2-Dibromoethane (EDB) | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,2-Dichloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,2-Dichloroethene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 1,2-Dichloropropane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| 2-Butanone (MEK) | µg/L | 10 U | 10 U | 10 U |
| 2-Hexanone | µg/L | 20 U | 20 U | 20 U |
| 4-Methyl-2-pentanone (MIBK) | µg/L | 10 U | 10 U | 10 U |
| Acetone | µg/L | 10 U | 10 U | **15 J** |
| Benzene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Bromochloromethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Bromodichloromethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Bromoform | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Bromomethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Carbon Disulfide | µg/L | 2.0 U | 2.0 U | 2.0 U |
| Carbon Tetrachloride | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Chlorobenzene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Chloroethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Chloroform | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Chloromethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| cis-1,2-Dichloroethylene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| cis-1,3-Dichloropropene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Dibromochloromethane | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Ethylbenzene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| m,p-Xylene | µg/L | 2.0 U | 2.0 U | 2.0 U |
| Methylene Chloride | µg/L | 2.0 U | 2.0 U | 2.0 U |
| o-Xylene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Styrene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| tert-Butyl Methyl Ether (MTBE) | µg/L | | | 1.0 U |
| Tetrachloroethene (PCE) | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Toluene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| trans-1,2-Dichloroethene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| trans-1,3-Dichloropropene | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Trichloroethene (TCE) | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Vinyl Chloride | µg/L | 1.0 U | 1.0 U | 1.0 U |
| Xylenes, Total | µg/L | 2.0 U | 2.0 U | 2.0 U |

**Notes:**
CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter
J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated
U = Compound was Not Detected

**Trip Blanks**
**Chemistry Results**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| | | QC TB-1 | QC TB-5 | QC TB-11 |
|---|---|---|---|---|
| Field Sample ID: | | 070-0060-0001-TB | 079-0008-0001-TB | 083SB-0024-0001-TB |
| Lab Sample ID: | | 240-18735-7 | 240-21987-2 | 339581 |
| Lab Name: | | TAM0 | TAM0 | CTLB |
| Sample Date: | | 12/12/2012 | 3/14/2013 | 8/15/2013 |
| Analysis Information: | | 1X | 1X | 1X |
| **Volatile Organic Compounds by Capillary GC/MS** | **Units** | | | |
| 1,1,1-Trichloroethane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 1,1,2,2-Tetrachloroethane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 1,1,2-Trichloroethane | µg/L | 0.50 U | 0.50 U | 0.50 U |
| 1,1-Dichloroethane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 1,1-Dichloroethene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dibromoethane (EDB) | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloroethane | µg/L | 0.25 U | 0.25 U | 0.50 U |
| 1,2-Dichloroethene | µg/L | 0.50 U | 0.50 U | 0.25 U |
| 1,2-Dichloropropane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| 2-Butanone (MEK) | µg/L | 0.57 U | 0.57 U | 2.5 U |
| 2-Hexanone | µg/L | 0.50 U | 0.50 U | 5.0 U |
| 4-Methyl-2-pentanone (MIBK) | µg/L | 0.50 U | 0.50 U | 5.0 U |
| Acetone | µg/L | 1.1 U | 1.1 U | 5.0 U |
| Benzene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Bromochloromethane | µg/L | 0.50 U | 0.50 U | 0.25 U |
| Bromodichloromethane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Bromoform | µg/L | 0.64 U | 0.64 U | 0.25 U |
| Bromomethane | µg/L | 0.50 U | 0.50 U | 0.50 U |
| Carbon Disulfide | µg/L | 0.25 U | 0.25 U | 0.50 U |
| Carbon Tetrachloride | µg/L | 0.25 U | 0.25 UJ | 0.25 U |
| Chlorobenzene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Chloroethane | µg/L | 0.50 U | 0.50 U | 0.50 U |
| Chloroform | µg/L | **0.32 J** | **0.31 J** | 0.25 U |
| Chloromethane | µg/L | 0.50 U | 0.50 U | 0.50 U |
| cis-1,2-Dichloroethylene | µg/L | | | 0.25 U |
| cis-1,3-Dichloropropene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Dibromochloromethane | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Ethylbenzene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| m,p-Xylene | µg/L | | | 0.50 U |
| Methylene Chloride | µg/L | 0.50 U | 0.50 U | **1.3 J** |
| o-Xylene | µg/L | | | 0.25 U |
| Styrene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| tert-Butyl Methyl Ether (MTBE) | µg/L | 0.25 U | 0.25 U | 0.50 U |
| Tetrachloroethene (PCE) | µg/L | 0.50 U | 0.50 U | 0.50 U |
| Toluene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | µg/L | | | 0.25 U |
| trans-1,3-Dichloropropene | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Trichloroethene (TCE) | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Vinyl Chloride | µg/L | 0.25 U | 0.25 U | 0.25 U |
| Xylenes, Total | µg/L | 0.75 U | 0.75 U | 0.75 U |

**Notes:**

TAM0 = TestAmerica, Inc., North Canton, OH
CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter
J = Detected, Estimated
UJ = Compound was not detected and reporting limit is estimated

**Trip Blanks**
**Chemistry Results**
Ravenna Army Ammunition Plant
RVAAP, QAPP Oct. 2012

| | | QC TB-2 | QC TB-6 |
|---|---|---|---|
| Field Sample ID: | | 070SB-0055-0001-TB | 079-0009-0001-TB |
| Lab Sample ID: | | 240-18735-2 | 240-21987-3 |
| Lab Name: | | TAM0 | TAM0 |
| Sample Date: | | 12/12/2012 | 3/14/2013 |
| Analysis Information: | | 1X | 1X |
| **Modified SW8015 for the Determination of Gasoline Range Organics in Soil and Water, GC/FID** | **Units** | | |
| Petroleum Hydrocarbons C6-C12 | µg/L | **37 J** | 50 U |

**Notes:**

TAM0 = TestAmerica, Inc., North Canton, OH
UG/L = Micrograms per Liter
J = Detected, Estimated

**Table Equipment Blanks**
**Equipment Blank Results**
Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| **Site Name: Site 83** | |
|---|---|
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Explosives** | **Units** | |
|---|---|---|
| 1,3,5-Trinitrobenzene | ug/L | 0.80 U |
| 1,3-Dinitrobenzene | ug/L | 1.0 U |
| 2,4,6-Trinitrotoluene | ug/L | 1.0 U |
| 2,4-Dinitrotoluene | ug/L | 2.0 U |
| 2,6-Dinitrotoluene | ug/L | 1.0 U |
| 2-Amino-4,6-dinitrotoluene | ug/L | 1.0 U |
| 2-Nitrotoluene | ug/L | 2.0 U |
| 3,5-Dinitroaniline | ug/L | 1.0 U |
| 3-Nitrotoluene | ug/L | 0.80 U |
| 4-Amino-2,6-Dinitrotoluene | ug/L | 1.0 U |
| 4-Nitrotoluene | ug/L | 1.0 U |
| Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) | ug/L | 1.0 U |
| Nitrobenzene | ug/L | 0.80 U |
| Nitroglycerin | ug/L | 8.0 U |
| Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX) | ug/L | 1.0 U |
| Pentaerythritol Tetranitrate | ug/L | 12 U |
| Tetryl | ug/L | 1.0 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control



CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| **Site Name: Site 83** | |
|---|---|
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Gasoline** | **Units** | |
|---|---|---|
| Gasoline Components | ug/L | **26 J** |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control
gas.xls

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| **Site Name: Site 83** | |
|---|---|
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Mercury Water** | **Units** | |
|---|---|---|
| Mercury | ug/L | 0.12 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
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UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **ICP Metals** | **Units** | |
|---|---|---|
| Aluminum | ug/L | 36 U |
| Antimony | ug/L | 12 U |
| Arsenic | ug/L | 24 U |
| Barium | ug/L | 1.8 U |
| Beryllium | ug/L | 0.60 U |
| Cadmium | ug/L | 2.0 U |
| Calcium | ug/L | 100 U |
| Chromium | ug/L | 4.0 U |
| Cobalt | ug/L | 4.0 U |
| Copper | ug/L | 7.0 U |
| Iron | ug/L | 100 U |
| Lead | ug/L | 4.0 U |
| Magnesium | ug/L | 40 U |
| Manganese | ug/L | 4.0 U |
| Nickel | ug/L | 6.0 U |
| Potassium | ug/L | 500 U |
| Selenium | ug/L | 13 U |
| Silver | ug/L | **0.77 J** |
| Sodium | ug/L | 600 U |
| Thallium | ug/L | 15 U |
| Vanadium | ug/L | 5.0 U |
| Zinc | ug/L | 10 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Nitrocellulose** | **Units** | |
|---|---|---|
| Nitrocellulose | mg/L | 1.1U |

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Nitroguanidine** | **Units** | |
|---|---|---|
| NITROGUANIDINE | ug/L | 120 UJ |

Notes:
J = Detected, Estimated
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UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **SemiVolatiles SIM** | **Units** | |
|---|---|---|
| 2-Methylnaphthalene | ug/L | 0.076 U |
| Acenaphthene | ug/L | 0.076 U |
| Acenaphthylene | ug/L | 0.076 U |
| Anthracene | ug/L | 0.076 U |
| Benzo(a)anthracene | ug/L | 0.076 U |
| Benzo(a)pyrene | ug/L | 0.076 U |
| Benzo(b)fluoranthene | ug/L | 0.076 U |
| Benzo(g,h,i)perylene | ug/L | 0.076 U |
| Benzo(k)fluoranthene | ug/L | 0.076 U |
| Chrysene | ug/L | 0.076 U |
| Dibenz(a,h)anthracene | ug/L | 0.076 U |
| Fluoranthene | ug/L | 0.076 U |
| Fluorene | ug/L | 0.076 U |
| Indeno(1,2,3-c,d)pyrene | ug/L | 0.076 U |
| Naphthalene | ug/L | 0.076 U |
| Phenanthrene | ug/L | 0.076 U |
| Pyrene | ug/L | 0.076 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| **Polychlorinated Biphenyls** | **Units** | |
|---|---|---|
| PCB-1016 (Arochlor 1016) | ug/L | 1.0 U |
| PCB-1221 (Arochlor 1221) | ug/L | 1.0 U |
| PCB-1232 (Arochlor 1232) | ug/L | 1.0 U |
| PCB-1242 (Arochlor 1242) | ug/L | 1.0 U |
| PCB-1248 (Arochlor 1248) | ug/L | 1.0 U |
| PCB-1254 (Arochlor 1254) | ug/L | 1.0 U |
| PCB-1260 (Arochlor 1260) | ug/L | 1.0 U |
| PCB-1262 (Arochlor 1262) | ug/L | 1.0 U |
| PCB-1268 (Arochlor 1268) | ug/L | 1.0 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control
pcb.xls

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| Organochlorine Pesticides | Units | |
|---|---|---|
| Aldrin | ug/L | 0.024 U |
| alpha-BHC (alpha-Hexachlorocyclohexane) | ug/L | 0.024 U |
| alpha-Chlordane | ug/L | 0.040 U |
| alpha-Endosulfan | ug/L | 0.040 U |
| beta-BHC (beta-Hexachlorocyclohexane) | ug/L | 0.040 U |
| beta-Endosulfan | ug/L | 0.024 U |
| delta-BHC (delta-Hexachlorocyclohexane) | ug/L | 0.024 U |
| Dieldrin | ug/L | 0.024 U |
| Endosulfan Sulfate | ug/L | 0.024 U |
| Endrin | ug/L | 0.024 U |
| Endrin Aldehyde | ug/L | 0.040 U |
| Endrin Ketone | ug/L | 0.024 U |
| gamma-BHC (Lindane) | ug/L | 0.024 U |
| gamma-Chlordane | ug/L | 0.024 U |
| Heptachlor | ug/L | 0.024 U |
| Heptachlor Epoxide | ug/L | 0.024 U |
| Methoxychlor | ug/L | 0.040 U |
| p,p'-DDD | ug/L | 0.024 U |
| p,p'-DDE | ug/L | 0.040 U |
| p,p'-DDT | ug/L | 0.024 U |
| Toxaphene | ug/L | 0.60 U |

Notes:
J = Detected, Estimated
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U = Not Detected
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QC = Quality Control

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UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event

Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| SemiVolatiles | Units | |
|---|---|---|
| 1,2,4-Trichlorobenzene | ug/L | 1.0 UJ |
| 1,2-Dichlorobenzene | ug/L | 1.0 UJ |
| 1,3-Dichlorobenzene | ug/L | 1.0 UJ |
| 1,4-Dichlorobenzene | ug/L | 1.0 UJ |
| 2,2'-Oxybis(1-chloro)propane | ug/L | 1.0 UJ |
| 2,4,5-Trichlorophenol | ug/L | 5.1 UJ |
| 2,4,6-Trichlorophenol | ug/L | 5.1 UJ |
| 2,4-Dichlorophenol | ug/L | 5.1 UJ |
| 2,4-Dimethylphenol | ug/L | 5.1 UJ |
| 2,4-Dinitrophenol | ug/L | 6.1 UJ |
| 2,4-Dinitrotoluene | ug/L | 1.0 UJ |
| 2,6-Dinitrotoluene | ug/L | 1.0 UJ |
| 2-Chloronaphthalene | ug/L | 1.0 UJ |
| 2-Chlorophenol | ug/L | 5.1 UJ |
| 2-Methylphenol (o-Cresol) | ug/L | 5.1 UJ |
| 2-Nitroaniline | ug/L | 1.0 UJ |
| 2-Nitrophenol | ug/L | 5.1 UJ |
| 3,3'-Dichlorobenzidine | ug/L | 2.5 UJ |
| 3-Nitroaniline | ug/L | 1.0 UJ |
| 4,6-Dinitro-2-Methylphenol | ug/L | 6.1 UJ |
| 4-Bromophenyl phenyl ether | ug/L | 1.0 UJ |
| 4-Chloro-3-Methylphenol | ug/L | 5.1 UJ |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control



CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

**Equipment Blank Results**

Summer 2013 RI/SI Sampling Event Sampling Event

Ravenna Army Ammunition Plant

| | | |
|---|---|---|
| 4-Chloroaniline | ug/L | 1.0 UJ |
| 4-Chlorophenyl Phenyl Ether | ug/L | 1.0 UJ |
| 4-Nitroaniline | ug/L | 1.0 UJ |
| 4-Nitrophenol | ug/L | 5.1 UJ |
| Benzoic acid | ug/L | 76 UJ |
| Benzyl alcohol | ug/L | 3.0 UJ |
| Benzyl butyl phthalate | ug/L | 3.0 UJ |
| bis(2-Chloroethoxy) Methane | ug/L | 1.0 UJ |
| bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) | ug/L | 1.0 UJ |
| Carbazole | ug/L | 1.0 UJ |
| Cresols, m & p | ug/L | 9.1 UJ |
| Dibenzofuran | ug/L | 1.0 UJ |
| Diethyl Phthalate | ug/L | 3.0 UJ |
| Dimethyl Phthalate | ug/L | 3.0 UJ |
| Di-n-Butyl Phthalate | ug/L | 3.0 UJ |
| Di-n-Octylphthalate | ug/L | 3.0 UJ |
| Hexachlorobenzene | ug/L | 1.0 UJ |
| Hexachlorobutadiene | ug/L | 1.0 UJ |
| Hexachlorocyclopentadiene | ug/L | 1.2 UJ |
| Hexachloroethane | ug/L | 1.2 UJ |
| Isophorone | ug/L | 1.0 UJ |
| Nitrobenzene | ug/L | 1.0 UJ |
| n-Nitrosodi-n-propylamine | ug/L | 1.0 UJ |
| n-Nitrosodiphenylamine | ug/L | 2.0 UJ |
| Pentachlorophenol | ug/L | 5.1 UJ |
| Phenol | ug/L | 5.1 UJ |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control



CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event

Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| NDMA | Units | |
|---|---|---|
| 1,2,4-Trichlorobenzene | ug/L | 1.0 UJ |
| 1,2-Dichlorobenzene | ug/L | 1.0 UJ |
| 1,3-Dichlorobenzene | ug/L | 1.0 UJ |
| 1,4-Dichlorobenzene | ug/L | 1.0 UJ |
| 2,2'-Oxybis(1-chloro)propane | ug/L | 1.0 UJ |
| 2,4,5-Trichlorophenol | ug/L | 5.1 UJ |
| 2,4,6-Trichlorophenol | ug/L | 5.1 UJ |
| 2,4-Dichlorophenol | ug/L | 5.1 UJ |
| 2,4-Dimethylphenol | ug/L | 5.1 UJ |
| 2,4-Dinitrophenol | ug/L | 6.1 UJ |
| 2,4-Dinitrotoluene | ug/L | 1.0 UJ |
| 2,6-Dinitrotoluene | ug/L | 1.0 UJ |
| 2-Chloronaphthalene | ug/L | 1.0 UJ |
| 2-Chlorophenol | ug/L | 5.1 UJ |
| 2-Methylphenol (o-Cresol) | ug/L | 5.1 UJ |
| 2-Nitroaniline | ug/L | 1.0 UJ |
| 2-Nitrophenol | ug/L | 5.1 UJ |
| 3,3'-Dichlorobenzidine | ug/L | 2.5 UJ |
| 3-Nitroaniline | ug/L | 1.0 UJ |
| 4,6-Dinitro-2-Methylphenol | ug/L | 6.1 UJ |
| 4-Bromophenyl phenyl ether | ug/L | 1.0 UJ |
| 4-Chloro-3-Methylphenol | ug/L | 5.1 UJ |
| 4-Chloroaniline | ug/L | 1.0 UJ |
| 4-Chlorophenyl Phenyl Ether | ug/L | 1.0 UJ |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control



CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

**Equipment Blank Results**

Summer 2013 RI/SI Sampling Event Sampling Event

Ravenna Army Ammunition Plant

| | | |
|---|---|---|
| 4-Nitroaniline | ug/L | 1.0 UJ |
| 4-Nitrophenol | ug/L | 5.1 UJ |
| Benzoic acid | ug/L | 76 UJ |
| Benzyl alcohol | ug/L | 3.0 UJ |
| Benzyl butyl phthalate | ug/L | 3.0 UJ |
| bis(2-Chloroethoxy) Methane | ug/L | 1.0 UJ |
| bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) | ug/L | 1.0 UJ |
| Carbazole | ug/L | 1.0 UJ |
| Cresols, m & p | ug/L | 9.1 UJ |
| Dibenzofuran | ug/L | 1.0 UJ |
| Diethyl Phthalate | ug/L | 3.0 UJ |
| Dimethyl Phthalate | ug/L | 3.0 UJ |
| Di-n-Butyl Phthalate | ug/L | 3.0 UJ |
| Di-n-Octylphthalate | ug/L | 3.0 UJ |
| Hexachlorobenzene | ug/L | 1.0 UJ |
| Hexachlorobutadiene | ug/L | 1.0 UJ |
| Hexachlorocyclopentadiene | ug/L | 1.2 UJ |
| Hexachloroethane | ug/L | 1.2 UJ |
| Isophorone | ug/L | 1.0 UJ |
| Nitrobenzene | ug/L | 1.0 UJ |
| n-Nitrosodi-n-propylamine | ug/L | 1.0 UJ |
| n-Nitrosodiphenylamine | ug/L | 2.0 UJ |
| Pentachlorophenol | ug/L | 5.1 UJ |
| Phenol | ug/L | 5.1 UJ |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control



CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

## Equipment Blank Results

Summer 2013 RI/SI Sampling Event Sampling Event
Ravenna Army Ammunition Plant

| | |
|---|---|
| **Site Name: Site 83** | |
| **Field Sample ID:** | 083SB-0023-0001-ER |
| **Lab Sample ID:** | 339561 |
| **Lab Name:** | CTLB |
| **Sample Date:** | 8/15/2013 |
| **Field QC:** | ER-4 (Equipment Blank) |
| **Analysis Information:** | 1X |

| VOCs | Units | |
|---|---|---|
| 1,1,1-Trichloroethane | ug/L | 0.50 U |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.50 U |
| 1,1,2-Trichloroethane | ug/L | 1.0 U |
| 1,1-Dichloroethane | ug/L | 0.50 U |
| 1,1-Dichloroethene | ug/L | 0.50 U |
| 1,2-Dibromoethane (EDB) | ug/L | 0.50 U |
| 1,2-Dichloroethane | ug/L | 1.0 U |
| 1,2-Dichloroethene | ug/L | 0.50 U |
| 1,2-Dichloropropane | ug/L | 0.50 U |
| 2-Butanone (MEK) | ug/L | 5.0 U |
| 2-Hexanone | ug/L | 10 U |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 U |
| Acetone | ug/L | 10 U |
| Benzene | ug/L | 0.50 U |
| Bromochloromethane | ug/L | 0.50 U |
| Bromodichloromethane | ug/L | 0.50 U |
| Bromoform | ug/L | 0.50 U |
| Bromomethane | ug/L | 1.0 U |
| Carbon Disulfide | ug/L | 1.0 U |
| Carbon Tetrachloride | ug/L | 0.50 U |
| Chlorobenzene | ug/L | 0.50 U |
| Chloroethane | ug/L | 1.0 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

**Equipment Blank Results**

Summer 2013 RI/SI Sampling Event Sampling Event

Ravenna Army Ammunition Plant

| | | |
|---|---|---|
| Chloroform | ug/L | **0.37 J** |
| Chloromethane | ug/L | 1.0 U |
| cis-1,2-Dichloroethylene | ug/L | 0.50 U |
| cis-1,3-Dichloropropene | ug/L | 0.50 U |
| Dibromochloromethane | ug/L | 0.50 U |
| Ethylbenzene | ug/L | 0.50 U |
| m,p-Xylene | ug/L | 1.0 U |
| Methylene Chloride | ug/L | 2.0 U |
| o-Xylene | ug/L | 0.50 U |
| Styrene | ug/L | 0.50 U |
| tert-Butyl Methyl Ether (MTBE) | ug/L | 1.0 U |
| Tetrachloroethene (PCE) | ug/L | 1.0 U |
| Toluene | ug/L | 0.50 U |
| trans-1,2-Dichloroethene | ug/L | 0.50 U |
| trans-1,3-Dichloropropene | ug/L | 0.50 U |
| Trichloroethene (TCE) | ug/L | 0.50 U |
| Vinyl Chloride | ug/L | 0.50 U |
| Xylenes, Total | ug/L | 1.0 U |

Notes:
J = Detected, Estimated
UJ = Not Detected, Estimated
U = Not Detected
ID = Identification
QC = Quality Control

CTLB = CT LABS., BARABOO, WI
UG/L = Micrograms per Liter

# ATTACHMENT B

## Source Water

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**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |

Volatile Organic Compounds by Capillary GC/MS

| | |
|---|---|
| 1,1,1-Trichloroethane (UG/L) | 1.0 U |
| 1,1,2,2-Tetrachloroethane (UG/L) | 1.0 U |
| 1,1,2-Trichloroethane (UG/L) | 1.0 U |
| 1,1-Dichloroethane (UG/L) | 1.0 U |
| 1,1-Dichloroethene (UG/L) | 1.0 U |
| 1,2-Dibromoethane (EDB) (UG/L) | 1.0 U |
| 1,2-Dichloroethane (UG/L) | 1.0 U |
| 1,2-Dichloroethene (UG/L) | 2.0 U |
| 1,2-Dichloropropane (UG/L) | 1.0 U |
| 2-Butanone (MEK) (UG/L) | 10.0 U |
| 2-Hexanone (UG/L) | 10.0 U |
| 4-Methyl-2-pentanone (MIBK) (UG/L) | 10.0 U |
| Acetone (UG/L) | 10.0 U |
| Benzene (UG/L) | 1.0 U |
| Bromochloromethane (UG/L) | 1.0 U |
| Bromodichloromethane (UG/L) | 1.0 U |
| Bromoform (UG/L) | 1.0 U |
| Bromomethane (UG/L) | 1.0 U |
| Carbon Disulfide (UG/L) | 1.0 U |
| Carbon Tetrachloride (UG/L) | 1.0 U |
| Chlorobenzene (UG/L) | 1.0 U |
| Chloroethane (UG/L) | 1.0 U |
| Chloroform (UG/L) | 1.0 U |
| Chloromethane (UG/L) | 1.0 U |
| cis-1,3-Dichloropropene (UG/L) | 1.0 U |
| Dibromochloromethane (UG/L) | 1.0 U |
| Ethylbenzene (UG/L) | 1.0 U |
| Methylene Chloride (UG/L) | 1.0 U |
| Styrene (UG/L) | 1.0 U |
| tert-Butyl Methyl Ether (MTBE) (UG/L) | 1.0 U |
| Tetrachloroethene (PCE) (UG/L) | 1.0 U |
| Toluene (UG/L) | 1.0 U |
| trans-1,3-Dichloropropene (UG/L) | 1.0 U |
| Trichloroethene (TCE) (UG/L) | 1.0 U |
| Vinyl Chloride (UG/L) | 1.0 U |
| Xylenes, Total (UG/L) | 2.0 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Semivolatile Organic Compounds by Capillary GC/MS | |
| 1,2,4-Trichlorobenzene (UG/L) | 0.95 U |
| 1,2-Dichlorobenzene (UG/L) | 0.95 U |
| 1,3-Dichlorobenzene (UG/L) | 0.95 U |
| 1,4-Dichlorobenzene (UG/L) | 0.95 U |
| 2,4,5-Trichlorophenol (UG/L) | 4.8 U |
| 2,4,6-Trichlorophenol (UG/L) | 4.8 U |
| 2,4-Dichlorophenol (UG/L) | 1.9 U |
| 2,4-Dimethylphenol (UG/L) | 1.9 U |
| 2,4-Dinitrophenol (UG/L) | 4.8 U |
| 2,4-Dinitrotoluene (UG/L) | 4.8 U |
| 2,6-Dinitrotoluene (UG/L) | 4.8 U |
| 2-Chloronaphthalene (UG/L) | 0.95 U |
| 2-Chlorophenol (UG/L) | 0.95 U |
| 2-Methylnaphthalene (UG/L) | 0.19 U |
| 2-Methylphenol (o-Cresol) (UG/L) | 0.95 U |
| 2-Nitroaniline (UG/L) | 1.9 U |
| 2-Nitrophenol (UG/L) | 1.9 U |
| 3,3'-Dichlorobenzidine (UG/L) | 4.8 U |
| 3-Nitroaniline (UG/L) | 1.9 U |
| 4,6-Dinitro-2-Methylphenol (UG/L) | 4.8 U |
| 4-Bromophenyl phenyl ether (UG/L) | 1.9 U |
| 4-Chloro-3-Methylphenol (UG/L) | 1.9 U |
| 4-Chloroaniline (UG/L) | 1.9 U |
| 4-Chlorophenyl Phenyl Ether (UG/L) | 1.9 U |
| 4-Nitroaniline (UG/L) | 1.9 U |
| 4-Nitrophenol (UG/L) | 4.8 U |
| Acenaphthene (UG/L) | 0.19 U |
| Acenaphthylene (UG/L) | 0.19 U |
| Anthracene (UG/L) | 0.19 U |
| Benzo(a)anthracene (UG/L) | 0.19 U |
| Benzo(a)pyrene (UG/L) | 0.19 U |
| Benzo(b)fluoranthene (UG/L) | 0.19 U |
| Benzo(g,h,i)perylene (UG/L) | 0.19 U |
| Benzo(k)fluoranthene (UG/L) | 0.19 U |
| Benzoic acid (UG/L) | 24.0 U |
| Benzyl alcohol (UG/L) | 4.8 U |
| Benzyl butyl phthalate (UG/L) | 0.95 U |
| bis(2-Chloroethoxy) Methane (UG/L) | 0.95 U |
| bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) (UG/L) | 0.95 U |
| bis(2-Chloroisopropyl) Ether (UG/L) | 0.95 U |
| bis(2-Ethylhexyl) Phthalate (UG/L) | 1.9 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |

| | |
|---|---|
| Carbazole (UG/L) | 0.95 U |
| Chrysene (UG/L) | 0.19 U |
| Cresols, m & p (UG/L) | 1.9 U |
| Dibenz(a,h)anthracene (UG/L) | 0.19 U |
| Dibenzofuran (UG/L) | 0.95 U |
| Diethyl Phthalate (UG/L) | 0.95 U |
| Dimethyl Phthalate (UG/L) | 0.95 U |
| Di-n-Butyl Phthalate (UG/L) | 0.95 U |
| Di-n-Octylphthalate (UG/L) | 0.95 U |
| Fluoranthene (UG/L) | 0.19 U |
| Fluorene (UG/L) | 0.19 U |
| Hexachlorobenzene (UG/L) | 0.19 U |
| Hexachlorobutadiene (UG/L) | 0.95 U |
| Hexachlorocyclopentadiene (UG/L) | 9.5 U |
| Hexachloroethane (UG/L) | 0.95 U |
| Indeno(1,2,3-c,d)pyrene (UG/L) | 0.19 U |
| Isophorone (UG/L) | 0.95 U |
| Naphthalene (UG/L) | 0.19 U |
| Nitrobenzene (UG/L) | 0.95 U |
| n-Nitrosodi-n-propylamine (UG/L) | 0.95 U |
| n-Nitrosodiphenylamine (UG/L) | 0.95 U |
| Pentachlorophenol (UG/L) | 4.8 U |
| Phenanthrene (UG/L) | 0.19 U |
| Phenol (UG/L) | 0.95 U |
| Pyrene (UG/L) | 0.19 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Trace Metals by Inductively Coupled Plasma/Mass Spectrometry | |
| Aluminum (UG/L) | **13.0 J** |
| Antimony (UG/L) | 2.0 U |
| Arsenic (UG/L) | **0.49 J** |
| Barium (UG/L) | **39.0** |
| Beryllium (UG/L) | 1.0 U |
| Cadmium (UG/L) | 1.0 U |
| Calcium (UG/L) | **66000** |
| Chromium (UG/L) | 2.0 U |
| Cobalt (UG/L) | **0.11 J** |
| Copper (UG/L) | **0.83 J** |
| Iron (UG/L) | **440** |
| Lead (UG/L) | 1.0 U |
| Magnesium (UG/L) | **27000** |
| Manganese (UG/L) | **77.0** |
| Nickel (UG/L) | 1.0 U |
| Potassium (UG/L) | **2500** |
| Selenium (UG/L) | 5.0 U |
| Silver (UG/L) | 1.0 U |
| Sodium (UG/L) | **35000** |
| Thallium (UG/L) | 1.0 U |
| Vanadium (UG/L) | 1.0 U |
| Zinc (UG/L) | **18.0** |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Mercury in Water (Manual Cold-Vapor Techique) | |
| Mercury (UG/L) | 0.20 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Modified SW8015 for the Determination of Gasoline Range Organics in Soil and Water, GC/FID | |
| Petroleum Hydrocarbons C6-C12 (UG/L) | **39.0 J** |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Modified SW8015 for the Determination of Diesel Range Organics in Soil and Water, GC/FID | |
| C10-C20 Diesel Range Organics (UG/L) | 480 U |
| C20-C34 Motor Oil Range Organics (UG/L) | 480 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Polychlorinated Biphenyls (PCB) by Capillary GC | |
| PCB-1016 (Arochlor 1016) (UG/L) | 0.48 U |
| PCB-1221 (Arochlor 1221) (UG/L) | 0.48 U |
| PCB-1232 (Arochlor 1232) (UG/L) | 0.48 U |
| PCB-1242 (Arochlor 1242) (UG/L) | 0.48 U |
| PCB-1248 (Arochlor 1248) (UG/L) | 0.48 U |
| PCB-1254 (Arochlor 1254) (UG/L) | 0.48 U |
| PCB-1260 (Arochlor 1260) (UG/L) | 0.48 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Organochlorine Pesticides by Capillary GC | |
| Aldrin (UG/L) | 0.048 U |
| alpha-BHC (alpha-Hexachlorocyclohexane) | 0.048 U |
| alpha-Chlordane (UG/L) | 0.048 U |
| alpha-Endosulfan (UG/L) | 0.048 U |
| beta-BHC (beta-Hexachlorocyclohexane) (UG/L) | 0.048 U |
| beta-Endosulfan (UG/L) | 0.048 U |
| delta-BHC (delta-Hexachlorocyclohexane) (UG/L) | 0.048 U |
| Dieldrin (UG/L) | 0.048 U |
| Endosulfan Sulfate (UG/L) | 0.048 U |
| Endrin (UG/L) | 0.048 U |
| Endrin Aldehyde (UG/L) | 0.048 U |
| Endrin Ketone (UG/L) | 0.048 U |
| gamma-BHC (Lindane) (UG/L) | 0.048 U |
| gamma-Chlordane (UG/L) | 0.048 U |
| Heptachlor (UG/L) | 0.048 U |
| Heptachlor Epoxide (UG/L) | 0.048 U |
| Methoxychlor (UG/L) | 0.095 U |
| p,p'-DDD (UG/L) | 0.048 U |
| p,p'-DDE (UG/L) | 0.048 U |
| p,p'-DDT (UG/L) | 0.048 U |
| Toxaphene (UG/L) | 1.9 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzylation Derivatization: Capillary Column Technique | |
| 2,4 DB (UG/L) | 4.0 U |
| 2,4,5-T (Trichlorophenoxyacetic Acid) (UG/L) | 1.0 U |
| 2,4-D (Dichlorophenoxyacetic Acid) (UG/L) | 4.0 U |
| Dalapon (UG/L) | 2.0 U |
| Dicamba (UG/L) | 2.0 U |
| Dichloroprop (UG/L) | 4.0 U |
| Dinoseb (UG/L) | 0.60 U |
| MCPA (UG/L) | 400 U |
| MCPP (UG/L) | 400 U |
| Pentachlorophenol (UG/L) | 0.10 U |
| Silvex (2,4,5-TP) (UG/L) | 1.0 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Nitroaromatics and Nitramines by HPLC | |
| 1,3,5-Trinitrobenzene (UG/L) | 0.10 U |
| 1,3-Dinitrobenzene (UG/L) | 0.10 U |
| 2,4,6-Trinitrotoluene (UG/L) | 0.10 U |
| 2,4-Dinitrotoluene (UG/L) | 0.10 U |
| 2,6-Dinitrotoluene (UG/L) | 0.10 U |
| 2-Amino-4,6-dinitrotoluene (UG/L) | 0.20 U |
| 2-Nitrotoluene (UG/L) | 0.50 U |
| 3-Nitrotoluene (UG/L) | 0.50 U |
| 4-Amino-2,6-Dinitrotoluene (UG/L) | 0.10 U |
| 4-Nitrotoluene (UG/L) | 0.50 U |
| Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) | 0.10 U |
| Nitrobenzene (UG/L) | 0.10 U |
| Nitroglycerin (UG/L) | 0.65 U |
| NITROGUANIDINE (UG/L) | 20.0 U |
| Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine | 0.10 U |
| Pentaerythritol Tetranitrate (UG/L) | 0.65 U |
| Tetryl (UG/L) | 0.10 U |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-1 |
|---|---|
| Field Sample ID: | 070-0056-0001-SOURCE WATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 12/12/2012 |
| Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction) | |
| Nitrocellulose (MG/L) | 2.0 U |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 0 |
| Sample End Depth: | 0 |
| Sample Date: | 03/14/2013 |
| Volatile Organic Compounds by Capillary GC/MS | |
| 1,1,1-Trichloroethane (UG/L) | 1.0 U |
| 1,1,2,2-Tetrachloroethane (UG/L) | 1.0 U |
| 1,1,2-Trichloroethane (UG/L) | 1.0 U |
| 1,1-Dichloroethane (UG/L) | 1.0 U |
| 1,1-Dichloroethene (UG/L) | 1.0 U |
| 1,2-Dibromoethane (EDB) (UG/L) | 1.0 U |
| 1,2-Dichloroethane (UG/L) | 1.0 U |
| 1,2-Dichloroethene (UG/L) | 2.0 U |
| 1,2-Dichloropropane (UG/L) | 1.0 U |
| 2-Butanone (MEK) (UG/L) | 10.0 U |
| 2-Hexanone (UG/L) | 10.0 U |
| 4-Methyl-2-pentanone (MIBK) (UG/L) | 10.0 U |
| Acetone (UG/L) | 10.0 U |
| Benzene (UG/L) | 1.0 U |
| Bromochloromethane (UG/L) | 1.0 U |
| Bromodichloromethane (UG/L) | 1.0 U |
| Bromoform (UG/L) | 1.0 U |
| Bromomethane (UG/L) | 1.0 U |
| Carbon Disulfide (UG/L) | 1.0 U |
| Carbon Tetrachloride (UG/L) | 1.0 UJ |
| Chlorobenzene (UG/L) | 1.0 U |
| Chloroethane (UG/L) | 1.0 U |
| Chloroform (UG/L) | 1.0 U |
| Chloromethane (UG/L) | 1.0 U |
| cis-1,3-Dichloropropene (UG/L) | 1.0 U |
| Dibromochloromethane (UG/L) | 1.0 U |
| Ethylbenzene (UG/L) | 1.0 U |
| Methylene Chloride (UG/L) | 1.0 U |
| Styrene (UG/L) | 1.0 U |
| tert-Butyl Methyl Ether (MTBE) (UG/L) | 1.0 U |
| Tetrachloroethene (PCE) (UG/L) | 1.0 U |
| Toluene (UG/L) | 1.0 U |
| trans-1,3-Dichloropropene (UG/L) | 1.0 U |
| Trichloroethene (TCE) (UG/L) | 1.0 U |
| Vinyl Chloride (UG/L) | 1.0 U |
| Xylenes, Total (UG/L) | 2.0 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Semivolatile Organic Compounds by Capillary GC/MS | |
| 1,2,4-Trichlorobenzene (UG/L) | 1.0 U |
| 1,2-Dichlorobenzene (UG/L) | 1.0 U |
| 1,3-Dichlorobenzene (UG/L) | 1.0 U |
| 1,4-Dichlorobenzene (UG/L) | 1.0 U |
| 2,4,5-Trichlorophenol (UG/L) | 5.1 U |
| 2,4,6-Trichlorophenol (UG/L) | 5.1 U |
| 2,4-Dichlorophenol (UG/L) | 2.0 U |
| 2,4-Dimethylphenol (UG/L) | 2.0 UJ |
| 2,4-Dinitrophenol (UG/L) | 5.1 UJ |
| 2,4-Dinitrotoluene (UG/L) | 5.1 U |
| 2,6-Dinitrotoluene (UG/L) | 5.1 U |
| 2-Chloronaphthalene (UG/L) | 1.0 U |
| 2-Chlorophenol (UG/L) | 1.0 UJ |
| 2-Methylnaphthalene (UG/L) | 0.20 U |
| 2-Methylphenol (o-Cresol) (UG/L) | 1.0 UJ |
| 2-Nitroaniline (UG/L) | 2.0 U |
| 2-Nitrophenol (UG/L) | 2.0 UJ |
| 3,3'-Dichlorobenzidine (UG/L) | 5.1 UJ |
| 3-Nitroaniline (UG/L) | 2.0 U |
| 4,6-Dinitro-2-Methylphenol (UG/L) | 5.1 UJ |
| 4-Bromophenyl phenyl ether (UG/L) | 2.0 U |
| 4-Chloro-3-Methylphenol (UG/L) | 2.0 U |
| 4-Chloroaniline (UG/L) | 2.0 U |
| 4-Chlorophenyl Phenyl Ether (UG/L) | 2.0 U |
| 4-Nitroaniline (UG/L) | 2.0 UJ |
| 4-Nitrophenol (UG/L) | 5.1 UJ |
| Acenaphthene (UG/L) | 0.20 U |
| Acenaphthylene (UG/L) | 0.20 U |
| Anthracene (UG/L) | 0.20 U |
| Benzo(a)anthracene (UG/L) | 0.20 U |
| Benzo(a)pyrene (UG/L) | 0.20 U |
| Benzo(b)fluoranthene (UG/L) | 0.20 U |
| Benzo(g,h,i)perylene (UG/L) | 0.20 U |
| Benzo(k)fluoranthene (UG/L) | 0.20 U |
| Benzoic acid (UG/L) | 25.0 U |
| Benzyl alcohol (UG/L) | 5.1 U |
| Benzyl butyl phthalate (UG/L) | 1.0 U |
| bis(2-Chloroethoxy) Methane (UG/L) | 1.0 U |
| bis(2-Chloroethyl) Ether (2-Chloroethyl Ether) | 1.0 U |
| bis(2-Chloroisopropyl) Ether (UG/L) | 1.0 U |
| bis(2-Ethylhexyl) Phthalate (UG/L) | 2.0 U |
| Carbazole (UG/L) | 1.0 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Semivolatile Organic Compounds by Capillary GC/MS | |
| Chrysene (UG/L) | 0.20 U |
| Cresols, m & p (UG/L) | 2.0 U |
| Dibenz(a,h)anthracene (UG/L) | 0.20 U |
| Dibenzofuran (UG/L) | 1.0 U |
| Diethyl Phthalate (UG/L) | 1.0 U |
| Dimethyl Phthalate (UG/L) | 1.0 U |
| Di-n-Butyl Phthalate (UG/L) | 1.0 U |
| Di-n-Octylphthalate (UG/L) | 1.0 U |
| Fluoranthene (UG/L) | 0.20 U |
| Fluorene (UG/L) | 0.20 U |
| Hexachlorobenzene (UG/L) | 0.20 U |
| Hexachlorobutadiene (UG/L) | 1.0 U |
| Hexachlorocyclopentadiene (UG/L) | 10.0 U |
| Hexachloroethane (UG/L) | 1.0 U |
| Indeno(1,2,3-c,d)pyrene (UG/L) | 0.20 U |
| Isophorone (UG/L) | 1.0 U |
| Naphthalene (UG/L) | 0.20 U |
| Nitrobenzene (UG/L) | 1.0 U |
| n-Nitrosodi-n-propylamine (UG/L) | 1.0 U |
| n-Nitrosodiphenylamine (UG/L) | 1.0 UJ |
| Pentachlorophenol (UG/L) | 5.1 UJ |
| Phenanthrene (UG/L) | 0.20 U |
| Phenol (UG/L) | 1.0 UJ |
| Pyrene (UG/L) | 0.20 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Modified SW8015 for the Determination of Gasoline Range Organics in Soil and Water, GC/FID | |
| Petroleum Hydrocarbons C6-C12 (UG/L) | 100 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Modified SW8015 for the Determination of Diesel Range Organics in Soil and Water, GC/FID | |
| C10-C20 Diesel Range Organics (UG/L) | 490 U |
| C20-C34 Motor Oil Range Organics (UG/L) | 490 U |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Trace Metals by Inductively Coupled Plasma/Mass Spectrometry | |
| Aluminum (UG/L) | 30.0 U |
| Antimony (UG/L) | 2.0 U |
| Arsenic (UG/L) | **0.48 J** |
| Barium (UG/L) | **41.0** |
| Beryllium (UG/L) | 1.0 U |
| Cadmium (UG/L) | 1.0 U |
| Calcium (UG/L) | **65000** |
| Chromium (UG/L) | **1.3 J** |
| Cobalt (UG/L) | **0.054 J** |
| Copper (UG/L) | 2.0 U |
| Iron (UG/L) | **590** |
| Lead (UG/L) | 1.0 U |
| Magnesium (UG/L) | **27000** |
| Manganese (UG/L) | **94.0** |
| Nickel (UG/L) | 1.0 U |
| Potassium (UG/L) | **2500** |
| Selenium (UG/L) | 5.0 U |
| Silver (UG/L) | 1.0 U |
| Sodium (UG/L) | **37000** |
| Thallium (UG/L) | **0.11 J** |
| Vanadium (UG/L) | 1.0 U |
| Zinc (UG/L) | **5.1** |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Mercury in Water (Manual Cold-Vapor Techique) | |
| Mercury (UG/L) | 0.20 U |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Polychlorinated Biphenyls (PCB) by Capillary GC | |
| PCB-1016 (Arochlor 1016) (UG/L) | 0.50 U |
| PCB-1221 (Arochlor 1221) (UG/L) | 0.50 U |
| PCB-1232 (Arochlor 1232) (UG/L) | 0.50 U |
| PCB-1242 (Arochlor 1242) (UG/L) | 0.50 U |
| PCB-1248 (Arochlor 1248) (UG/L) | 0.50 U |
| PCB-1254 (Arochlor 1254) (UG/L) | 0.50 U |
| PCB-1260 (Arochlor 1260) (UG/L) | 0.50 U |

**ECC**
**Chemistry Results**
Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012
Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Organochlorine Pesticides by Capillary GC | |
| Aldrin (UG/L) | 0.050 U |
| alpha-BHC (alpha-Hexachlorocyclohexane) | 0.050 U |
| alpha-Chlordane (UG/L) | 0.050 U |
| alpha-Endosulfan (UG/L) | 0.050 U |
| beta-BHC (beta-Hexachlorocyclohexane) (UG/L) | 0.050 U |
| beta-Endosulfan (UG/L) | 0.050 U |
| delta-BHC (delta-Hexachlorocyclohexane) (UG/L) | 0.050 U |
| Dieldrin (UG/L) | 0.050 U |
| Endosulfan Sulfate (UG/L) | 0.050 U |
| Endrin (UG/L) | 0.050 U |
| Endrin Aldehyde (UG/L) | 0.050 U |
| Endrin Ketone (UG/L) | 0.050 U |
| gamma-BHC (Lindane) (UG/L) | 0.050 U |
| gamma-Chlordane (UG/L) | 0.050 U |
| Heptachlor (UG/L) | 0.050 U |
| Heptachlor Epoxide (UG/L) | 0.050 U |
| Methoxychlor (UG/L) | 0.10 UJ |
| p,p'-DDD (UG/L) | 0.050 U |
| p,p'-DDE (UG/L) | 0.050 U |
| p,p'-DDT (UG/L) | 0.050 U |
| Toxaphene (UG/L) | 2.0 UJ |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzylation Derivatization: Capillary Column Technique | |
| 2,4 DB (UG/L) | 4.0 U |
| 2,4,5-T (Trichlorophenoxyacetic Acid) (UG/L) | 1.0 U |
| 2,4-D (Dichlorophenoxyacetic Acid) (UG/L) | 4.0 U |
| Dalapon (UG/L) | 2.0 U |
| Dicamba (UG/L) | 2.0 U |
| Dichloroprop (UG/L) | 4.0 U |
| Dinoseb (UG/L) | 0.60 U |
| MCPA (UG/L) | 400 UJ |
| MCPP (UG/L) | 400 UJ |
| Pentachlorophenol (UG/L) | 0.10 U |
| Silvex (2,4,5-TP) (UG/L) | 1.0 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Nitroaromatics and Nitramines by HPLC | |
| 1,3,5-Trinitrobenzene (UG/L) | 0.10 U |
| 1,3-Dinitrobenzene (UG/L) | 0.10 U |
| 2,4,6-Trinitrotoluene (UG/L) | 0.10 U |
| 2,4-Dinitrotoluene (UG/L) | 0.10 U |
| 2,6-Dinitrotoluene (UG/L) | 0.10 U |
| 2-Amino-4,6-dinitrotoluene (UG/L) | 0.20 U |
| 2-Nitrotoluene (UG/L) | 0.51 U |
| 3-Nitrotoluene (UG/L) | 0.51 U |
| 4-Amino-2,6-Dinitrotoluene (UG/L) | 0.10 U |
| 4-Nitrotoluene (UG/L) | 0.51 U |
| Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX) | 0.10 U |
| Nitrobenzene (UG/L) | 0.10 U |
| Nitroglycerin (UG/L) | 0.66 U |
| NITROGUANIDINE (UG/L) | 20.0 U |
| Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine | 0.10 U |
| Pentaerythritol Tetranitrate (UG/L) | 0.66 U |
| Tetryl (UG/L) | 0.10 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Chromium, Hexavalent (Colorimetric) | |
| Chromium, Hexavalent (MG/L) | 0.020 U |

**ECC**

**Chemistry Results**

Ravenna Army Ammunition Plant, Quality Assurance Project Plan, Oct. 3, 2012

Ravenna Army Ammunition Plant

| Locations: | SorW-3 |
|---|---|
| Field Sample ID: | 079-0007-0001-SOURCEWATER |
| Sample Begin Depth: | 1 |
| Sample End Depth: | 4 |
| Sample Date: | 03/14/2013 |
| Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction) | |
| Nitrocellulose (MG/L) | 2.0 U |

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