Final

Revised Site Inspection for CC RVAAP-78 Quarry Pond Surface Dump

Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ravenna, Ohio

August 5, 2016



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This Final SI was completed to identify if chemical contamination is present and if present are concentrations great enough to pose potential impacts (adverse effects) to human health and/or the environment. Additional components include a comprehensive historical investigation.

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ARNG—Army National Guard
DERR—Division of Environmental Response and Revitalization
NEDO—Northeast District Office
ILE—Installation, Logistics, and Environment
OHARNG—Ohio Army National Guard
REIMS—Ravenna Environmental Information Management System
RVAAP—Former Ravenna Army Ammunition Plant
USACE—U.S. Army Corps of Engineers

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Containing Material
ADR	Automated Data Review
AOC	Area of Concern
APA	Abbreviated Preliminary Assessment
Bgs	Below Ground Surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chain of Custody
COPC	Chemicals of Potential Concern
CR	Compliance Restoration
CT	QA Lab, CT Laboratories, LLC
CUG	Clean-Up Goal
DFFO	Director's Final Findings and Orders
DOD	Department of Defense
DOT	Department of Transportation
DQO	Data Quality Objective
DVR	Data Validation Report
DVRR	Data Verification Report
EDD	Electronic Data Deliverable
EPA	Environmental Protection Agency
eQAPP	electronic Quality Assurance Project Plan
FBQ	Fuze and Booster Quarry
FSP	Field Sampling Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
GPS	Global Positioning System
HHR	Human Health Receptor
HHRE	Human Health Receptor Exceedance
HRRR	Historical Records Review Report
HTRW	Hazardous, Toxic or Radioactive Waste
IDW	Investigation-Derived Waste
IRP	Installation Restoration Program
ISM	Incremental Sampling Methodology
LCS	Laboratory Control Samples
LDC	Laboratory Data Consultants
MC	Munitions of Concern
MDL	Method Detection Limits
MEC	Munitions of Explosive Concern
MMRP	Military Munitions Response Program
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NCP	National Contingency Plan
ND	Not detected
NGB	National Guard Bureau
NVLAP	National Voluntary Laboratory Accreditation Program
OHARNG	Ohio Army National Guard
OSHA	Occupational Safety & Health Administration

Acronyms and Abbreviations (continued)

PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goals
Prudent	Prudent Technologies, Inc.
QA	Quality Assurance
QC	Quality Control
QAPP	Quality Assurance Project Plan
QSM	Quality Systems Manual
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RL	Reporting Limit
RRSE	Relative Risk Site Evaluation
RSD	Relative Standard Deviation
RSL	Regional Screening Level
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SI	Site Inspection
SOW	Scope of Work
SVOC	Semi-volatile Organic Compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TiF	Tagged Image File
USACE	United States Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion & Preventive Medicine
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WP	Work Plan

EXECUTIVE SUMMARY

This Site Inspection (SI) documents the environmental investigation and results conducted at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio at Compliance Restoration (CR) Site CC (Army Environmental Compliance-Related Cleanup Program) RVAAP-78 Quarry Pond Surface Dump Area of Concern (AOC). The work for this SI was conducted under the U.S. Department of Defense (DOD) Installation Restoration Program (IRP). Prudent Technologies was contracted by the United States Army Corps of Engineers (USACE), Louisville District to complete this SI under Contract No. W912QR-10-P-0052. The original document entitled "Draft Site Inspection (Phase I Remedial Investigation) Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump, Ravenna Army Ammunition Plant, Ravenna, Ohio" was submitted to the Ohio EPA on July 16, 2012. Due to delays in the overall cleanup program and contractual issues at the former RVAAP that were unrelated to Prudent's performance, Prudent Technology could not complete and revise this document before the Contract ended. Therefore, USACE has revised the original draft and completed this document. Previous versions are withdrawn and replaced by this Final Revised SI.

Planning and performance of all elements of this contract are in accordance with the requirements of the *Ohio Environmental Protection Agency (Ohio EPA) Director's Final Findings and Orders (DFFO) for RVAAP*, dated June 10, 2004 (Ohio EPA, 2004). The DFFO requires conformance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP) to complete the SI for AOC CC RVAAP-78.

Environmental work at the former Ravenna Army Ammunition Plant began under the Installation Restoration Program in 1989. Currently, there are 67 Areas of Concern (AOC) and 17 Munitions Response Sites (MRS) located throughout Camp Ravenna Joint Military Training Center (CRJMTC). These AOC and MRS sites were identified by the investigation of historical activities which resulted in the identification of contamination at some sites. Historical activities from former load, assemble, and pack activities related to the Ravenna Army Ammunition Plant and associated support operations are the source of the contamination at the installation. CC RVAAP-78 Quarry Pond Surface Dump is one of the AOCs moving through the CERCLA cleanup process and is discussed herein. Due to the AOC's proximity to the Fuze and Booster Quarry Munitions Response Site, anomaly avoidance procedures were taken as a precaution for the potential of encountering Munitions and Explosives of Concern (MEC).

The site inspection conducted for this site included a comprehensive background historical review, presented in the *Final Historical Records Review Report for 2010 Preliminary Assessment Compliance Restoration Sites CC RVAAP-78 Quarry Surface Dump & CC-RVAAP-80 Group 2 Propellant Can Tops*, dated April 2011, and an initial intrusive CC RVAAP-78 investigation, presented herein, to confirm the presence or absence of contamination (Prudent, 2010). The background historical review was intended to better identify the historic uses and potential environmental concerns at these locations with respect to possible Hazardous, Toxic, and Radioactive Waste (HTRW). The data quality objectives of the Intrusive Investigation of CC RVAAP-78 were as follows:

- Conduct Incremental Sampling Methodology (ISM) sampling of surface soils that produce representative and repeatable data

- Conduct ISM sampling of subsurface soils that produce representative and repeatable data
- Provide sufficient Quality Control (QC)/Quality Assurance (QA) sampling to evaluate the overall quality of both the field and laboratory sampling procedures
- Quantify the amount of asbestos in pieces of transite (and roofing) to guide future investigation/removal activities
- Provide sufficient characterization data for disposal of the two rusted 55-gallon drums according to State of Ohio and Federal regulations
- Provide sufficient data to verify that the two rusted 55-gallon drums were disposed according to State of Ohio and Federal regulations
- Provide sufficient analytical data to identify the presence or determine the absence of contamination.

All data quality objectives were met. Twelve subsurface horizontal soil ISM samples (six at 1' – 3' and six at 3' – 5' below ground surface [bgs]), 36 vertical subsurface soil ISM samples (1' – 5' bgs), seven surface soil ISM samples (five at 0 – 0.8' and two at 0 – 1' bgs), seven discrete volatile organic compounds (VOC) surface soil samples, and four suspect asbestos samples (three transite samples along with one roofing sample) were collected and analyzed. Additionally, four samples extracted from the two 55-gallon drums including two surface composite and two surface discrete samples were collected between November 10 and 11, 2011 by a sampling crew four personnel and one UXO technician.

The initial intrusive investigation at CC RVAAP-78 was conducted in November 2011. The investigation included surface soil ISM sampling at the apparent Burn Area and Debris Piles A, B, and C; subsurface soil ISM sampling at Debris Pile C; and sampling of the contents of the two rusted drums.

Transite was observed in both Debris Piles A and B. The surface soil ISM sampling at the apparent Burn Area and Debris Pile C and the subsurface soil ISM sampling at Debris Pile C, was conducted. Asbestos contents of 30 percent and 40 percent were detected in the transite samples from Debris Piles A and B, respectively, and the roofing sample from Debris Pile B had a level of 35 percent asbestos. All the soil samples were analyzed for asbestos. All the soil samples were non-detect or less than 1 percent asbestos, except for sample C78SB-021M-0001-SO, one of the subsurface soil vertical ISM samples from Debris Pile C, which had a level of 2 percent asbestos.

Sampling of the contents of Drum #1 and Drum #2 took place on November 10, 2011. The material within Drum #1 was described as a black/brown tarry, rubbery substance, and the material within Drum #2 was described as a brown organic material which appeared to be dirt, wood, and a squirrel nest. Toxicity Characteristic Leaching Procedure (TCLP) analyses on samples of the contents from the two drums revealed the contents of Drum #1 to be Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste for lead and the contents of Drum #2 to be non-hazardous. Both drums were removed from the site on February 16, 2012 and disposed of according to state and federal requirements.

The maximum surface and subsurface soil chemical concentrations detected during this sampling were assessed to determine if they were SRCs as well as potential contamination in Section 6 of this SI. The *apparent* Burn Area is within the Debris Pile B. The *apparent* Burn Area is within the Debris Pile B. The apparent Burn Area was not individually assessed to determine if SRCs were present because analytes analyzed for in the soil samples were not detected. Additionally, the concentrations of chemicals in the Debris Pile B were much greater and were therefore included as part of Debris Pile B. The data tables arranged by analysis type for the *apparent* Burn Area are presented in Appendix M.

The determination of whether or not contamination is present, follows a process used on Ravenna to identify site-related chemicals (SRCs). In an SI such as this, the presence of SRCs may be defined as contamination or may be further assessed using a weight-of-evidence approach to ensure that the chemical identified as an SRC is truly contamination and not related to non-anthropogenic activities. The following lists the chemicals identified at the AOC as contamination (based on the maximum value) from each Debris Pile:

- Debris Pile A - Surface Soil (Table 6-1):
    - Explosives/Propellants: 1,3-dinitrobenzene (qualified as a U value - non-detect).
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value) and benzo(a)pyrene.
    - Pesticides/Herbicides, PCBs, and VOCs: none.
- Debris Pile B - Surface Soil (Table 6-2):
    - Metals: arsenic, chromium, and manganese.
    - Explosives/Propellants: 2,4,6-trinitrolouene (qualified as a J value - estimated).
    - SVOCs: 2-methyl-4,6-dinitro.phenol (qualified as a UJ value); bis(2-chloroethyl) ether; benzo(a)pyrene; and hexachloro-cyclopentadiene.
    - PCBs: Aroclor 1254 value was 0.21 mg/kg and screening value is 0.21 mg/kg).
    - Pesticides/Herbicides and VOCs: none.
- Debris Pile C - Surface Soil (Table 6-3):
    - Metals: arsenic, chromium, manganese, and nickel.
    - Explosives/Propellants: none.
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; bis(2-chloroethyl)ether; and hexachlorocyclopentadiene.
    - Pesticides/Herbicides, PCBs, and VOCs: none

- Debris Pile C - Subsurface Soil (Table 6-4):
    - Metals: cadmium and manganese.
    - Explosives/Propellants: none.
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; benzo(b)fluoroanthene; bis (2-chloroethyl)ether; dibenz(a,h) anthracene; N-nitroso-di-n-propylamine; and hexachloro-cyclopentadiene.
    - PCBs: Aroclor 1254.
    - Pesticides/Herbicides and VOCs: none.

Because asbestos and chemical contamination were found in Debris Piles A, B, and C, additional remedial action is warranted. Based on the results of this SI, the AOC should proceed to an RI for further investigation. Additionally, it is recommended that the RI include an additional investigation of the area between Debris Piles A and B and the road adjacent to the east side of the northern-most pond.

1.0 PROJECT DESCRIPTION

1.1 Introduction

This Site Inspection (SI) documents the environmental investigation and results conducted at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio at Compliance Restoration (CR) Site CC (Army Environmental Compliance-Related Cleanup Program) RVAAP-78 Quarry Pond Surface Dump Area of Concern (AOC). The work for this SI was conducted under the U.S. Department of Defense (DOD) Installation Restoration Program (IRP). Prudent Technologies was contracted by the United States Army Corps of Engineers (USACE), Louisville District to complete this SI under Contract No. W912QR-10-P-0052. The original document entitled "Draft Site Inspection (*Phase I Remedial Investigation) Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump, Ravenna Army Ammunition Plant, Ravenna, Ohio*" was submitted to the Ohio EPA on July 16, 2012. Due to delays in the overall cleanup program and contractual issues at the former RVAAP that were unrelated to Prudent's performance, Prudent Technology could not complete and revise this document before the Contract ended. Therefore, USACE has revised and completed this document. Previous versions are withdrawn and replaced by this Final Revised SI.

Planning and performance of all elements of this contract are in accordance with the requirements of the *Ohio Environmental Protection Agency (Ohio EPA) Director's Final Findings and Orders (DFFO) for RVAAP*, dated June 10, 2004 (Ohio EPA, 2004). The DFFO requires conformance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP) to complete the SI for AOC CC RVAAP-78.

1.2 Purpose and Scope

Environmental work at the former Ravenna Army Ammunition Plant began under the Installation Restoration Program in 1989. Currently, there are 67 Areas of Concern (AOC) and 17 Munitions Response Sites (MRS) located throughout CRJMTC. These AOC and MRS sites were identified by the investigation of historical activities which resulted in the identification of contamination at some sites. Historical activities from former load, assemble, and pack activities related to the Ravenna Army Ammunition Plant and associated support operations are the source of the contamination at the installation. The CC RVAAP-78 Quarry Pond Surface Dump is one of the AOCs moving through the CERCLA cleanup process and is discussed herein (Figure 1-2). Due to the AOC's proximity to the Fuze and Booster Quarry Munitions Response Site, anomaly avoidance procedures were taken as a precaution for the potential of encountering Munitions and Explosives of Concern (MEC).

This SI conducted included a comprehensive background historical review and an initial intrusive investigation to confirm the presence or absence of contamination. The background historical review was to follow the guidance and requirements of a CERCLA Abbreviated Preliminary Assessment (APA), US EPA Improving Site Assessment: Abbreviated Preliminary Assessments, October 1999. The background historical review that was presented in the *Final Historical Records Review Report for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump & CC-RVAAP-80 Group 2 Propellant Can Tops, Prudent,*

dated April 2011, identified the historic uses and potential environmental concerns at this site. A brief description and history of CC RVAAP-78 is provided in Section 2.0.

1.3 General Facility Description

The former Ravenna Army Ammunition Plant (RVAAP), now known as the Camp Ravenna Joint Military Training Center (Camp Ravenna), located in northeastern Ohio within Portage and Trumbull counties, is approximately three (3) miles east/northeast of the City of Ravenna and one (1) mile north/northwest of the City of Newton Falls. The facility is approximately 11 miles long and 3.5 miles wide. The facility is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad to the south; Garret, McCormick, and Berry Roads to the west; the Norfolk Southern Railroad to the north; and State Route 534 to the east. In addition, the facility is surrounded by the communities of Windham, Garrettsville, Charlestown, and Wayland.

Administrative accountability for the entire 21,683-acre facility has been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and the property subsequently licensed to the OHARNG for use as a military training site, Camp Ravenna. The RVAAP restoration program involves cleanup of former production/operational areas throughout the facility related to former activities conducted under the RVAAP.

1.4 Demography and Land Use

The facility consists of 21,683 acres in northeastern Ohio, approximately 37 km (23 miles) east-northeast of Akron and 30 miles (48.3 km) west-northwest of Youngstown. The facility occupies east-central Portage County and southwestern Trumbull County. The 2010 United States Census Bureau reports that the populations of Portage and Trumbull counties are 161,419 and 210,312, respectively. Population centers closest to the facility are Ravenna, with a population of 11,724, and Newton Falls, with a population of 4,795.

The facility is located in a rural area and is not close to any major industrial or developed areas. Approximately 55 percent of Portage County, in which the majority of the facility is located, consists of either woodland or farmland acreage. The closest major recreational area, the Michael J. Kirwan Reservoir (also known as West Branch Reservoir), is south of the facility.

The OHARNG uses the former RVAAP as a military training facility. As the cleanup is completed, the sites are utilized by the OHARNG for various training purposes and missions. The vision of the OHARNG is for Camp Ravenna to serve a premier training center for Pre-Mobilization, Inactive Duty Training and Annual Training events and to be a training facility that provides a world-class range complex, maneuver training areas, and training support facilities which meet unit readiness requirements.

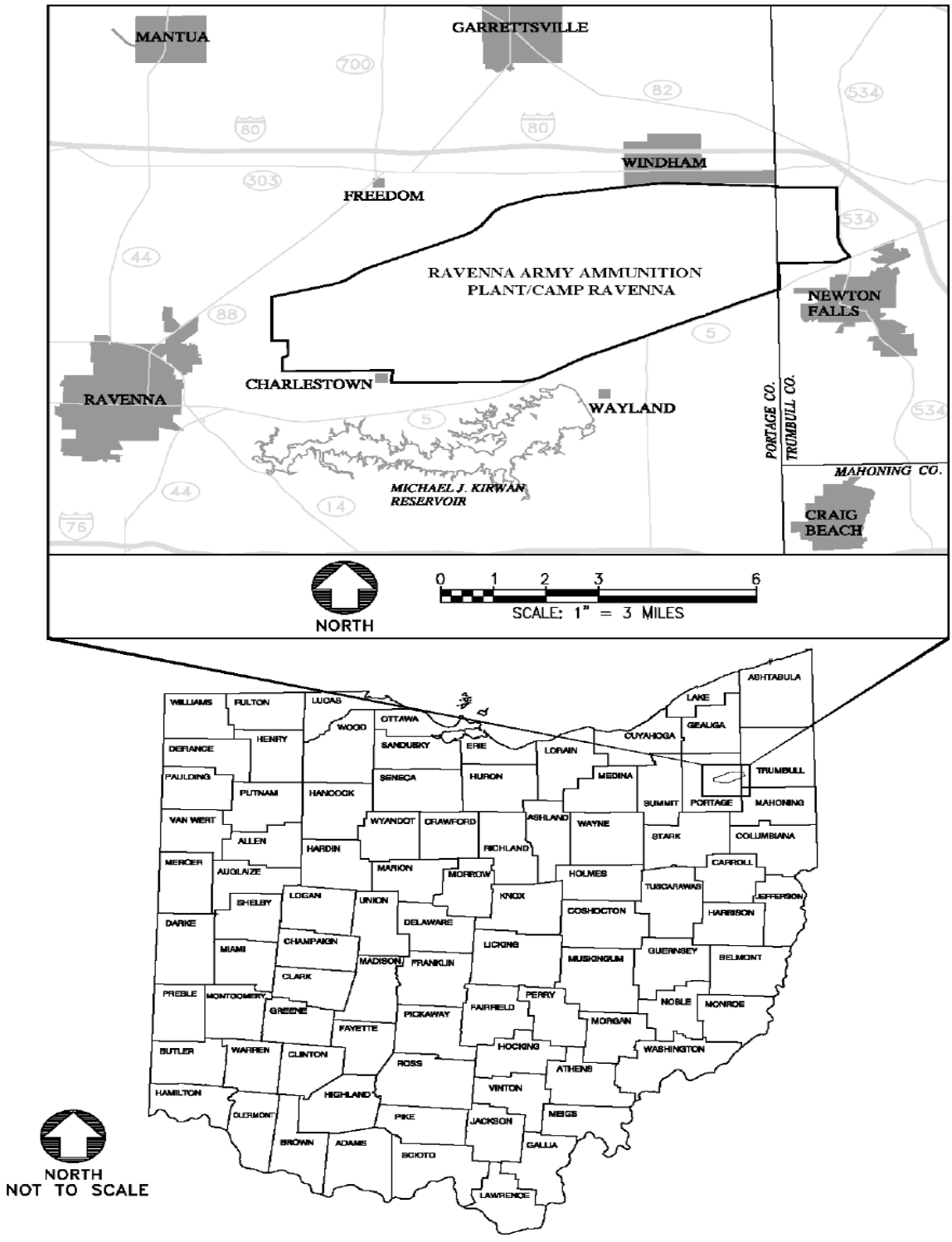

Figure 1-1. Location and general vicinity map of the former Ravenna Army Ammunition Plant/Camp Ravenna, Ohio.

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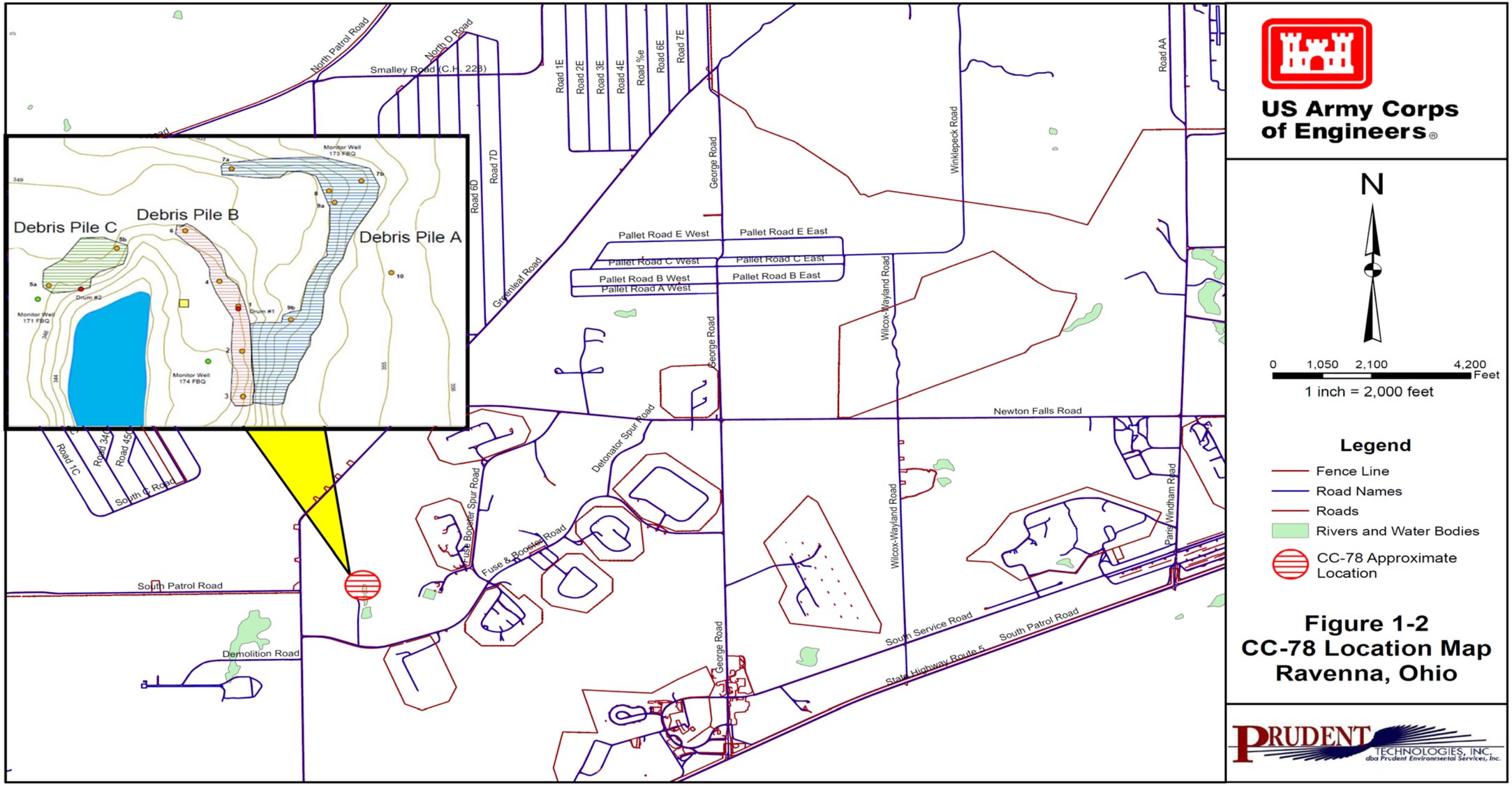

Figure 1-2. Location of the CC RVAAP-78 Area of Concern.

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1.5 FACILITY ENVIRONMENTAL SETTING

This section describes the physical features, topography, geology, hydrogeology, and environmental characteristics of the facility. The environmental setting specific to this AOC is included in Section 6.

1.5.1 Physiographic Setting

The facility is located within the Southern New York Section of the Appalachian Plateaus physiographic province (United States Geological Survey 1968). This province is characterized by elevated uplands underlain primarily by Mississippian and Pennsylvanian-age bedrock units that are horizontal or gently dipping. The province is characterized by rolling topography with incised streams having dendritic drainage patterns. The Southern New York Section has been modified by glaciation, which rounded ridges, filled major valleys, and blanketed many areas with glacially-derived unconsolidated deposits (e.g., sand, gravel, and finer-grained outwash deposits). As a result of glacial activity, old stream drainage patterns were disrupted in many locales, and extensive wetland areas developed.

1.5.2 Surface Features and Topography

The topography is gently undulating with an overall decrease in ground elevation from a topographic high of approximately 1,220 feet (ft) (372 meters [m]) above mean sea level in the far western portion of the facility to low areas at approximately 930 ft (283 m) above mean sea level in the far eastern portion of the facility.

The facility topography was mapped by USACE in February 1998 using a 2-ft (60.1-centimeter [cm]) contour interval with an accuracy of 0.02 ft (0.61 centimeters [cm]). The USACE based the topographic information on aerial photographs taken during spring 1997. This survey is the basis for the topographical information illustrated in figures included in this SI.

1.5.3 Soil and Geology

1.5.3.1 Regional Geology

The regional geology the facility consists of horizontal to gently dipping bedrock strata of Mississippian and Pennsylvanian-age overlain by unconsolidated glacial deposits of varying thicknesses. The local bedrock and unconsolidated surficial deposits are described in the following subsections.

1.5.3.2 Soil and Glacial Deposits

Bedrock at the facility is overlain by surficial deposits of Wisconsin-age Lavery Till in the western portion of the facility and the younger Hiram Till and associated outwash deposits in the eastern two-thirds of the facility. Unconsolidated glacial deposits vary considerably in thickness across the facility, from nonexistent in some of the eastern portions of the facility to an estimated 150 ft (46 m) in the south-central portion.

Thin surface glacial deposits have been completely removed as a consequence of human activities at locations such as Ramsdell Quarry. Bedrock is present at or near the ground surface in locations such as at Load Line 1 and the Erie Burning Grounds (USACE, 2001).

Where surficial glacial sediments remain, their distribution and character indicate their origin as ground moraine. These tills consist of laterally discontinuous assemblages of yellow-brown, brown, and gray silty clays to clayey silts, with sand and rock fragments. Lacustrine sediment from bodies of glacial-age standing water has also been encountered in the form of deposits of uniform light gray silt greater than 50 ft (15 m) thick in some areas (USACE, 2001).

Soil at the former RVAAP is generally derived from the Wisconsin-age silty clay glacial till. Distributions of soil types are discussed and mapped in the *Soil Survey of Portage County, Ohio*, which describes soil as nearly level to gently sloping and poor to moderately well drained (United States Department of Agriculture [USDA], 1978). Much of the native soil at the facility was disturbed during construction activities in former production and operational areas of the facility. The soil classification types (USDA, 2010) present ad described in Table 1-1.

1.5.3.3 Bedrock Geology

The Sharon Sandstone Member (informally referred to as the Sharon Conglomerate) of the Pennsylvanian Pottsville Formation is the primary bedrock beneath the former RVAAP. The Sharon Sandstone Member, the lowest unit of the Pottsville Formation, is a highly porous, loosely cemented, permeable, cross-bedded, frequently fractured and weathered, orthoquartzite sandstone, which is locally conglomeratic. Thin shale lenses occur in the upper portion of the unit (Winslow and White, 1966).

In the western portion of the facility, the upper members of the Pottsville Formation, including the Sharon Shale, Connoquenessing Sandstone (also known as the Massillon Sandstone), Mercer Shale, and uppermost Homewood Sandstone, have been observed. The regional dip of the Pottsville Formation, as measured in the west portion of the facility is between 1.5 and 3.5 m per 1.6 km (5 and 11.5 ft per mile) to the south.

The Sharon Shale is a gray to black sandy to micaceous shale containing thin coal, underclay, and sandstone lenses. The Mercer Member of the Pottsville Formation consists of silty to carbonaceous shale with abundant thin, discontinuous sandstone lenses in the upper portion. Regionally, the Mercer also has been noted to contain interbeds of coal.

The Homewood Sandstone Member is the uppermost unit of the Pottsville Formation. It typically occurs as a caprock on bedrock highs in the subsurface, and ranges from well-sorted, coarse-grained, white quartzose sandstone to a tan, poorly sorted, clay-bonded, micaceous, medium- to fine-grained sandstone. Thin shale layers are prevalent in the Homewood Member as indicated by a darker gray shade of color.

Table 1-1. Types of soils found at the former RVAAP.

USDA Soil Series Classification	Parent Material	Geographic Setting	Slope %	Drainage	Surface Runoff	Permeability
Frenchtown silt loams (Fr)	Formed in loam glacial till	On undulating till plain and in long, narrow areas along drainage ways	Level	Poorly drained	Slow	Slow
Holly silt loams (Ho)	Formed in recent alluvium	On narrow flood plains and strips on large flood plains	Level	Poorly drained	Slow	Moderate to moderately slow
Mahoning silt loams (MgA)	Formed in silty clay loam or clay loam glacial till	In upland areas between drainage ways	0-2	Poorly drained	Slow	Slow
Mahoning silt loams (MgB)	Formed in silty clay loam or clay loam glacial till	In slightly convex upland areas	2-6	Poorly drained	Medium to rapid	Slow
Mahoning-Urban land complex (MnB)	Formed in silty clay loam or clay loam glacial till	In urban or industrialized areas	Undulating	Varies	Varies	Varies
Mitiwanga silt loam (MtB)	Formed in glacial till 20-40 inches thick overlaying sandstone bedrock	On uplands, commonly at a slightly higher elevation than surrounding soils	2-6	Poorly drained	Medium	Moderate
Trumbull silt loam (TrA)	Formed in silty clay loam, clay loam, or silty clay glacial till	Along small drainage ways or in small depressions adjacent to the better-drained Mahoning and Remsen soils	0-2	Poorly drained	Slow	Very slow
Udorthents (Ud)	Subsoil or substratum of adjacent soils	In areas that have been cut or filled	0-10	Varies	Varies	Varies
Wadsworth silt loams (WaA)	Formed in silty clay loam and silt loam glacial till	On broad upland flats	0-2	Poorly drained	Slow	Slow
Wadsworth silt loams (WaB)	Formed in silty clay loam and silt loam glacial till	Near the heads of drainage ways and on long gentle upland slopes	2-6	Poorly drained	Moderate	Slow

Note:
USDA = United States Department of Agriculture.

1.5.4 Hydrogeology

1.5.4.1 Regional Hydrogeology

Sand and gravel aquifers are present in the buried-valley and outwash deposits in Portage County, as described in the *Phase I Remedial Investigation Report for High Priority Areas of Concern at the Ravenna Army Ammunition Plant, Ravenna, Ohio* (USACE, 1998). Generally, these saturated

zones are too thin and localized to provide large quantities of water for industrial or public water supplies; however, yields are sufficient for residential water supplies. Lateral extent and continuity of these aquifers are unknown. Recharge of these units is derived from surface water infiltration of precipitation and surface streams. Specific groundwater recharge and discharge areas have not been delineated. The regional potentiometric surface at the former RVAAP for unconsolidated surficial deposits and minor bedrock aquifers are presented in Environmental Quality Management [EQM] 2014.

The thickness of the unconsolidated surficial deposits at the former RVAAP ranges from thin to absent in the eastern and northeastern portion of the facility to an estimated 150 ft (46 m) in the central portion. The water table is encountered within the unconsolidated zone in many areas of the former RVAAP. Because of the heterogeneous nature of the surficial deposits, groundwater flow patterns are difficult to determine. Aquifer recharge from precipitation likely occurs via infiltration along root zones, desiccation cracks, and partings within the soil column. Laterally, local groundwater flow directions likely follow topographic contours and stream drainage patterns, with preferential flow along pathways (e.g., sand seams, channel deposits, or other stratigraphic discontinuities) having higher permeabilities than surrounding clay or silt-rich material. Aquifer recharge from precipitation likely occurs via infiltration along root zones, desiccation cracks, and partings within the soil column.

Beneath the facility, the principal bedrock aquifer is the Sharon Conglomerate (EQM, 2014). Depending on overburden thickness, the Sharon Conglomerate bedrock aquifer ranges from an unconfined to a leaky artesian aquifer hydraulically. According to one source, well yields from onsite supply wells completed in the Sharon Conglomerate range from 30 to 400 gallons per minute (United States Army Toxic and Hazardous Materials Agency 1978). Yields of 5 -200 gallons per minute have also been reported for onsite bedrock wells completed in the Sharon Conglomerate (Kammer, 1982).

Other local bedrock aquifers include the Homewood Sandstone, which is generally thinner and only capable of well yields less than 10 gallons per minute, and the Connoquenessing Sandstone. Wells completed in the Connoquenessing Sandstone in Portage County yield from 5 to 100 gallons per minute, but are typically less productive than the Sharon Conglomerate due to a lower formation permeability.

In general, the hydraulic gradient in the Sharon Conglomerate bedrock aquifer results in a regional eastward flow of groundwater that appears to be more uniform than flow directions in the unconsolidated surficial deposits because local surface topography influences the latter. Due to the lack of well data in the western portion of RVAAP, general flow patterns are difficult to discern. For much of the eastern half of the facility, hydraulic head elevations in bedrock are higher than those in overlying unconsolidated deposits, indicating an upward vertical hydraulic gradient. These data indicate there is a confining layer separating the two aquifers in some areas. In the far eastern area, there is little difference in the hydraulic head elevations, suggesting a hydraulic connection exists between the two aquifers.

1.5.4.2 Groundwater Usage and Domestic Water Supply

The former RVAAP historically used groundwater for both domestic and industrial supplies. Groundwater utilized at the former RVAAP during past operations was obtained from production wells located throughout the former RVAAP, with most wells screened in the Sharon Conglomerate. The Army discontinued use of most of the groundwater production wells prior to 1993, when the facility was placed in modified caretaker status. Currently, one of the four original groundwater production wells remains in use by the OHARNG. This well, located in the former Administration Area, is not used as a potable water source, but supplies non-potable water for sanitary purposes for active use buildings on the facility.

In addition, as of 2011, the OHARNG has installed two bedrock aquifer production wells at the facility. These two OHARNG supply wells were completed in the Sharon Conglomerate near Buildings 1067 and 1068 within the former Administration Area.

The closest population center to the facility, the City of Newton Falls, obtains municipal water supplies from the east branch of the Mahoning River. Currently, most groundwater use in the area surrounding the facility is for domestic and livestock supply, with the Sharon Conglomerate acting as the major producing aquifer in the area. The Connoquenessing Sandstone Member and Homewood Sandstone Member also provide limited groundwater supplies, primarily to the western half of the facility. Unconsolidated deposits can also be an important source of groundwater. Many of the domestic wells and small public water supplies located near the facility obtain sustainable quantities of water from wells completed in unconsolidated, surficial deposits.

In the unconsolidated aquifer, groundwater flows predominantly eastward; however, the unconsolidated zone shows numerous local flow variations influenced by topography and drainage patterns. The local variations in flow direction suggest the following: (1) groundwater in the unconsolidated deposits is generally in direct hydraulic communication with surface water, and (2) surface water drainage ways may also act as groundwater discharge locations. In addition, topographic ridges between surface water drainage features act as groundwater divides in the unconsolidated deposits.

Local groundwater within and surrounding the facility contains proportionately high levels of iron, manganese, and naturally occurring carbonate compounds. As such, it is classified as "hard" water. Hard water has an associated metallic taste that can be unpalatable if not properly treated for human consumption (OHARNG, 2008).

1.5.4.3 Regional Surface Water

The facility resides within the Mahoning River watershed, which is part of the Ohio River basin. The west branch of the Mahoning River is the main surface stream in the area. The west branch flows adjacent to the west end of the facility, generally north to south, before flowing into the Michael J. Kirwan Reservoir south of State Route 5. The west branch flows out of the reservoir and parallels the southern facility boundary before joining the Mahoning River east of the facility.

The western and northern portions of the facility display low hills and a dendritic surface drainage pattern. The eastern and southern portions are characterized by an undulating to moderately level

surface, with less dissection of the surface drainage. The facility is marked with marshy areas and flowing and intermittent streams whose headwaters are located in the upland areas of the facility.

The three primary watercourses that drain the facility are as follows:

- South fork of Eagle Creek
- Sand Creek
- Hinkley Creek.

All of these watercourses have many associated tributaries. Sand Creek, with a drainage area of 13.9 square miles (36 square km), flows generally in a northeast direction to its confluence with the south fork of Eagle Creek. In turn, the south fork of Eagle Creek continues in a northerly direction for 2.7 miles (4.3 km) to its confluence with Eagle Creek. The drainage area of the south fork of Eagle Creek is 26.2 square miles (67.8 square km), including the area drained by Sand Creek. Hinkley Creek originates just southeast of the intersection between State Route 88 and State Route 303 to the north of the facility. Hinkley Creek, with a drainage area of 11.0 square miles (28.5 square km), flows in a southerly direction through the facility, and converges with the west branch of the Mahoning River south of the facility (USACE, 2001).

Wetland areas at the facility include seasonal wetlands, wet fields, and forested wetlands. Many of the wetland areas are the result of natural drainage or beaver activity; however, some wetland areas are associated with anthropogenic settling ponds and drainage areas. Previous jurisdictional wetland delineations have surveyed approximately 5,680 acres or 26 percent of the Camp Ravenna land. Approximately 715 acres of jurisdictional wetlands have been delineated within the 5,680 acres, which comprises approximately 13 percent of the total area that was surveyed.

Approximately 282 acres of ponds are found on the facility. Many were constructed within natural drainage ways to function as settling ponds or basins for process effluent and runoff. Others are natural in origin, resulting from glacial action or beaver activity. Water bodies at the facility support aquatic vegetation and biota. Stormwater runoff is controlled primarily by natural drainage, except in former operations areas where an extensive storm sewer network helps to direct runoff to drainage ditches and settling ponds. Additionally, the storm sewer system was one of the primary drainage mechanisms for process effluent during the period that former production facilities were in operation.

1.5.5. Climate

The general climate of the area where the facility is located is continental and characterized by moderately warm and humid summers, reasonably cold and cloudy winters, and wide variations in precipitation from year to year. Climate data for the facility, presented below, were obtained from available National Weather Service records for the 30-year period of record from 1981 to 2010 at the Youngstown Regional Airport, in Youngstown, Ohio and were obtained from:*(http://www.nws.noaa.gov/climate/xmacis.php?wfo=cle*). Wind speed data for Youngstown, Ohio, are from the National Climatic Data Center *(http://www.ncdc.noaa.gov/data-access/quick-links#wind*) for the available 66-year period of record from 1930 through 1996.

Average annual rainfall in the area is 38.86 inches (98.7 cm), with the highest monthly average occurring in July (4.31 inches [10.9 cm]) and the lowest monthly average occurring in February

(2.15 inches [5.46 cm]). Average annual snowfall totals approximately 63.4 inches (161.0 cm) with the highest monthly average occurring in January (17.1 inches [43.43 cm]). Due to the influence of lake-effect snowfall events associated with Lake Erie, located approximately 35 miles (56.3 km) northwest of the facility, snowfall totals vary widely throughout northeastern Ohio.

The average annual daily temperature in the area is 49.3 degrees Fahrenheit (ºF), with an average daily high temperature of 59.0 ºF and an average daily low temperature of 39.7 ºF. The record high temperature of 100 ºF occurred in July 1988, and the record low temperature of -22 ºF occurred in January 1994. The prevailing wind direction at the facility is from the west-southwest, with the highest average wind speed occurring in January (12 miles [19.3 km] per hour) and the lowest average wind speed occurring in August (7 miles [11.3 km] per hour). As per the National Climatic Data Center, 20 storm events (category Thunderstorm Wind) were reported between January 1, 1996 and July 31, 2013 *(http://tinyurl.com/k2kn47o).* The area is susceptible to tornadoes; minor structural damage to several buildings on the facility property occurred as the result of a tornado in 1985.

1.6 REPORT ORGANIZATION

This SI report is organized into the following sections:

- Chapter 1 (Introduction) - Provides an overview of the purpose and scope of this SI, a general description, and the demography and land use of the facility. This section also provides an overview of the environmental setting at the facility.
- Chapter 2 (Site Description and Operational History) - Provides the site description and land use history of CC RVAAP-78. The physical property characteristics, chronological history of the property, military operations, and summary of the past investigations are included.
- Chapter 3 (Historical Operations) - Summarizes the historical operations, investigations, and removal actions at CC RVAAP-78
- Chapter 4 (Field Investigation) - Addresses the scope of activities performed under this SI. This section discusses sampling rationale for placement of environmental media sampling locations, field activity procedures, laboratory methods, and protocols. Included in this section are the pre-mobilization activities and the field sampling methodologies for the subsurface soil sampling. Deviations from the work plan are outlined in this section. Site surveying and the collection and characterization of the investigation-derived wastes (IDW) generated during this SI are discussed.
- Chapter 5 (Data Evaluation and Summary of Analytical Results) - Provides the data evaluation process used for this SI, a summary of subsurface soil sampling results, and a presentation of the comparison of the screening criteria to identify the presence of potential contamination. The results of the weight-of-evidence (WOE) evaluation are provided in this chapter, as well as a discussion of the IDW characterization results.
- Chapter 6 (Exposure Pathways) - Summarizes physical conditions, and hydrological and hydrogeological settings and provides conclusions for the exposure pathways identified for soil, air, surface water, and groundwater.
- Chapter 7 (Summary and Conclusions) - Summarizes findings and conclusions of this SI.

- Chapter 8 (References) - Lists references used for this report.

The SI includes the discussion and consideration of the following components:

- Site descriptions and operational histories
- Waste characteristics and management practices
- Summary of field investigation and pre-mobilization activities
- Known and suspected hazardous, toxic or radioactive waste (HTRW) and MEC issues
- Exposure pathways evaluation for surface soil, subsurface soil, air, surface water, and groundwater.
- Human population and environmental targets
- Analytical data and results
- Comparison of results with the appropriate screening criteria such as Facility-wide Cleanup Goals (FWCUGs) and/or the US Environmental Protection Agency's (EPA) Regional Screening Levels (RSLs)
- Data Verification Report
- Conclusions
- References

Report appendixes contain summarized investigation data as follows:

- Appendix A – CC RVAAP-78 Historical Aerial Photographs
- Appendix B – Tailgate Health & Safety Meeting Logs
- Appendix C – Activity Field Logs
- Appendix D – Daily QC Reports
- Appendix E – Field Boring Logs
- Appendix F – Typed Field Boring Logs
- Appendix G – Data Verification Report
- Appendix H – Laboratory Data
- Appendix I – Data Validation Report
- Appendix J – Drum Removal Documentation
- Appendix K – Fuze and Booster GW Data
- Appendix L – Automated Data Review Report
- Appendix M – Chemical Results for ISM Soil Samples for the Burn Area, Debris Piles A, B, and C
- Appendix N – Ohio EPA's Comments and Army's Responses

2.0 SITE DESCRIPTION

The description and operational history of CC RVAAP-78 was obtained through a variety of sources including, interviews of former personnel, review of historical aerial photographs, construction drawings, and reports obtained from the RVAAP restoration program and the OHARNG repositories.

The Quarry Pond Surface Dump AOC is located in the southwestern portion of the facility, just north of the Fuze and Booster Quarry (FBQ) Landfill/Ponds AOC (RVAAP-16), north of Fuze and Booster Road. The site consists of three areas of former dumping shown on Figures 2-1 and 2-2.

Two of the dumping areas at CC RVAAP-78, Debris Piles A and B, are at the bases of steeply inclined rock slopes of the quarry. The third area of dumping at CC RVAAP-78, Debris Pile C, is more flat and is adjacent to the northwest end of the northern-most pond within the RVAAP-16 AOC.

Debris Pile A is approximately 425 feet in length varying in surface width from 18 to 68 feet. Debris Pile A consists of construction debris, scrap metal, cultural debris, and asbestos containing materials (e.g. transite type roofing, sheeting, etc.). A second, smaller debris pile at the base of a steeply inclined rock slope, defined as Debris Pile B, is approximately 296 feet in length and 24 feet wide.

A small area where materials appeared to have been burned is located near a rusted, 55-gallon drum (Drum #1) (which was removed and disposed as part of this SI) and within Debris Pile B. This area was called an "apparent burn area" in this SI although there is no evidence besides charred ground and lack of vegetation to support that it was used as an actual burn area. The topographic map of this area (see Figure 2-2), shows the south end of Debris Pile A becoming one continuous slope from Reference Point 9b of Debris Pile A to Reference Point 3 of Debris Pile B (see Figure 2-1). Debris Pile C is located along the northwestern corner of the northern-most quarry pond area with the debris area being approximately 120 feet by 45 feet. A second rusted 55-gallon drum (Drum #2) was present within this area but was removed and properly disposed as part of this SI.

Table 2-1 provides the Global Positioning System (GPS) Ohio State Plane coordinates of locations where observations were made during the site reconnaissance, monitoring wells and 55-gallon drums. Reference numbers listed on Table 2-1 correspond to Figures 2-1 and 2-2.

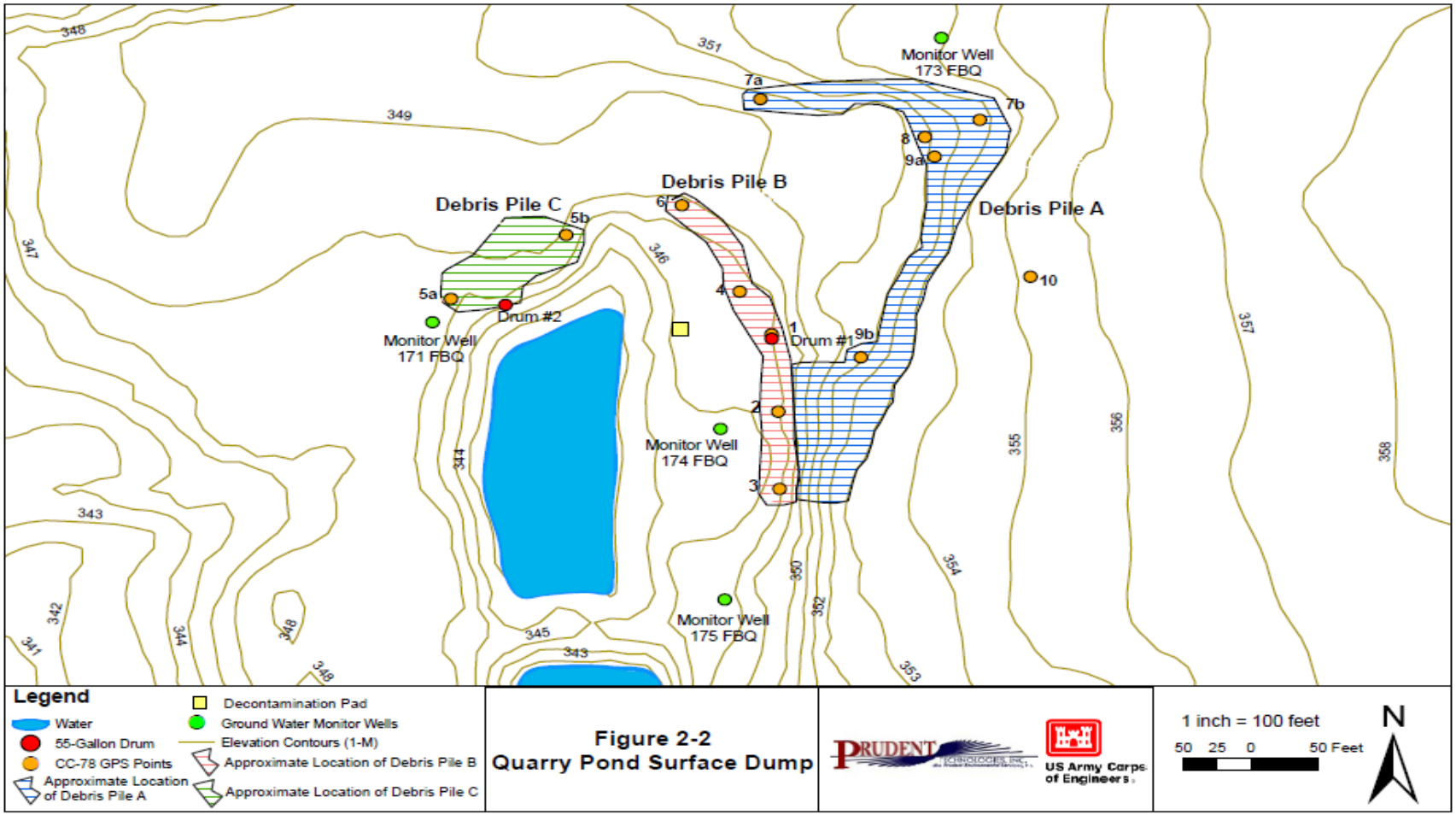
Table 2-1. Latitude/Longitude from the reconnaissance at CC RVAAP-78.

Reference #	Latitude	Longitude	Findings
CC-78 GPS Points			
1	41.1796	-81.1128	Apparent burn area devoid of vegetation
2	41.1794	-80.1128	Miscellaneous debris
3	41.1792	-81.1128	Concrete rubble
4	41.1797	-81.1129	Mounded material
5a	41.1797	-81.1137	Southwestern corner of Debris Pile C
5b	41.1798	-81.1134	Debris and corrugated metal
6	41.1799	-81.1131	Corrugated metal and roofing material
7a	41.1801	-81.1129	Bricks and end of construction debris
7b	41.1801	-81.1123	Small mound of bricks with vegetation
8	41.1801	-81.1124	Vegetation and fill material
9a	41.1800	-81.1124	Tie Bar
9b	41.1795	-81.1126	Construction debris
10	41.1797	-81.1121	Railroad ties
55-Gallon Drum			**Findings**
55-Gallon Drum 1	41.1796	-81.1136	Perforated, solidified drum
55-Gallon Drum 2	41.1796	-81.1128	Disintegrated remnants of a drum

Figure 2-1. Location of the CC-RVAAP- 78 Quarry Pond Surface Dump.



Figure 2-2. Topographic map of the CC RVAAP-78 Quarry Pond Surface Dump.



3.0 OPERATIONAL HISTORY

The FBQ was used as a burning area for explosive contaminated sawdust for Load Lines 6 and 11 from 1945-1949 (SAIC, 1996). Additionally, historical operational information indicated fuze and booster assemblies, projectiles, residual ash, and sanitary wastes were burned or dumped in the quarry prior to pond construction. In 1976, three settling ponds were constructed, separated by two earthen dams, with flow control gates for treating the spent brine regenerant and sand filtration backwash water from the Water Works 3 treatment plant that treated groundwater from facility production wells (1976-1993). As the three settling ponds were being constructed, debris was removed from the quarry bottom and transferred to the Ramsdell Quarry Landfill or one of the other burning grounds. In 1998, the RVAAP-16 AOC was expanded to include the quarry vicinity, the 11 former settling ponds/depressions and drainage conveyances, and a debris pile north of the quarry. Following the investigation and remediation of the FBQ, three debris piles were encountered within this area which required additional consideration. These three debris pile constitute the Quarry Pond Surface Dump, CC RVAAP-78, which is initially being handled by this site inspection.

Aerial photographs from 1951 and 1952 show CC RVAAP-78 being used as a dump, Table 3-1 and (Appendix A, Figures 1 and 2). Aerial photographs from 1966, 1979, and 1981 show less vegetation in the area northeast of the northern-most pond than what was observed during the site reconnaissance (Appendix A, Figures 3-5). The obscurity of these images is a result of the limited historical aerial photograph available for the area.

The Quarry Pond Surface Dump AOC CC RVAAP-78 is located in the southwestern portion of the facility, just north of RVAAP-16, north of Fuze and Booster Road. The site consists of three areas of former dumping shown on Figures 2-1 and 2-2. Two of the former dumping areas, Debris Piles A and B, are at the base of steeply inclined rock slopes. The third area of dumping, Debris Pile C, is more flat and is adjacent to the northwest end of the northern-most pond within the RVAAP-16 AOC. The FBQ was used as a burning area for explosive contaminated sawdust for Load Lines 6 and 11 from 1945-1949 (Science Applications International Corporation [SAIC], 1996). Additionally, historical operational information indicated fuze and booster assemblies, projectiles, residual ash, and sanitary wastes were burned or dumped in the quarry prior to pond construction (USATHAMA, 1978).

In 1976, three settling ponds were constructed, separated by two earthen dams, with flow control gates for treating the spent brine regenerant and sand filtration backwash water from the Water Works 3 Treatment Plant that treated groundwater from facility production wells (1976–1993). As the three settling ponds were being constructed, debris was removed from the quarry bottom and transferred to the Ramsdell Quarry Landfill or one of the other burning grounds. In 1998, following receipt of the detailed 1951 set of aerial photographs, many possible additional environmental sites were field checked by USACE and limited sampling at a few of the sites was performed. As a result, the list of environmental sites (AOCs) was increased from 32 to 51. In addition to the newly added sites, several of the existing 32 AOCs were modified. The set of small lagoons and several debris piles noted adjacent to the Fuze and Booster Quarry ponds were added to RVAAP-16 (USACHPPM, 1998). Following investigation and remediation of the Fuze and Booster Quarry Landfill/Ponds, three debris piles were encountered within this area which required

additional consideration. These three debris piles constitute the Quarry Pond Surface Dump, CC RVAAP-78, which is initially being assessed in this SI.

Land disturbance, potential grading, surface debris and what may have been heavy equipment are visible in aerial photographs from 1951 and 1952. The presence of such activity and equipment support that CC RVAAP-78 was being used as a dumping area (Table 3-1 and (Appendix A, Figures 1 and 2). Aerial photographs from 1966, 1979, and 1981 show less vegetation in the area northeast of the northern-most pond. Less vegetation was observed during the site reconnaissance conducted on November 11, 2010 (Appendix A, Figures 3 -5). The obscurity of these images is a result of the limited historical aerial photograph available for the area.

Debris Pile A contains transite, roofing material, debris from construction, scrap metal, and unidentified materials. Debris Pile B includes similar materials and an apparent burn area and also previously contained a rusted 55-gallon drum, Drum #1 that was removed as part of this SI. The apparent burn area is characterized by its charred ground and lack of vegetation. Because the depth to rock immediately adjacent to these piles is generally less than 1.0-ft, only surface soil ISM sampling was done and such sampling was done immediately adjacent to the piles, not through them to avoid disturbing transite, which was suspected of containing asbestos.

Debris Pile C is situated at the northwest end of the northern-most pond and is relatively flat. Miscellaneous fill is present, however, no transite materials were observed in this area. Because the depth to rock is approximately 5 feet, both surface soil and subsurface soil ISM sampling was conducted in Debris Pile C. A second rusted 55-gallon drum, Drum #2 was present within this area before it was removed.

It is possible that construction debris and/or material excavated from the quarry is present in the area between Debris Piles A and B and in the area extending from the west side of Debris Pile B over the east side of the northern-most pond. This is based on:

- The colors of the soils in the borings in this area differ in colors from the soils in borings from adjacent undisturbed areas.
- The piles of bricks and other items located away from the base of the steeply inclined rock slopes (noted during site reconnaissance), along with the lack of large vegetation in this area between the 1970's and 1980's (Appendix A, Figures 4-6) suggests additional minor amounts of fill, probably from trucks, may have been dumped in this area before the trees grew large enough to block truck passage. The obscurity of these images is a result of the limited historical aerial photograph available for the area.
- Aerial photographs from 1952 show vehicle activity and debris piles within and adjacent to the quarry (Appendix A, Figure 2).

Interviews with former employees indicate that construction debris from building maintenance was disposed of at the quarry prior to construction of the three dams. The observations stated earlier are based on information gained during the site reconnaissance and the aerial photographs of the late 1970's, 1980's, 1951, and 1952.

Table 3-1. Summary of observations from aerial photographs from CC RVAAP-78.

Date Flown	Company	Location of Hardcopy	CD Available	Significant Information - CC RVAAP -78 Quarry Pond Surface Dump
5/8/51	Unknown	RTLS	Yes	Appears to be two large areas within the quarry. Appears to be fence or tree lines perpendicular to each other northeast of the quarry. Passible West-East and North-South rock slopes that intersect each other northwest of the quarry. Two roads into the quarry, one West-East and one South-North, both pale indicating little or no vegetation and much activity. Much bare area directly west of the quarry.
4/16/52	Unknown	1037	No	Looks like may have be road down the middle of the quarry in approximate N-S alignment. Looks like truck on west side of quarry, just north of the west-east road. Looks like another truck on road at north end. Looks like many individual piles down in the quarry. Limited vegetation northeast of quarry.
7/17/66	Unknown	Bldg.	Yes	Obvious road along east side of quarry, then turns sharply west just north of the north end of the Quarry. Much bare area over north and northeast end of quarry- much less tree cover than now. Looks like one big open quarry, not separated as in 1951.
9/17/79	US Dept. of Agriculture	RTLS	Tif	High altitude photograph - less detai1 than other aerial photographs. Still relatively bare area north and east of quarry. Do not see individual ponds, looks like just one area. West-east road has darker shade and thus looks less used than the south-north road to the quarry.
11/10/81	Aerials Surveys, Inc.	Bldg. 1037 & RTLS	No	See three ponds. North pond has lighter shade- may be more shallow. Appears to be road or line from east extending to the east side of the middle pond and then turning north along the east side of the north pond. More vegetation northeast of north pond, but still not as dense as present.
3/26/85	AMATS*	RTLS	Tif	Three ponds all have similar darkness, although north pond 1Ooks slightly lighter. Area northeast of north pond looks more vegetated than in past, but still less than current.

*Akron Metropolitan Area Transportation Study
Tif = Tagged Image file

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4.0 FIELD SAMPLING

A work plan (WP), entitled, *Work Plan Addendum for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump,* dated October 24, 2011 was prepared for this project. All work conducted for this investigation, including anomaly avoidance, was performed as delineated in this addendum and the Facility-Wide Sampling and Analysis Plan for Environmental Investigations (FWSAP), SAIC, dated February 24, 2011, unless specifically noted.

4.1 Purpose and Scope of Intrusive Investigation

The overall purpose of the Intrusive Investigation of CC RVAAP-78 was to confirm the presence or absence of contamination at the CC RVAAP-78 Quarry Pond Surface Dump site. The scope of the investigation was to:

- Determine if there is contamination in the surface soil immediately adjacent to Debris Piles A and B,
- Determine if there is contamination in the surface soil within the apparent burn area (within Debris Pile B),
- Determine if there is contamination in the surface and subsurface soil within Debris Pile C,
- Quantify the amount of asbestos in small pieces of transite taken from Debris Piles A and B,
- Quantify amount of asbestos in a small piece of roofing found at Debris Pile B (not in the original WP Addendum for this project),
- Characterize the contents for disposal within the two rusted 55-gallon drums (Drum #1 at Debris Piles B and Drum #2 at Debris Pile C),
- Remove and dispose the two rusted 55-gallon drums per the characterization of the drums, and
- Compare levels of contamination detected in surface soils and subsurface soils sampled in this investigation with the sets of Ravenna FWCUGs developed for Ravenna-specific receptors.

The primary objective of this SI was to determine the presence of potential contamination in soil at the AOC as well as assess the asbestos at the AOC. In order to determine potential contamination, the following steps were included as part of this SI:

- Collect samples for laboratory analysis at CC RVAAP-78.

- Identify whether Site-Related Chemicals (SRCs) are present in the soil in the debris piles at the AOC. The SRCs are identified following the process outlined in the Facility-Wide Human Health Cleanup Goals document (SAIC, 2010).

- Compare the maximum reported concentrations of the SRCs to the most stringent Resident Receptor Facility-Wide Cleanup Goals (FWCUGs), between the adult and the child receptor, using the Target Cancer Risk (TCR) level of 10^{-6} and the Target Hazard Quotient (THQ) for non-carcinogenic risks of THQ = 0.1. For the purposes of this SI, potential contamination at CC RVAAP-78 is defined by an exceedance of the most stringent Resident Receptor FWCUG.

- Complete a weight-of-evidence (WOE) approach to further evaluate the SRCs reported at concentrations exceeding the most stringent Resident Receptor FWCUG using the TCR level of 10^{-6} or the THQ for non-carcinogenic risks at THQ = 0.1.

- Provide a recommendation for either further investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in the form of a Remedial Investigation, if potential contamination has been identified, or NFA if no potential contamination has been identified at this AOC.

4.2 Data Quality Objectives (DQO)

The data quality objectives of the Intrusive Investigation of CC RVAAP-78 were as follows:

- Conduct Incremental Sampling Methodology (ISM) sampling of surface soils at Debris Piles A, B, and C that produce representative and repeatable data,

- Conduct ISM sampling of subsurface soils at Debris Pile C that produce representative and repeatable data. Debris Pile C is the only debris pile that has sufficient soil cover to allow subsurface soil sampling,

- Provide sufficient Quality Control (QC)/Quality Assurance (QA) sampling to evaluate the overall quality of both the field and laboratory sampling procedures,

- Quantify the amount of asbestos in pieces of transite (and roofing) to guide future investigation/removal activities,

- Provide sufficient characterization data for disposal of the two rusted 55-gallon drums according to State of Ohio and Federal regulations,

- Provide sufficient data to verify that the two rusted 55-gallon drums have been disposed of according to State of Ohio and Federal regulations, and

- Provide sufficient analytical data to identify if contamination is present at the AOC using appropriate criteria.

4.3 Activities Prior to Sample Collection

4.3.1 Pre-mobilization

4.3.1.1 Subcontracts

Subcontracts were established with the following companies for services as described below.

Drilling (Geoprobe) Services	Frontz Drilling
Analytical Services for Primary and QC Samples	TestAmerica, Inc.
Analytical Services for QA Samples	CT Laboratories
Surveying Services	Vista Sciences Corporation
Waste Disposal	Emerald Environmental, Inc.
Asbestos Sampling	Diamond Environmental
Disposal of 55-Gallon Drums	SWS Environmental Services

4.3.1.2 Regular Equipment Procurement

Much of the sampling equipment was purchased via the internet, including materials from Forestry Suppliers, Inc. (step probes), En Novative Technologies, Inc. (Terra Cores). Products were shipped directly to Building 1036 during the week prior to the beginning of field sampling. Blank sampling labels were prepared prior to arrival at the site. A photoionization detector owned by Prudent was brought to the site from the San Antonio, Texas Office.

4.3.2 Mobilization

Mobilization took place on November 7 and 8, 2011 and included assembling and organizing all the preordered equipment/materials, purchasing equipment not already ordered, organizing the allocated workspace in Building 1036, establishing the decontamination line, purchasing waste drums, and coordinating with facility personnel and other contractors working on site.

4.3.3 Site Preparation

On November 8, 2011, Prudent personnel, including an Unexploded Ordnance (UXO) Technician, located Debris Piles A, B, C, the apparent burn area, and Drums #1 and #2. The delineation of these areas was made more obvious with the recent falling of foliage from the trees. At Debris Pile C where subsurface ISM sampling was to be performed, Prudent personnel placed yellow pin flags to locate primary Geoprobe boring locations, orange flags for the QC or 2nd triplicate Geoprobe locations, and red flags for the QA or 3rd triplicate Geoprobe boring locations. Some removal of small trees was performed to allow access of the Geoprobe drilling rig. Surface and subsurface MEC avoidance during drilling, was performed during both the selection of individual boring locations and the drilling of individual borings.

4.4 Surface and Subsurface Soil ISM Sampling

Sample information, identification, sample type, and analysis from the Intrusive Investigation of the CC RVAAP-78, along with the dates the sampling was accomplished, is provided on Tables 4-1 and 4-2.

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Table 4-1. Sample and analysis information for the surface soil/discrete/drum samples collected from CC RVAAP-78 AOC.

Area of Sample	Media	Type of Sample	Sample ID	Sample Depth (ft)	Explosives	Propellants	TAL Metals	Mercury	PCBs	SVOCs	VOCs	Pesticides	ACM	TCLP	Corrosivity	Ignitability	Reactivity	Date Collected
Debris Pile A	Surface Soil	ISM	C78SS-001M-0001-SO	0 – 0.8	1	1	1	1	1	1		1	1					10 Nov 2011
	Surface Soil	Discrete	C78SS-002-0001-SO	0.5							1							10 Nov 2011
	Surface Soil	ISM - QC	C78SS-003M-0001-SO	0 – 0.8	1	1	1	1	1	1		1	1					10 Nov 2011
	Surface Soil	Discrete	C78SS-004-0001-SO	0.5							1							10 Nov 2011
	Surface Soil	ISM - QA	C78SS-005M-0001-SO	0 – 0.8	1	1	1	1	1	1		1	1					10 Nov 2011
	Surface Soil	Discrete	C78SS-006-0001-SO	0.5							1							10 Nov 2011
	Surface Soil (P)	ISM - MS/MSD	C78SS-007M-0001-SO	0 – 0.8	1	1	1	1	1	1		1						10 Nov 2011
	Surface Soil(QA)	ISM - MS/MSD	C78SS-008M-0001-SO	0.5	1	1	1	1	1	1		1						10 Nov 2011
	Transite	Discrete	C78SS-009-0001-BD	Small Piece									1					10 Nov 2011
	Transite	Discrete	C78SS-009-0002-BD	Small Piece									1					10 Nov 2011
Debris Pile B	Surface Soil	ISM	C78SS-010M-0001-SO	0 – 0.8	1	1	1	1	1	1			1					10 Nov 2011
	Surface Soil	Discrete	C78SS-011-0001-SO	0.5							1							10 Nov 2011
	Transite	Discrete	C78SS-012-0001-BD	Small Piece									1					10 Nov 2011
	Roofing	Discrete	C78SS-012-0002-BD	Small Piece									1					10 Nov 2011
Debris Pile C	Surface Soil	ISM	C78SS-013M-0001-SO	0 - 1.0	1	1	1	1	1	1			1					9 Nov 2011
	Surface Soil	Discrete	C78SS-014-0001-SO	0.5							1							9 Nov 2011
Burn Area	Surface Soil	ISM	C78SS-015M-0001-SO	0 - 1.0	1	1	1	1	1	1			1					9 Nov 2011
	Surface Soil	Discrete	C78SS-016-0001SO	0.5							1							9 Nov 2011
55-Gallon #1	Solid Contents	Composite	C78DM-017-0001-WS	Surface			1	1		1		1		1	1	1	1	10 Nov 2011
		Discrete	C78DM-018-0001-WS	Surface							1							10 Nov 2011
55-Gallon #2	Solid Contents	Composite	C78DM-019-0001-WS	Surface			1	1		1		1		1	1	1	1	10 Nov 2-11
		Discrete	C78DM-020-0001-WS	Surface							1							10 Nov 2011

Table 4-2. Sample and analysis information for subsurface soil samples collected at CC RVAAP-78 AOC.

Area of Sample	Media	Type of ISM Sample	Type of Sample	Sample ID	Sample Depth (ft)	Explosives	Propellant	TAL Metals	Mercury	PCBs	SVOCs	VOCs	Pesticides	ACM	Date Collected
Debris Pile C	Subsurface Soil	Horizontal ISM	Primary	C78SB-021M-0101-SO	1.0 - 3.0	1	1	1	1	1	1		1	1	9 Nov 2011
	Subsurface Soil	Horizontal ISM	Primary	C78SB-021V-0101-SO	1.0 – 3.0							1			9 Nov 2011
		Horizontal ISM	Primary	C78SB-021M-0102-SO	3.0 - 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Horizontal ISM	Primary	C78SB-021V-0102-SO	3.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0001-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0001-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0002-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0002-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0003-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0003-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0004-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0004-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0005-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0005-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	Primary	C78SB-021M-0006-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	Primary	C78SB-021V-0006-SO	1.0 – 5.0							1			9 Nov 2011
	Subsurface Soil	Horizontal ISM	QC	C78SB-022M-0101-SO	1.0 - 3.0	1	1	1	1	1	1		1	1	9 Nov 2011
	Subsurface Soil	Horizontal ISM	QC	C78SB-022V-0101-SO	1.0 – 3.0							1			9 Nov 2011
		Horizontal ISM	QC	C78SB-022M-0102-SO	3.0 - 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Horizontal ISM	QC	C78SB-022V-0102-SO	3.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0001-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0001-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0002-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0002-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0003-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0003-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0004-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0004-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0005-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0005-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QC	C78SB-022M-0006-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QC	C78SB-022V-0006-SO	1.0 – 5.0							1			9 Nov 2011

TAL = Target Analyte List
ISM = Incremental Sampling Methodology
PCBs = Polychlorinated Biphenyls
ID = Identification

SVOCs = Semi-Volatile Organic Compounds
QC = Quality Control
TCLP = Toxicity Characteristic Leaching Procedure
MS/MSD = Matrix Spike/Matrix Spike Duplicate

VOCs = Volatile Organic Compounds
QA = Quality Assurance
ft = feet
ACM = Asbestos Containing Material

P = Primary
Surface Soil = 0 – 1.0 foot bgs
Subsurface Soil = >1.0 foot bgs

Area of Sample	Media	Type of ISM Sample	Type of Sample	Sample ID	Sample Depth (ft)	Explosives	Propellants	TAL Metals	Mercury	PCBs	SVOCs	VOCs	Pesticides	ACM	Date Collected
Debris Pile C	Subsurface Soil	Horizontal ISM	QA	C78SB-023M-0101-SO	1.0 - 3.0	1	1	1	1	1	1		1	1	9 Nov 2011
	Subsurface Soil	Horizontal ISM	QA	C78SB-023V-0101-SO	1.0 – 3.0							1			9 Nov 2011
		Horizontal ISM	QA	C78SB-023M-0102-SO	3.0 - 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Horizontal ISM	QA	C78SB-023V-0102-SO	3.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0001-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0001-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0002-S0	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0002-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0003-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0003-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0004-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0004-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0005-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0005-SO	1.0 – 5.0							1			9 Nov 2011
		Vertical ISM	QA	C78SB-023M-0006-SO	1.0 – 5.0	1	1	1	1	1	1		1	1	9 Nov 2011
		Vertical ISM	QA	C78SB-023V-0006-SO	1.0 – 5.0							1			9 Nov 2011

TAL = Target Analyte List
ISM = Incremental Sampling Methodology
PCBs = Polychlorinated Biphenyls
ID = Identification

SVOCs = Semi-Volatile Organic Compounds
QC = Quality Control
TCLP = Toxicity Characteristic Leaching Procedure
MS/MSD = Matrix Spike/Matrix Spike Duplicate

VOCs = Volatile Organic Compounds
QA = Quality Assurance
ft = feet
ACM = Asbestos Containing Material

P = Primary
Surface Soil = 0 – 1.0 foot bgs
Subsurface Soil = >1.0 foot bgs

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All sampling was performed in accordance with the *Final Work Plan Addendum for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump* and the *Facility-Wide Sampling Analysis Plan (FWSAP)*, except as noted. The sampling team consisted of personnel from Prudent including John Jent, Tomas Hernandez, Jr., and Amanda Miller.

4.4.1 Subsurface Soil Investigations

Horizontal (1' – 3' and 3' – 5') and vertical (1' – 5') ISM subsurface soil samples were collected from six borings, each taken to five feet below ground surface (bgs) within Debris Pile C to assess contaminant occurrence and distribution in subsurface soil. Because Debris Pile C was the only area where bedrock was deep enough to allow subsurface sampling, the triplicate sets of primary, QC, and QA samples were collected at Debris Pile C. All samples were analyzed for explosives, propellants, SVOCs, VOCs, PCBs, target analyte list (TAL) metals, mercury, pesticides and asbestos. Figure 4-1 shows the soil boring locations for Debris Pile C as well as the approximate locations of the ISM sample locations from Debris Piles A, B, and C.

The subsurface horizontal and vertical ISM samples were taken at Debris Pile C atop an approximately 4-foot high ridge of apparently dumped materials, see Photograph 4-1. The materials within this ridge were extremely heterogeneous, (Photographs 4-2 and 4-3). A photograph of the subsurface soil field sample preparation for VOC analyses is provided as Photograph 4-4. The goal of the subsurface ISM sampling was to determine average levels of contamination within 2-foot horizontal layers (1' – 3' and 3' – 5') within Debris Pile C and average levels from 1' – 5' bgs from each of the borings. Additionally, the subsurface ISM sampling aimed to provide good estimates of the types, locations, and extents of subsurface materials and conditions present.

4.4.2 Surface Soil Investigation

The surface soil ISM samples (0 – 1' bgs) were collected adjacent to Debris Piles A and B, from the apparent burn area adjacent to Debris Pile B, and from within Debris Pile C. Additionally two samples of exposed material that was assumed to be transite and a piece of roofing were collected. All such sampling was conducted in accordance with the WP Addendum and the FWSAP, except as noted in this SI. A photograph of the surface soil ISM sampling is provided as Photographs 4-5. Photographs of the burn area and surface soil ISM sampling are provided as Photographs 4-6 and 4-7. The materials logged at the burn area were 0 – 6" of black organic material followed by 6" of gray clay, see Photograph 4-8.

Thirty individual soil samples (aliquots) were collected within each ISM sample area to comprise the ISM sample for that sample area. Such sampling was planned to extend from 0 – 1' bgs, however, rock was encountered in many locations at depths shallower than 1 foot. The objective was to assess average levels of contamination in surface soils adjacent to the Debris Piles A, B, within the apparent burn area, and Debris Pile C. All primary, QC, and QA samples collected at Debris Pile A were analyzed for explosives, propellants, TAL metals, SVOCs, VOCs, pesticides, PCBs, and asbestos, except for the two sets of Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples for which asbestos analysis was not performed.

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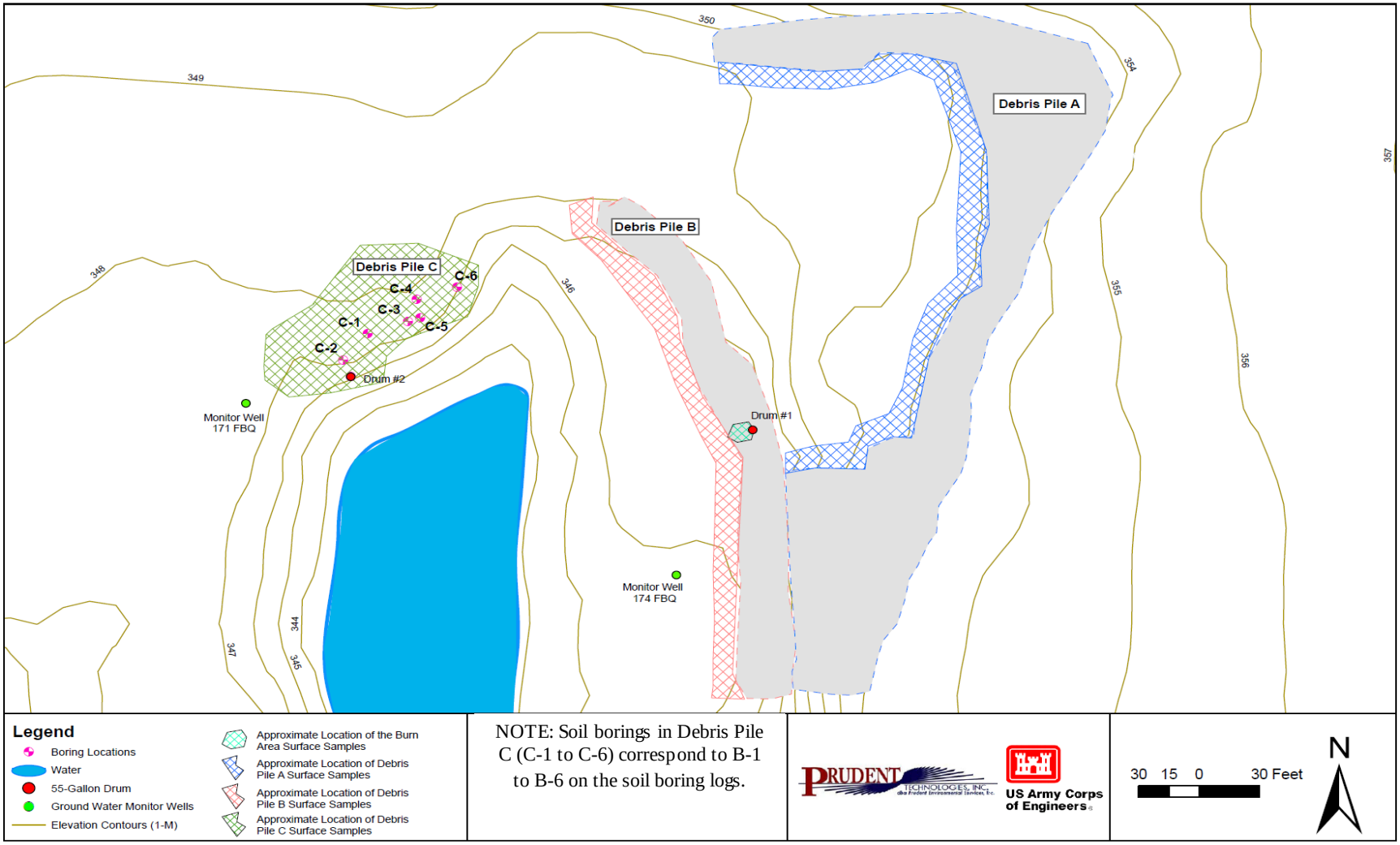
Figure 4-1. Locations of the soil borings collected at Debris Pile C and approximate locations of the ISM samples taken from Debris Piles, A, B, and C. Gray shaded areas show the actual size and shape of the Debris Pile A and Debris B.



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The surface soil ISM samples from Debris Pile B, C, and the apparent burn area were analyzed for the same chemicals as from Debris Pile A, except for pesticides. Discrete surface soil samples to be analyzed for VOCs were taken in the approximate middle of a sampling area at a depth of approximately 0.5 feet bgs.

Surface soil ISM samples were aggregated samples collected from stratified random locations within each of the designated sample areas. The sample aliquots were collected using a small-diameter ($^{7}/_{8}$ inch inside diameter) step probe. As per the FWSAP, the individual aliquot was obtained by pushing the step probe sampler to refusal or 12 inches in depth, whichever occurred first. In most cases refusal (apparent rock) was encountered prior to reaching a depth of 12 inches bgs. The entire volume of all aliquots was aggregated into a single (plastic bag) field sample. Discrete (Terra core) samples were collected in sample areas where the subsequent analysis was for VOCs, as per the seventh paragraph of Section 5.6.2.1.3 of the FWSAP. Tyvek® suits were worn by all samplers due to the suspected ACM in the area.

Triplicate surface ISM samples were taken to provide an overall evaluation of the total (field sampling + laboratory sample preparation + laboratory analysis) sampling and measurement process. Both field and laboratory QC procedures are required for ISM sampling. These procedures are described in the Quality Assurance Project Plan (QAPP) located in Appendix B of the WP.

4.4.3 Asbestos Sampling

Less than 6 inch square pieces of suspect transite (and a single piece of suspect roofing) were procured from Debris Piles A and B utilizing grab method sampling with a clean plastic or metal scoop. Each sample was placed in a large, airtight Ziploc® bag. Samples were double bagged prior to shipment to a National Voluntary Laboratory Accreditation Program (NVLAP0 accredited laboratory). Asbestos content was determined by EPA Method 600/R-93/116 to meet the requirements of 40 Code of Federal Regulations (CFR) Part 763, Subpart E, Appendix E, Section 1 Polarized Light microscopy. All asbestos sampling was performed by an Ohio Certified Asbestos Hazard Evaluation Specialist from Diamond Environmental.

4.4.4 Sampling of 55-Gallon Drum

Personnel from SWS Environmental Services collected samples from each drum using appropriate sampling equipment and Personal Protective Equipment (PPE) prescribed in the WP Addendum. Solid samples were collected in three glass jars capable of containing 100 grams of sample. Samples were labeled as appropriate, cooled to at least 4 °C, and analyzed within the EPA SW-846 established holding times. The sample from Drum #1, located at Debris Pile B, was described as a black tarry, rubbery substance and the sample from Drum #2, located at Debris Pile C, was described as brown/back organic material, dirt, wood, a squirrel's nest. The collected samples were forwarded to the primary laboratory where they were subjected to full TCLP analyses. Photographs of the 55-gallon drum sampling are provided as Photographs 6-9 through 6-12.



Photograph 4-1. Debris Pile C

Approximate 4-ft High Continuous Line of Small Debris Piles.



Photograph 4-2. Debris Pile C

Heterogeneous Materials Encountered in the Small Piles of Debris
1-½-Inch Diameter Soil Probes, Terra Probe Samplers and Methanol Bottles for VOC Analyses
Large Bottles for Horizontal VOC Samples and Small Bottles for Vertical VOC Samples
Aluminum Wedge Samplers (wrapped in aluminum foil) and Plastic Bag Inside Coffee Container for Non-VOC Analyses
For Vertical Non-VOC Samples.



Photograph 4-3. Debris Pile C

Heterogeneous Materials Encountered in the Small Piles of Debris. Aluminum Wedge Sampler shown next to red sharpie. Aluminum Wedge Samplers used to collect continuous materials within a 2-ft interval for non-VOC analyses.



Photograph 4-4. Debris Pile C

Subsurface Soil ISM Sample Field Preparation for VOCs.
Horizontal Subsurface Soil ISM Samples - (8 plugs per 2-ft interval) x 6 borings = 48 plugs.
Vertical Subsurface Soil ISM Samples - (16 plugs per 2-ft interval) x 2 intervals = 32 plugs.



Photograph 4-5. Debris Pile A
Surface Soil ISM Sampling.



Photograph 4-6. Debris Pile B
Proximity of Drum #1 and the Burn Area.



Photograph 4-7. Burn Area
Completed surface soil ISM sampling.



Photograph 4-8. Burn Area
Material encountered: Six inches of black organic material followed by six inches of gray clay.



Photograph 4-9. 55-Gallon Drum Sampling Personnel (Initial Drum Sampling Activity)



Photograph 4-10. Drum #1 Sampling (Initial Drum Sampling Activity)



Photograph 4-11. Drum #1



Photograph 4-12. Drum #2 Sampling (Initial Drum Sampling Activity)

4.4.5 Sampling Decontamination

The driller decontaminated the core barrel shoe in the field after the completion of each boring prior to beginning the next boring.

The tools used to collect soil subsurface samples from the Geoprobe tubes were Terra Core samplers for VOCs and aluminum wedge samplers for the non-VOC samples. The Terra Core samplers were a one-time use, disposable item and thus did not require decontamination. The aluminum wedge samplers were decontaminated per the FWSAP protocols. After the aluminum wedge samplers had been decontaminated, they were wrapped in aluminum foil and placed in a covered plastic bin for transport to the field sites.

The tools used to collect soil surface samples were chromium plated step probes. The step probes were decontaminated per the FWSAP protocols. After the step probes were decontaminated, they were wrapped in aluminum foil.

4.5 Waste Management from Sampling Activities

The waste materials generated in the field were comprised of (soil cuttings from the Geoprobe tubes), (personal PPE, spent empty Geoprobe liners, used Terra Core samplers), and (general non-environmental trash). The soil cuttings were primarily collected in plastic garbage liners placed inside 5-gallon buckets. Additional soil materials were collected on the clear six millimeter (6-mil) thick plastic sheeting placed on the ground at the end of the cutting table and below the two five-gallon buckets used for collecting soil cuttings. A large garbage bag was used to contain the used nitrile gloves, the used Terra Core samplers, and cut-up pieces of Geoprobe liners. A long-handled steel lopper was used to cut the Geoprobe liners into 12 to 18 inch long pieces. Next, a large garbage bag was used to collect general non-environmental waste. The five-gallon buckets used in the field for hand wash and rinse were brought to Building 1036 and their contents emptied into the 55-gallon drum for decontamination water. The buckets for soil cuttings and the large garbage bags for PPE were brought back to Building 1036 and placed in appropriately labeled 55-gallon open-headed drums.

All Investigation-Derived Waste (IDW), including auger cuttings, PPE, disposable sampling equipment, and decontamination fluids, was properly handled, labeled, characterized, and managed in accordance with Section 8.0 of the FWSAP, federal and state of Ohio large-quantity generator requirements, and RVAAP's Installation Hazardous Waste Management Plan.

4.5.1 IDW Collection & Containerization

All solid non-indigenous (expendable sampling equipment and trash) IDW was segregated as non-contaminated and potentially contaminated material. Potentially contaminated and non-contaminated, solid, non-indigenous IDW was identified in the field on the basis of visual inspection (e.g., soiled versus not soiled) and usage of the waste material (e.g., outer sampling gloves versus glove liners). All non-contaminated, non-indigenous IDW was contained in trash bags. Potentially contaminated, non-indigenous IDW was contained in labeled Department of Transportation (DOT) approved, open-top, 55-gallon drums equipped with plastic drum liners and sealed with bung-top lids.

All liquid non-indigenous IDW (e.g., decontamination rinse water consisting of soap and water and water rinses from alcohol rinses [from methanol] and acid rinses [from 2% hydrochloric acid]) was placed in a labeled, DOT-approved 55-gallon closed-top drum. All known or potentially hazardous liquid, non-indigenous IDW streams, such as methanol, hydrochloric acid rinses, and acetone were contained separately in labeled DOT-approved, closed-top, 55-gallon drums.

4.5.2 Container Waste Labeling

All IDW containers were labeled prior to placing IDW in them. All IDW drums and were labeled in accordance with Section 8.2 of the FWSAP.

4.5.3 IDW Characterization and Classification for Disposal

The one drum of indigenous IDW (soil cuttings) was to be characterized for disposal based on analytical results from environmental samples collected from each sampling station. One of the samples, however, indicated an ACM content of two percent. Since all the soil cuttings were accumulated in one drum, a composite sample of the drum of soil cuttings was collected per Section 8.4.1 of the FWSAP and analyzed for ACM. The analysis of this sample indicated less than 0.25 percent asbestos and the drum of soil cuttings was removed and disposed of as non-hazardous, contaminated waste on March 6, 2012. A sample from the drum of non-indigenous IDW (decontamination fluids), was collected and subjected to the full TCLP analysis. The results of the full TCLP analyses indicated no levels in excess of TCLP criteria and this drum was removed and disposed of as non-hazardous, contaminated waste on March 6, 2012. Next, the drum of PPE and expendable sampling equipment was disposed of as non-hazardous, contaminated waste on March 6, 2012 based on the analytical results of the samples of both the soil cuttings and decontamination fluids.

All solid and liquid IDW shipments were removed from the site and disposed of by a licensed waste disposal contractor in accordance with Section 8.5 of the FWSAP and all applicable State and Federal rules, laws, and regulations. All shipments of IDW were coordinated through the RVAAP Environmental Coordinator and Caretaker Site Manager.

4.7 Drum Removal and Overpacking Activities

A two-person team from SWS Environmental Services excavated the two 55-gallon drums from their locations with a mini-excavator on February 16, 2012 and placed them along with any materials that were part of the drums, in 85-gallon steel over-pack drums. Drum #1 was considered "RCRA Characteristic Hazardous Waste" due to lead content and was incinerated at the Ross Incineration Services facility in Grafton, OH. Drum #2, which was considered "RCRA Non-Hazardous", was solidified and disposed of at the Stoney Hollow Landfill in Dayton, OH. In addition to the two person team from SWS Environmental Services, a representative from Prudent and Mr. Jay Johnson, an independent contractor and UXO Technician III, were on site during the drum removal and overpacking. Photographs of the drum removals are provided as Photographs 4-13 through 4-20. Copies of the drum removal documentation are provided as Appendix J.



Photograph 4-13. Drum #1
Covered after the drum was sampled in November 2011.



Photograph 4-14. Drum #1 (Drum Over Packing Removal)
Positioned into upright position.



Photograph 4-15. Drum #1 (Drum Over Packing Removal)

Placing soil immediately below drum into overpack.



Photograph 4-16. Drum #1 Location

Location (at base of triple tree) where Drum #1 had been. Compare to Photograph 4-6.



Photograph 4-17. Drum #1 (Drum Over Packing Removal)



Photograph 4-18. Removing Drum #2 (Drum Over Packing Removal)



Photograph 4-19. Drum #2 (Drum Over Packing Removal)
Moving the overpacked Drum #2 to the trailer.



Photograph 4-20. Wet decontamination of the mini-excavator from Debris Pile C

4.8 Drum Removal Equipment Decontamination

SWS Environmental Services performed decontamination of the drum removal equipment. Due to tree density, the track hoe was unable to access Drum #1 (within Debris Pile B). Since the track hoe stayed on the service road and did not go into the area of the hazardous waste drum and burn area, a decontamination pad was not necessary for Drum #1. Prudent rolled the over-packed hazardous waste drum from Debris Pile B to the service road so the track hoe could load it on the truck. Both vehicles remained on the service road.

At Debris Pile C the track hoe was used to remove the decomposed drum and soil at its location. Debris Pile C, Drum #2 TCLP results were non-hazardous. Tarps were used to capture waste dirt and rinse from the non-hazardous drum at Debris Pile C. The IDW was disposed of in the non-hazardous over-packed drum, as not to generate needless material waste since the drum and soil below it were non-hazardous (Photograph 6-20).

4.9 Safety/Anomaly Avoidance

A detailed description of health and safety requirements, including PPE, training, and medical surveillance, is provided in the Final Site Safety and Health Plan Addendum for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump (Prudent, 2011), Appendix C to the WP Addendum.

MEC avoidance support activity was completed by Mr. Travis Steele of ECC, a UXO Technician III for the soil sampling activities and Mr. Jay Johnson, an independent contractor and UXO Technician III, were on site during the drum removal and overpacking activities. The UXO Technician III escorted the field team and was on-site during all field activities. The UXO Technician III had completed a training program, prior to beginning work on site, which complies with Occupational Safety and Health Administration (OSHA) Regulations 29 CFR 1910.120e(9). The UXO technician verified that no metallic anomalies were present at surface or subsurface locations where soil samples were taken. The UXO technician was also onsite during the drum removal activities to keep drum removal equipment away from magnetic anomalies. All such work was conducted in accordance with the Anomaly Avoidance Plan in Appendix D of the WP Addendum.

4.10 Deviations from the Work Plan

The following items were added or not performed as prescribed in the WP Addendum and the FWSAP.

- The following samples were incorrectly listed on the QA Lab (CT) chain of custody (COC):

  Sample C78SS-005M-0001-SO was noted as C78SS-0005-0001-SO on the COC
  Sample C78SS-006-0001-SO was noted as C78SS-0006-0001-SO on the COC
  Sample C78SS-008M-0001-SO was noted as C78SS-0008-0001-SO on the COC
  Sample C78SS-008M-0002-SO was noted as C78SS-0008-0002-SO on the COC
  Sample C78SS-009-0002-BD was noted as C78SS-0009-0002-SO on the COC

- Sample C78SS-009-0002-BD was added to the QA Lab in the field as a quality assurance check on the ACM testing of transite

- Sample C78SS-012-0002-BD was added in the field to determine the ACM of a small piece of roofing removed from Debris Pile B.

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5.0 SUMMARY RESULTS, QA/QC, AND FINAL ACTIVITIES

This Section summarizes the sampling results for CC RVAAP-78. The entire laboratory analytical data for this SI are provided in Appendix H. Data tables are included in Appendix H and present the data for each area sampled by analyte group. Summary analytical results related to QA/QC is presented here in this Section. Additionally, discussion of the disposal of the IDW and analysis of the material in that was in the drums are included in this Section.

The data collected during this SI were verified and validated in accordance with the procedures outlined in the FWSAP (SAIC, 2011b). The processes used to evaluate the analytical data are described in this Section. The completed data verification report is included in Appendix G and the data validation report is included as Appendix I. Chemical data reported as non-detect were reported as not detected in the summary of analytical results tables included in this SI and at the Limit of Detection in Appendix H.

5.1 General Sampling Intervals, Types, and Analysis

The surface soil ISM samples (0 – 1' bgs) were collected adjacent to Debris Piles A and B, from within the apparent burn area adjacent to Debris Pile B, and from within Debris Pile C (Figure 4-1). Additionally, two samples of exposed material that appeared to be transite and a piece of roofing were collected from Debris Pile A and Debris Pile B.

Thirty individual soil samples (aliquots) were collected within each ISM sample area to comprise the ISM sample for that sample area. The depth of the surface ISM samples (triplicates) was inconsistent and was not always collected to extend from 0 – 1' bgs because rock was encountered in many locations at depths shallower than 1 foot. The objective was to assess average levels of contamination in surface soils adjacent to the Debris Piles A, B, within the apparent burn area, and Debris Pile C. All three ISM samples (primary, QC, and QA samples) collected at Debris Pile A were analyzed for explosives, propellants, TAL metals, SVOCs, VOCs, pesticides, PCBs, and asbestos, except for the two sets of Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples for which asbestos analysis was not performed. The surface soil ISM samples from Debris Pile B, C, and the apparent burn area were analyzed for the same chemicals as from Debris Pile A, except for pesticides. Discrete surface soil samples to be analyzed for VOCs were taken in the approximate middle of a sampling area at a depth of approximately 0.5 feet bgs.

Table 5-1. Summary of the analysis for the samples submitted for laboratory analysis.

	Sample Type	Analyte Type
	Debris Pile A	
1 Primary, 1 QC, and 1 QA	Surface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
2	Discrete ACM Samples	Asbestos
	Debris Pile B	
1	Surface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
1	Discrete ACM Sample	Asbestos
	Burn Area	
1	Surface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2] VOCs[3], Pesticides and PCBs[4]
	Debris Pile C	
1	Surface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
6 Primary, 6 QC, 6 QA	Vertical Subsurface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
1	1-3' Horizontal Subsurface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
1 Primary, 1 QC, and 1 QA	3-5' Horizontal Subsurface Soil ISM	Metals, Explosives, Propellants, ACM[1], SVOCs[2], VOCs[3], Pesticides, and PCBs[4]
	55 Gallon Drums #1 and #2	
	Composite Sample of Contents	Full TCLP[5]
	Composite Sample of Contents	Full TCLP[5]

[1]ACM = Asbestos-containing material Metals are the Target Analyte List (TAL)
[2]SVOCs = Semi-Volatile Organic Compounds
[3] VOCs = Volatile Organic Compounds (discrete sample taken in middle of DU)
[4] PCBs = Polychlorinated biphenyls
[5]TCLP = Toxicity Characteristic Leaching Procedure

5.2 Data Verification, Validation, and QC

5.2.1 Data Verification and Validation

Data verification was performed on the samples. The analytical results were reported by the laboratory in accordance with the FWSAP (SAIC 2010).

Data qualifiers were assigned to each result based on the laboratory (i.e., TestAmerica of North Canton, Ohio) QA review and verification criteria. The SI analytical results were qualified as follows:

- "U" is not detected.
- "UJ" is not detected and the reporting limit is an estimated value.
- "J" denotes that the analyte was positively identified, but the associated numerical value is an approximate concentration of the analyte in the sample.
- "R" indicates that the result is not usable.

In addition to assigning qualifiers, the verification process also selected the appropriate result to use when re-analyses or dilutions were performed. Where laboratory surrogate recovery data or laboratory QC samples were outside of analytical method specifications, the verification chemist determined whether or not laboratory re-analysis should be used in place of an original reported result. If the laboratory reported results for both diluted and undiluted samples, diluted sample results were used for those analytes that exceeded the calibration range of the undiluted sample. A complete discussion of verification process results is contained in the Data Verification Report (Appendix G). A data validation report was completed for Site CC RVAAP-78. The report is provided in Appendix I. In general, the data validation performed for the CC RVAAP-78 SI indicates that no false negatives or false positives were identified, and the results are usable for their intended purposes.

5.2.2 Quality Control/Assurance/Analytical Problem Report

TestAmerica encountered several problems during analysis, described in the following Sections for each class of analyte.

5.2.2.1 Volatile Organic Analysis

TestAmerica did not conduct MS/MSD analyses due to lack of sample volumes.

Methylene Chloride was detected in method blanks MB 240-24100/1-A and MB 240-24114/1-A at levels above the method detection limit but below the reporting limit. Methylene Chloride was detected in method blank MB 240-24253/1-A at a level exceeding the reporting limit. Methylene chloride is common laboratory contaminants, and samples were flagged accordingly with "B".

- Failed Surrogate Recovery below Limits, Total samples Analyzed = 57

See Data Verification Report (DVRR) Section I for Surrogate Recovery Graphs and Section II for Data Sheets, and Sample IDs. Data are acceptable with a failure of one surrogate recovery.

The laboratory control sample (LCS) for prep. Batches #24114, and #24253 recovered outside acceptance limits for cis-1,3-Dichloropropene, and for Chloroethane respectively. There were insufficient samples to perform re-extractions and re-analyses.

Table 5-2. Summary of surrogate information for VOC analyses.

Surrogate	QC limits	%Mean Recoveries ±SD	No. Samples Failed	Graphs Section I, DVRR
DBFM (Dibromofluoromethane)	59-138%	76.3 ±8.86	2	Figure 1
BFB (4-Bromofluorobenzene)	85-120%	80.4 ±10.7	9	Figure 2
1,2-DCE (1,2-Dichloroethane)	61-130%	81.3 ±7.77	2	Figure 3
Toluene-d8 & BFB	85-115% 85-120%		11	
Toluene-d8	85-115	85.4 ±8.98	18	Figure 4

5.2.2.2 Semivolatile Organic Analysis

- Failed Surrogate Recoveries, Total samples analyzed = 30.

Data are acceptable with one surrogate that does not meet its QC Limits.

See Data Verification Report (DVRR) Section I for Surrogate Recovery Graphs and Section II for Data Sheets, and Sample IDs. Spike recoveries failed (MS/MSD) because spike concentrations were at much lower levels than those in samples.

Table 5-3. Summary of SVOC surrogate analyses.

Surrogate	QC limits	%Mean Recoveries ±SD	No. Samples Failed	Graphs Section I, DVRR
TPH (Terphenyl-d14)	30-125%	72.6 ±10.4	0	Figure 5
2FP (2-Fluorophenol)	35-105%	64.1 ±11.3	1	Figure 6
NBZ (Nitrobenzene-d5)	35-100%	59.3 ±10.1	1	Figure 7
PHL (Phenol-d5)	40-100%	61.8 ±10.0	1	Figure 8
TBP (2,4,6-Tribromophenol)	35-125%	55.2 ±14.2	2	Figure 9
FBP (2-Fluorobiphenyl)	45-105%	59.9 ±9.87	1	Figure 10

5.2.2.3 Organochlorine Pesticides

- Failed Surrogate Recoveries, Total sampled analyzed = 30

Only one surrogate is required for analysis; surrogate DCB is more appropriate for pesticide analysis than TCX due to the molecular weights of the pesticides. Also, DCB2 is for analysis in the confirmation column that is used only for confirmation and not for calculating compound concentrations. Data are acceptable based on the recovery of DCB1 within acceptable limits.

Several samples were diluted due to nature of sample matrix.

- Instrumental Problems

  Continuing calibration verification (CCV) was recovered above the upper control limits for several samples, and samples were not affected since there were no positive hits for pesticides.

No other difficulties were encountered.

Table 5-4. Summary of surrogate information for organochlorine pesticides.

Surrogate	QC limits	%Mean Recoveries ±SD	No. Samples Failed	Graphs Section I, DVRR
DCB1 (Decachlorobiphenyl)	55-130%	86.4 ±19.6	2 (MS & MSD)	Figure 19
DCB2 (Decachlorobiphenyl)	55-130%	147 ±68.6	15	Figure 21
TCX1 (Tetrachloro-m-xylene)	70-125%	154 ±110	15	Figure 20
TCX2 (Tetrachloro-m-xylene)	70-125%	85.3 ±14.5	6	Figure 22

5.2.2.4 Polychlorinated Biphenyl (PCB)

- Surrogate Recoveries: Total samples analyzed were 34.

Only two samples had DCB1 below the QC limits of 60 percent; sample C78SS-015M-0001-SO at 52% and C78DM-019-0001-WS at 53 percent.

Instrument Problems: The initial calibration verification (ICV) for Aroclor 1232 recovered above the upper control limit. Samples associated with this ICV, C78DM-017-0001-WS, C78DM-019-0001-WS were non-detects for the affected analytes.

No other difficulties were encountered.

5.2.2.5 Nitroaromatics & Nitramines: Explosive Residues

- Surrogate Recoveries, Total samples analyzed were 31.

3,4-Dinitrotoluene was recovered above the QC limits of 108 percent for one sample, #C78SS-001M-0001-SO, at 123 percent, and sample #C78SS-007-0001-SO at 143 percent, 117 percent and 118 percent for its MS/MSD analysis. The mean % surrogate recoveries was 96 ±12.4.

No other difficulties were encountered.

5.2.2.6 Metal Analysis

- Method Blanks

Potassium was detected in method blanks MB 240-24511/1-A and MB 240-25192/1- at levels above method detection limits but below the reporting limits. Antimony, Iron and Manganese failed the recovery criteria, low for the MS of sample C78SS-007-0001-SO (240-5866-45) in batch 240-25615. Antimony and Potassium exceeded the RPD limit for the duplicate of sample C78SS-007-0001-SODU (240-586-45). Aluminum failed the recovery criteria high.

- Instrument Problems

  Continuing calibration verification (CCV) for Antimony associated with batch 24511 recovered above the upper control limit. Samples associated with this CCV were non-detects for the affected analytes; therefore data are acceptable.

No other difficulties were encountered during the metals analyses. All other quality control parameters were met

5.2.3 Data Verification Report

TestAmerica assigned a unique laboratory lot number for each of the sample delivery groups for all the horizontal samples. A different lot number for vertical samples was assigned when they were analyzed.

For each laboratory lot number, TestAmerica submitted a hard copy of the summary report and an Electronic Data Deliverable (EDD) copy containing the summary report and an expanded report containing all the calibration, instrument print outs and chromatograms. The EDD was used to verify the data through the Automated Data Review (ADR) software and was reviewed to calibrate the data manually. The ADR software currently does not have the capability of reviewing calibration information.

In this report, the findings of the instrument calibration are presented first followed by ADR findings. The Data Verification Reports are provided in Appendix G. Appendix H includes CDs containing all TestAmerica's analytical data files.

5.2.4 Calibration

Details of instrument checks, initial calibrations, calibration verifications and continuing calibrations will be provided in the Data Validation Report by an independent contractor. Laboratory quality control showed that instruments' performances were acceptable.

5.2.5 Automated Data Review (ADR)

The ADR software from Laboratory Data Consultants (LDC) was used to develop an electronic Quality Assurance Project Plan (eQAPP), Final Ravenna ISM10192010) for the Ravenna project. The eQAPP contained all the analytical methods and the corresponding reporting and control limits required for this project. The analytical specifications for the eQAPP were taken from:

- *The Facility-wide Sampling and Analysis Plan for Environmental Investigations, Ravenna Army Ammunition Plant, Ravenna, Ohio,* March 2001
- *The Department of Defense (DOD) Quality Systems Manual (QSM) for Environmental Laboratories, version 4.1*
- *Appendix C, Laboratory Control Samples (LCS) Recovery Limits, Method Detection Limits (MDLs), Reporting Limits (RLs) and PRGs for SW-846 Methods, USACE Louisville District*
- The TestAmerica Laboratory Quality Control Manual

Electronic copies of the completed eQAPPs were supplied to TestAmerica and C.T. Laboratories. TestAmerica processed the project analytical data using the eQAPP.

Prudent independently reviewed all the analytical data supplied by TestAmerica in electronic format using the ADR software and the eQAPP. The ADR review flagged results according to eQAPP, checked for blank contamination and exceedance of control and spike limits, and produced a project summary report for each laboratory sample lot. The Automated Data Review (ADR) Report is provided in Appendix L.

5.2.6 Minimum Reporting Requirements

All data produced by TestAmerica was deemed acceptable and met the minimum reporting requirements for Laboratory Control Samples (LCS).

5.2.7 Laboratory Control Samples

The ADR and manual review showed at least one LCS was analyzed for each analytical batch for all analytical methods and no negative quality impact on the results. See Data Verification Report in Appendix G.

5.2.8 Surrogates

The ADR and manual review showed that recoveries of surrogates in the organic analytical methods were acceptable and control charts of surrogate recoveries provided assurance that the data are acceptable. Pesticide analyses showed some irregularities in surrogate recoveries from MS, MSDs. See Section I of the Data Verification Report, Appendix G.

5.3 Analysis of ISM Triplicate Samples

A summary of the relative standard deviations (RSD)s, which is defined as the (standard deviation)/(average), of the surface soil and subsurface soil ISM samples is provided on Tables 5-

4 and 5-5 The RSDs were only calculated for a given chemical when there were detections in the primary, field duplicate, and blind duplicate samples. An average of the RSDs associated with a given analysis was then calculated. For instance, if there were RSD(%)s of 8, 7, 9, 5, 12, and 13 for metals of a given set of primary, field duplicates, and blind duplicates, then the average RSD (%) for metals for that sample group would be 9. For some chemical groups there were more RSDs typically than for others. For instance, there were generally many more individual RSDs for metals than for non-metals.

Because the heterogeneity of the subsurface soil ISM horizontal and vertical ISM samples taken from Debris Pile C was much greater than that of the surface soil ISM samples taken at Debris Pile A, the surface soil and subsurface soil triplicates are considered separately.

For the surface soil set of triplicates taken from locations immediately adjacent to Debris Pile A, the following results were obtained:

> Average RSD (%) of 22 metals analyses was 20.0, with RSDs (%) for individual metals ranging from 0 to 100.3.
>
> Average RSD (%) of 17 non-metals was 51.8, with RSDs (%) for individual non-metals ranging from 21.8 to 74.3.

The subsurface horizontal and vertical ISM samples were taken at Debris Pile C atop an approximately 4-foot high ridge of apparently dumped materials. The materials within this ridge were extremely heterogeneous, see Photographs 4-2 and 4-3. For the subsurface soil sets of triplicates taken from locations atop the pile of dumped materials, the following results were obtained:

> Average RSD (%) of 21 metals analyses was 44.2, with RSDs (%) for individual metals ranging from 0 to 158.5.
>
> Average RSD (%) of 17 non-metals was 76.7, with RSDs (%) for individual non-metals ranging from 4.0 to 162.4.

Tables 5-4 and 5-6 for the metals shows that the RSDs for chromium, potassium, and titanium are significantly greater than those for the other metals. Upon consulting with the primary laboratory, TestAmerica, Inc., and the quality assurance laboratory, CT Laboratories, it was revealed that the sample preparation for the ISM samples at the primary lab consists of air drying, sieving, and then disaggregating the mixture, essentially just breaking up the large clods of soil; whereas the sample preparation at the quality assurance laboratory consists of air drying, sieving, and milling as follows. The samples were milled in a puck mill for one minute and then allowed to cool down for a minute. This was performed five times until the sample had a fine powder consistency to it.

Table 5-5. Relative Standard Deviation values calculated for the replicate comparison of the Primary, QC, and QA samples for metals assessed in ISM samples from Debris Pile A, Debris Pile B, and Debris Pile C.

Area	Sample ID	Type Sample	Sample Date	Sample Depth	Chemicals Analyzed	Al (mg/kg)	Sb (mg/kg)	As (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Mg (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
Debris Pile A	C78SS-001M-0001-SO	Primary	11/9/2011	0 - 0.8'	Full Suite	4400	1.3	8.4	82	0.64	0.57	28	8.2	34	120	1600	650	0.064	25	0.91	0.15	0.1	11	150
	C78SS-003M-0001-SO	QC				4500	1.9	6.9	65	0.62	0.52	21	7.6	37	110	1600	580	0.043	21	0.96	0.12	0.095	12	150
	C78SS-005M-0001-SO	QA				5830	2.4	7.6	73	0.59	0.52	70.9	7	37.2	145	1600	604	0.043	17.7	0.44	0.085	0.5	12.9	131
					%RSD	16.3	29.5	9.8	11.6	4.1	5.4	67.6	7.9	5.0	14.4	0.0	5.8	24.2	17.2	37.3	27.5	100.3	7.9	7.6
						AVERAGE RSD = 20.0 %			20.0															
Debris Pile C	C78SB-021M-0101-SO	Primary	11/9/2011	1' - 3'	Full Suite	8200	0.17	14	68	0.59	0.37	17	8.9	14	30	2600	580	0.033	19	0.97	0.039	0.15	15	130
	C78SB-022M-0101-SO	QC				7200	0.14	11	64	0.57	0.31	14	7.2	12	30	2000	560	0.026	16	0.88	0.032	0.11	12	120
	C78SB-023M-0101-SO	QA				12200	0.74	14.6	101	0.75	0.13	351	9.9	22.8	22.3	3320	853	0.019	20	0.97	u	0.75	19.7	136
					%RSD	28.8	96.6	14.6	26.1	15.5	46.3	152.1	15.8	35.3	16.2	25.0	24.6	26.9	11.4	5.5		106.5	24.9	6.3
						AVERAGE RSD = 38.1 %			38.1															
Debris Pile C	C78SB-021M-0102-SO	Primary	11/9/2011	3' - 5'	Full Suite	3600	0.7	7.9	84	0.36	0.85	21	6.6	32	97	890	240	0.026	51	0.7	0.27	0.077	7.6	340
	C78SB-022M-0102-SO	QC				2800	1.1	7.7	73	1.7	3.1	74	6.8	1600	170	610	250	0.036	81	0.55	2.2	u	4.2	1100
	C78SB-023M-0102-SO	QA				5530	3.8	12.5	207	0.56	1.2	361	7.1	243	568	1090	391	0.023	34.9	0.2	0.44	0.53	10.7	870
					%RSD	35.3	90.3	29.0	61.3	82.8	70.5	120.3	3.7	136.2	91.1	27.9	28.8	24.0	42.1	53.1	110.2		43.3	50.6
						AVERAGE RSD = 58.2 %			5820.1%															
Debris Pile C	C78SB-021M-0001-SO	Primary	11/9/2011	1' - 5'	Full Suite	7100	2.7	12	350	0.46	2.5	32	11	160	340	1400	460	0.062	200	0.74	0.93	0.075	12	1400
	C78SB-022M-0001-SO	QC				5600	2.5	14	160	3.5	8.6	1200	19	6800	490	1300	780	0.041	800	0.87	5	u	u	4400
	C78SB-023M-0001-SO	QA				12300	7.2	20.8	740	1.4	2.8	524	10.8	725	1970	1740	801	0.046	66.5	0.93	1.2	1.2	18.5	1620
					%RSD	42.2	64.3	29.6	71.0	87.1	74.2	100.2	34.4	143.7	96.5	15.6	28.1	22.1	109.9	11.5	95.8			67.6
						AVERAGE RSD = 63.5 %			63.5															
Debris Pile C	C78SB-021M-0002-SO	Primary	11/9/2011	1' - 5'	Full Suite	3800	0.37	15	48	0.57	0.48	21	4.5	11	60	1200	450	0.032	15	0.7	0.064	0.085	6.4	140
	C78SB-022M-0002-SO	QC				5500	u	14	55	0.58	0.43	12	5.2	12	34	1600	500	0.053	12	0.8	0.043	0.096	9	170
	C78SB-023M-0002-SO	QA				13400	0.94	18	146	1.1	0.38	467	7	26.4	46.3	3800	1210	0.047	16.2	1.3	0.046	1.1	17	256
					%RSD	67.7		13.3	65.9	40.4	11.6	156.1	23.2	52.3	27.8	63.6	59.0	24.6	15.0	34.4	22.3	136.5	51.2	31.9
						AVERAGE RSD = 51.7 %			51.7															
Debris Pile C	C78SB-021M-0003-SO	Primary	11/9/2011	1' - 5'	Full Suite	7000	0.23	12	57	0.5	0.3	15	7.9	17	23	1700	440	0.03	17	1	0.028	0.12	14	95
	C78SB-022M-0003-SO	QC				6300	u	11	42	0.42	0.087	13	6.7	16	15	1700	220	u	17	0.97	0.018	0.1	11	60
	C78SB-023M-0003-SO	QA				12600	0.53	14.3	88.7	0.63	0.25	229	9.7	20.1	18.4	2260	600	0.016	19.3	0.54	u	0.45	21.9	133
					%RSD	40.0		13.6	38.1	20.5	52.5	144.9	18.6	12.1	21.4	17.1	45.4		7.5	30.8		88.0	36.0	38.0
						AVERAGE RSD = 38.5 %																		
Debris Pile C	C78SB-021M-0004-SO	Primary	11/9/2011	1' - 5'	Full Suite	6900	0.24	9	43	0.46	0.29	13	7.2	11	13	1500	300	0.018	16	0.84	0.017	0.11	12	100
	C78SB-022M-0004-SO	QC				6400	u	7.7	39	0.41	0.22	13	6.9	11	11	1400	270	0.018	15	0.82	0.02	0.091	12	80
	C78SB-023M-0004-SO	QA				9710	0.65	9	82.5	0.51	0.26	238	7.5	17.7	19.6	1730	450	0.014	15.1	0.26	0.017	0.41	16.8	270
					%RSD	23.3		8.8	43.8	10.9	13.7	147.6	4.2	29.2	31.0	11.0	28.4	13.9	3.6	51.4	9.6	87.9	20.4	69.6
						AVERAGE RSD = 34.2 %																		
Debris Pile C	C78SB-021M-0005-SO	Primary	11/9/2011	1' - 5'	Full Suite	4700	0.11	7.1	34	0.36	0.065	9.3	5.6	8.4	10	1400	190	0.011	12	0.74	u	0.09	9.5	45
	C78SB-022M-0005-SO	QC				3400	u	5.1	27	0.31	0.066	8.1	4.6	6.1	8.7	950	210	u	9.7	0.56	0.012	0.065	7.2	43
	C78SB-023M-0005-SO	QA				6220	0.55	5.6	49	0.38	0.026	291	5.1	10.3	12.5	1080	361	0.0046	10.8	0.34	u	0.29	11.2	44.3
					%RSD	29.6		17.5	30.7	10.3	43.6	158.5	9.8	25.4	18.6	20.3	36.9		10.6	36.6		83.1	21.6	2.3
						AVERAGE RSD = 36.3 %																		

Table 5-5. Relative Standard Deviation values calculated for the replicate comparison of the Primary, QC, and QA samples for metals assessed in ISM samples from Debris Pile A, Debris Pile B, and Debris Pile C.

Area	Sample ID	Type Sample	Sample Date	Sample Depth	Chemicals Analyzed	Al (mg/kg)	Sb (mg/kg)	As (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Mg (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
Debris Pile C	C78SB-021M-0006-SO	Primary	11/9/2011	1' - 5'	Full Suite	5900	0.16	8.8	45	0.45	0.15	12	7.7	9.6	12	2500	340	0.011	16	0.72	0.021	0.098	11	63
	C78SB-022M-0006-SO	QC				5400	u	7.2	37	0.42	0.13	11	7.5	7.7	11	1800	270	u	13	0.75	0.022	0.1	10	64
	C78SB-023M-0006-SO	QA				10700	0.049	9.6	76.1	0.55	0.16	165	8	14.5	16.8	2990	509	0.014	16.1	0.89	u	0.37	17.1	73.1
					%RSD	39.9		14.3	39.2	14.4	10.4	141.4	3.3	33.1	23.4	24.6	32.9		11.7	11.5		82.6	30.3	8.3
						AVERAGE RSD = 32.7 %																		

RSD % = (STANDARD DEVIATION OF PRIMARY, QC, QA) / (AVERAGE OF PRIMARY, QC, QA) %

Table 5-6. Relative Standard Deviation values calculated for replicate comparison of the Primary, QC, and QA samples for non-metals assessed in ISM samples from Debris Pile A, Debris Pile B, and Debris Pile C.

Area	Sample ID	Type Sample	Sample Date	Sample Depth	Chemicals Analyzed	2,4,6-TNT (mg/kg)	2-Am 4,6 (mg/kg)	4-Am 2,6 (mg/kg)	2-Methy (mg/kg)	Acenaph (mg/kg)	Anthrace (mg/kg)	B(a)A (mg/kg)	B(b)F (mg/kg)	B(a)P (mg/kg)	B(g,h,i)p (mg/kg)	B(k)F (mg/kg)	Chrysene (mg/kg)	Dibenzo (mg/kg)	Di-n-buty (mg/kg)	Fluoran (mg/kg)	Fluorene (mg/kg)	I(1,2,3-cd)P (mg/kg)	Naphthal (mg/kg)	Phenan (mg/kg)	Pyrene (mg/kg)	Ethylben (mg/kg)	Toluene (mg/kg)	Xylene (mg/kg)
Debris Pile A	C78SS-001M-0001-SO	Primary	11/10/2011	0 - 0.8'	Full Suite	2	0.3	2	0.042		0.056	0.19	0.28	0.17	0.13	0.14	0.21			0.45	0.04	0.11		0.3	0.3			
	C78SS-003M-0001-SO	QC				1.2	0.22	0.77	0.027		0.023	0.092	0.14	0.088	0.087	0.085	0.099			0.18	0.01	0.058		0.092	0.12			
	C78SS-005M-0001-SO	QA				4.5	0.44	0.74	0.038		0.12	0.28	0.41	0.24	0.08	0.13	0.31			0.72	0.062	0.12		0.5	0.54			
					%RSD	67.1	34.8	61.4	21.8		74.3	50.2	48.8	45.8	27.3	24.8	51.2			60.0	69.9	34.7		68.6	65.8			
								AVERAGE RSD = 51.8 %			51.8																	
Debris Pile C	C78SB-021M-0101-SO	Primary	11/9/2011	1' - 3'	Full Suite				0.086		0.053	0.24	0.32	0.23	0.18	0.17	0.28					0.15	0.061	0.25	0.4	0.014	0.043	0.059
	C78SB-022M-0101-SO	QC							0.11		0.15	0.63	0.97	0.65	0.45	0.48	0.76					0.42	0.075	0.59	1.1	0.015	0.038	0.061
	C78SB-023M-0101-SO	QA							0.23		0.74	2.5	2.3	1.4	0.71	0.84	2					1	0.18	4.5	4.5	0.014	0.032	0.036
								%RSD	54.3		118.3	107.5	84.3	78.0	59.3	67.5	87.6					83.0	61.7	132.7	109.7	4.0	14.6	26.7
								AVERAGE RSD = 72.6 %			72.6																	
Debris Pile C	C78SB-021M-0102-SO	Primary	11/9/2011	3' - 5'	Full Suite								0.038						0.023	0.031			0.015	0.021	0.026			
	C78SB-022M-0102-SO	QC											0.0066						0.015	0.0089			0.0074	0.0095	0.0068			
	C78SB-023M-0102-SO	QA											0.41						0.08	1.1			0.051	0.85	0.75			
								%RSD					148.1						90.1	164.1			95.2	164.2	162.4			
Debris Pile C	C78SB-021M-0001-SO	Primary	11/9/2011	1' - 5'	Full Suite							0.1	0.13	0.088	0.075	0.059	0.11					0.059						
	C78SB-022M-0001-SO	QC										0.28	0.35	0.27	0.19	0.25	0.34					0.17						
	C78SB-023M-0001-SO	QA										5	3.9	2.3	0.97	1.3	3.9					1.5						
								%RSD				**154.9**	**144.9**	**138.6**	**118.3**	**124.6**	**146.5**					**139.1**						
								AVERAGE RSD = 130.3%			130.3																	
Debris Pile C	C78SB-021M-0002-SO	Primary	11/9/2011	1' - 5'	Full Suite				0.2		0.27	0.71	0.87	0.62	0.42	0.37	0.72	0.057		1.6	0.045	0.37	0.13	0.71	1.2	0.042	0.096	0.24
	C78SB-022M-0002-SO	QC							0.34		0.25	1.3	2	1.3	0.95	0.82	1.5	0.099		3.2	0.069	0.85	0.24	1.1	2.4	0.05	0.13	0,27
	C78SB-023M-0002-SO	QA							0.94		0.4	1.1	1.7	0.84	0.34	0.52	1.3	0.2		3.4	0.11	0.45	0.61	1.6	2.5	0.061	0.15	0.17
								%RSD	**79.7**		**26.6**	**28.9**	**38.4**	**37.7**	**58.2**	**40.2**	**34.5**	**61.9**		**36.1**	**44.0**	**46.2**	**77.0**	**39.2**	**35.6**	**18.7**	**21.8**	**24.1**
								AVERAGE RSD = 41.6 %			41.6																	
Debris Pile C	C78SB-021M-0003-SO	Primary	11/9/2011	1' - 5'	Full Suite				0.01		0.0058	0.037	0.05	0.032	0.022	0.023	0.038			0.064		0.02	0.0081	0.027	0.048			
	C78SB-022M-0003-SO	QC							0.0056		0.0039	0.012	0.015	0.01	0.0087	0.0076	0.014			0.032		0.0067	0.0063	0.028	0.022			
	C78SB-023M-0003-SO	QA							0.014		0.0061	0.033	0.04	0.023	0.013	0.014	0.03			0.066		0.019	0.011	0.043	0.051			
								%RSD	**42.6**		**22.7**	**49.1**	**51.5**	**51.0**	**46.6**	**52.0**	**44.7**			**35.3**		**48.6**	**28.0**	**27.4**	**39.5**			
								AVERAGE RSD = 41.5 %			41.5																	
Debris Pile C	C78SB-021M-0004-SO	Primary	11/9/2011	1' - 5'	Full Suite				0.037	0.0051	0.026	0.055	0.063	0.045	0.031	0.027	0.051			0.12	0.016	0.028	0.032	0.12	0.086			

Table 5-6. Relative Standard Deviation values calculated for replicate comparison of the Primary, QC, and QA samples for non-metals assessed in ISM samples from Debris Pile A, Debris Pile B, and Debris Pile C.

Area	Sample ID	Type Sample	Sample Date	Sample Depth	Chemicals Analyzed	2,4,6-TNT (mg/kg)	2-Am 4,6 (mg/kg)	4-Am 2,6 (mg/kg)	2-Methy (mg/kg)	Acenaph (mg/kg)	Anthrace (mg/kg)	B(a)A (mg/kg)	B(b)F (mg/kg)	B(a)P (mg/kg)	B(g,h,i)p (mg/kg)	B(k)F (mg/kg)	Chrysene (mg/kg)	Dibenzo (mg/kg)	Di-n-buty (mg/kg)	Fluoran (mg/kg)	Fluorene (mg/kg)	I(1,2,3-cd)P (mg/kg)	Naphthal (mg/kg)	Phenan (mg/kg)	Pyrene (mg/kg)	Ethylben (mg/kg)	Toluene (mg/kg)	Xylene (mg/kg)
	C78SB-022M-0004-SO	QC							0.0075	0.029	0.042	0.16	0.19	0.12	0.074	0.081	0.17			0.39	0.013	0.072	0.0063	0.19	0.26			
	C78SB-023M-0004-SO	QA							0.01	0.0059	0.0021	0.043	0.059	0.034	0.024	0.018	0.037			0.059	0.0007	0.027	0.011	0.021	0.047			
								%RSD	**90.0**	**101.8**	**85.9**	**74.8**	**71.6**	**70.6**	**63.0**	**81.1**	**85.0**			**92.9**	**81.9**	**60.7**	**83.3**	**77.0**	**86.6**			
								AVERAGE RSD = 80.4 %			80.4																	
Debris Pile C	C78SB-021M-0005-SO	Primary	11/9/2011	1' - 5'	Full Suite						0.05	0.18	0.2	0.15	0.12	0.11	0.16			0.31		0.11		0.16	0.23			
	C78SB-022M-0005-SO	QC									0.11	0.45	0.64	0.43	0.27	0.34	0.44			0.69		0.25		0.29	0.54			
	C78SB-023M-0005-SO	QA									0.22	0.78	0.96	0.56	0.24	0.31	0.74			1.8		0.39		1.1	1.3			
								%RSD			**68.1**	**63.9**	**63.6**	**55.1**	**37.8**	**49.4**	**64.9**			**83.0**		**56.0**		**98.6**	**79.8**			
								AVERAGE RSD = 65.5 %			65.5																	
Debris Pile C	C78SB-001M-0001-SO	Primary	11/10/2011	0 - 0.8'	Full Suite																			0.076				
	C78SB-003M-0001-SO	QC																						0.088				
	C78SB-005M-0001-SO	QA																						0.18				
								%RSD																49.6				
								AVERAGE RSD = 49.6 %			49.6																	
	RSD % = (STANDARD DEVIATION OF PRIMARY, QC, QA) / (AVERAGE OF PRIMARY, QC, QA) %																											

Significantly elevated concentrations of chromium because of the milling have been observed in other projects and this effect is discussed in Section 6.3.3 of *the Interstate Technology & Regulatory Council Guidance for Incremental Sampling Methodology*, February 2012.

If the RSDs for chromium, potassium, and titanium are removed, the surface soil average RSDs from Debris Pile A are reduced from 20.0 to 13.6.

If the RSDs for chromium, potassium, and titanium are removed, the subsurface soil average RSDs from Debris Pile C is reduced from 44.2 to 35.0.

5.4 Evaluation of Primary and Duplicate Asbestos Analyses and Results

Two small pieces of transite from Debris Pile A were sampled. The primary sample, C78SS-009-0001-BD, was analyzed at a subcontract laboratory for the primary laboratory and a detection of 30 percent Chrysotile was measured. The QA sample, C78SS-009-0002, was analyzed at a subcontract laboratory for the QA laboratory and yielded a detection of 15 percent Chrysotile. Both analyses detected significant amounts of Chrysotile, however, the primary sample showed twice the amount as the QA sample.

Asbestos contents of 30 percent and 40 percent were detected in the transite samples from Debris Piles A and B, respectively, and the roofing sample from Debris Pile B had a level of 35 percent asbestos. All the soil samples were analyzed for asbestos. All the soil samples were non-detect or less than 1 percent asbestos, except for sample C78SB-021M-0001-SO, one of the subsurface soil vertical ISM samples from Debris Pile C, which had a level of 2 percent asbestos.

5.5 Final Site Activities

5.5.1 Field Inspection

On November 10, 2011, Prudent personnel inspected the locations where sampling was performed during this project at CC RVAAP-78 and removed any remaining materials associated with its sampling work.

5.5.2 Final Inspection

After final cleanup and storage of remaining materials, Mark Patterson, the RVAAP Facility Manager, inspected the Prudent area at Building 1036 and indicated that the area was acceptable. Prudent complied with Mr. Patterson request to place yellow caution tape around the Prudent work area in Building 1036.

5.6 TCLP Sampling Results

Analytical results for the surface soil ISM samples, horizontal and vertical subsurface soil ISM samples, and 55-gallon composite drum samples are provided in Tables 5-7 and 5-8. Sampling of the contents of Drum #1 and Drum #2 took place on November 10, 2011. The material within Drum #1 was described as a black/brown tarry, rubbery substance, and the material within Drum #2 was described as a brown organic material which appeared to be dirt, wood, and a squirrel nest. Toxicity Characteristic Leaching Procedure (TCLP) analyses on samples of the contents from the

two drums revealed the contents of Drum #1 to be Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste for lead and the contents of Drum #2 to be non-hazardous. Both drums were removed from the site on February 16, 2012 and disposed of according to state and federal requirements.

Table 5-7. TCLP results for the 55 gallon Drum #1.

			Location	55-Gallon #1							
			Sample ID	C78DM-017-0001-WS		C78DM-017-0001-WS		C78DM-018-0001-WS		C78DM-018-0001-WS	
			Type Sample	Primary		Primary		Primary		Primary	
			Sample Date	11/7/2011		11/7/2011		11/7/2011		11/7/2011	
			Sample Depth (Ft)	Surface		Surface		Surface		Surface	
				(Preliminary Data)				(Preliminary Data)			
Parameter		Units	Regulatory Level	Value	Q	Value	Q	Value	Q	Value	Q
SVOCs - TCLP	1,4-Dichlorobenzene	mg/L		0.0032	U	0.016	U				
	2,4- Dinitrotoluene	mg/L	0.13	0.0032	U	0.08	U				
	2,4,5-Trichlorophenol	mg/L	400	0.0032	U	0.08	U				
	2,4,6- Trichlorophenol	mg/L	2	0.0032	U	0.08	U				
	2-Methylphenol	mg/L	200	0.0032	U	0.016	U				
	3 & 4 Methylphenol	mg/L	200	0.0032	U	0.16	U				
	Hexachlorobenzene	mg/L	0.13	0.0004	U	0.08	U				
	Hexachlorobutadiene	mg/L	0.5	0.0032	U	0.08	U				
	Hexachloroethane	mg/L	3	0.0032	U	0.08	U				
	Nitrobenzene	mg/L	2	0.0004	U	0.016	U				
	Pentachlorophenol	mg/L	100	0.0096	U	0.16	U				
Pesticides - TCLP	Chlordane (Technical)	mg/L	0.03	0.00005	U	0.045	U				
	Endrin	mg/L	0.02	0.000017	U	0.015	U				
	gamma-BHC (Lindane)	mg/L	0.4	0.000015	U	0.015	U				
	Heptachlor	mg/L	0.008	0.000015	U	0.015	U				
	Heptachlor epoxide	mg/L	0.008	0.000015	U	0.015	U				
	Methoxychlor	mg/L	10	0.0001	J	0.0001	J				
	Silver	mg/L	5	0.0026	J	0.0026	J				
	Arsenic	mg/L	5	0.01	U	0.5	U				
	Barium	mg/L	100	0.32	J	0.32	J				
	Cadmium	mg/L	1	0.0051	J	0.0051	J				
	Chromium	mg/L	5	0.44	J	0.44	J				
	Lead	mg/L	5	19		19					

Table 5-7. TCLP results for the 55 gallon Drum #1.

			Location	55-Gallon #1							
			Sample ID	C78DM-017-0001-WS		C78DM-017-0001-WS		C78DM-018-0001-WS		C78DM-018-0001-WS	
			Type Sample	Primary		Primary		Primary		Primary	
			Sample Date	11/7/2011		11/7/2011		11/7/2011		11/7/2011	
			Sample Depth (Ft)	Surface		Surface		Surface		Surface	
				(Preliminary Data)				(Preliminary Data)			
Parameter		Units	Regulatory Level	Value	Q	Value	Q	Value	Q	Value	Q
	Selenium	mg/L	1	0.0052	J	0.0052	J				
	Mercury	mg/L	0.2	0.0002	U	0.002	U				
PCBs - Gas Chromatography	Aroclor 1016	mg/kg		0.025	U	0.067	U				
	Aroclor 1221	mg/kg		0.025	U	0.051	U				
	Aroclor 1232	mg/kg		0.025	U	0.046	U				
	Aroclor 1242	mg/kg		0.025	U	0.041	U				
	Aroclor 1248	mg/kg		0.025	U	0.056	U				
	Aroclor 1254	mg/kg		0.025	U	0.056	U				
	Aroclor 1260	mg/kg		0.025	U	0.056	U				
General Chemistry	Flashpoint	°F		>180		>180					
	Cyanide, Total	mg/kg		0.24	J	0.24	J				
	Sulfide	mg/kg		62	U	31	U				
	Corrosivity	SU		5.5		5.5					
VOC - TCLP	1,1-Dichloroethene	mg/L	0.7					0.013	U	0.025	U
	1,2-Dichloroethane	mg/L	0.5					0.013	U	0.025	U
	2-Butanone	mg/L						0.025	U	0.25	U
	Benzene	mg/L	0.5					0.013	U	0.025	U
	Carbon tetrachloride	mg/L	0.5					0.013	U	0.025	U
	Chlorobenzene	mg/L	100					0.013	U	0.025	U
	Chloroform	mg/L	6					0.013	U	0.025	U
	Tetrachloroethene	mg/L	0.7					0.025	U	0.025	U
	Trichloroethene	mg/L	0.5					0.013	U	0.025	U
	Vinyl chloride	mg/L	0.2					0.013	U	0.025	U

Table 5-8. TCLP results from the 55-gallon Drum #2.

Location			55-Gallon #2							
Sample ID			C78DM-019-0001-WS		C78DM-019-0001-WS		C78DM-020-0001-WS		C78DM-020-0001-WS	
Type Sample			Primary		Primary		Primary		Primary	
Sample Date			11/7/2011		11/7/2011		11/7/2011		11/7/2011	
Sample Depth (Ft)			Surface		Surface		Surface		Surface	
			(Preliminary Data)				(Preliminary Data)			
Parameter		Units	Regulatory Level	Value	Q	Value	Q	Value	Q	Value	Q
	1,4-Dichlorobenzene	mg/L		0.0008	U	0.004	U				
	2,4- Dinitrotoluene	mg/L	0.13	0.0008	U	0.02	U				
	2,4,5-Trichlorophenol	mg/L	400	0.0008	U	0.02	U				
	2,4,6- Trichlorophenol	mg/L	2	0.0008	U	0.02	U				
	2-Methylphenol	mg/L	200	0.0008	U	0.004	U				
	3 & 4 Methylphenol	mg/L	200	0.0008	U	0.04	U				
	Hexachlorobenzene	mg/L	0.13	0.0001	U	0.02	U				
	Hexachlorobutadiene	mg/L	0.5	0.0008	U	0.02	U				
	Hexachloroethane	mg/L	3	0.0008	U	0.02	U				
	Nitrobenzene	mg/L	2	0.0001	U	0.004	U				
	Pentachlorophenol	mg/L	100	0.0024	U	0.04	U				
				0.0000099	U	0.009	U				
				0.000012	J	0.000012	J				
				0.000003	U	0.003	U				
				0.000003	U	0.003	U				
				0.000003	U	0.003	U				
				0.0000096	U	0.009	U				

Table 5-8. TCLP results from the 55-gallon Drum #2.

		Location	55-Gallon #2							
		Sample ID	C78DM-019-0001-WS		C78DM-019-0001-WS		C78DM-020-0001-WS		C78DM-020-0001-WS	
		Type Sample	Primary		Primary		Primary		Primary	
		Sample Date	11/7/2011		11/7/2011		11/7/2011		11/7/2011	
		Sample Depth (Ft)	Surface		Surface		Surface		Surface	
			(Preliminary Data)				(Preliminary Data)			
Parameter		Units	Regulatory Level	Value	Q	Value	Q	Value	Q	Value	Q
Metals - TCLP	Silver	mg/L	5	0.005	U	0.5	U				
	Arsenic	mg/L	5	0.031	J	0.031	J				
	Barium	mg/L	100	0.66	J	0.66	J				
	Cadmium	mg/L	1	0.052	J	0.052	J				
	Chromium	mg/L	5	0.0053	J	0.0053	J				
	Lead	mg/L	5	0.1	J	0.1	J				
	Selenium	mg/L	1	0.01	U	0.25	U				
	Mercury	mg/L	0.2	0.0002	U	0.002	U				
PCBs - Gas Chromatography	Aroclor 1016	mg/kg		0.027	U	0.072	U				
	Aroclor 1221	mg/kg		0.027	U	0.056	U				
	Aroclor 1232	mg/kg		0.027	U	0.05	U				
	Aroclor 1242	mg/kg		0.027	U	0.044	U				
	Aroclor 1248	mg/kg		0.027	U	0.061	U				
	Aroclor 1254	mg/kg		0.027	U	0.061	U				
	Aroclor 1260	mg/kg		0.027	U	0.061	U				
General Chemistry	Flashpoint	°F		>180		>180					
	Cyanide, Total	mg/kg		0.31	J	0.31	J				
	Sulfide	mg/kg		67	U	33	U				
	Corrosivity	SU		7.65		7.65					
VOC	1,1-Dichloroethene	mg/L	0.7					0.013	U	0.025	U

Table 5-8. TCLP results from the 55-gallon Drum #2.

		Location	55-Gallon #2							
		Sample ID	C78DM-019-0001-WS		C78DM-019-0001-WS		C78DM-020-0001-WS		C78DM-020-0001-WS	
		Type Sample	Primary		Primary		Primary		Primary	
		Sample Date	11/7/2011		11/7/2011		11/7/2011		11/7/2011	
		Sample Depth (Ft)	Surface		Surface		Surface		Surface	
			(Preliminary Data)				(Preliminary Data)			
Parameter		Units	Regulatory Level	Value	Q	Value	Q	Value	Q	Value	Q
	1,2-Dichloroethane	mg/L	0.5					0.013	U	0.025	U
	2-Butanone	mg/L						0.025	U	0.25	U
	Benzene	mg/L	0.5					0.013	U	0.025	U
	Carbon tetrachloride	mg/L	0.5					0.013	U J	0.025	U J
	Chlorobenzene	mg/L	100					0.013	U	0.025	U
	Chloroform	mg/L	6					0.013	U	0.025	U
	Tetrachloroethene	mg/L	0.7					0.025	U	0.025	U
	Trichloroethene	mg/L	0.5					0.013	U	0.025	U
	Vinyl chloride	mg/L	0.2					0.013	U	0.025	U

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6.0 CHEMICAL DATA EVALUATION

6.1 Introduction

The initial intrusive investigation at CC RVAAP-78 was conducted in November 2011. The investigation included surface soil ISM sampling at the *apparent* Burn Area and Debris Piles A, B, and C; subsurface soil ISM sampling at Debris Pile C; and sampling of the contents of the two rusted drums. Discussion of the results and QA/QC evaluation was provided in Section 5. This section focuses on evaluating the data collected from the surface and subsurface samples, determining if the detected chemical is a site related chemical (SRC), and if so, is it in concentrations great enough to be considered contamination. There were two primary objectives for this SI: determine if asbestos is present in the soil or materials in the debris Piles and determine if there is chemical contamination. If either of these are identified, then additional remedial actions are required and the next phase in the CERCLA process would likely be an RI.

As stated previously in Section 5, asbestos was identified in the soil from Debris Pile C soil borings at 2% (1% is regulated value). Additionally, roofing samples and transite samples from Debris Piles A and B were both positive for asbestos. Therefore, the asbestos is present in the Debris Piles. It should be noted that because of potential asbestos, surface soil samples at Debris Piles A and B were collected immediately adjacent to the piles. Transite was observed in both Debris Piles A and B. The surface soil ISM sampling at the apparent Burn Area and Debris Pile C and the subsurface soil ISM sampling at Debris Pile C, however, were conducted within these two areas.

Contamination is evaluated in this SI by comparing the maximum concentration of each analyte detected for each of the following samples areas: Debris Pile A, Debris Pile B, and Debris Pile C. Debris Pile C evaluations also included assessing the maximum detected concentrations in surface and subsurface soil. Complete results tables that are arranged by analyte for Debris Pile A, Debris Pile B, and Debris Pile C can be found in Appendix M. Triplicate sample results are presented in the Tables as well. Where triplicate sample results are presented, the Relative Standard Deviation (RSD) for individual analyses are calculated for detections and an average RSD is shown at the bottom of the table for that set of analyses.

The *apparent* Burn Area is within the Debris Pile B. The apparent Burn Area was not individually assessed to determine if SRCs were present because analytes analyzed for in the soil samples were not detected. Additionally, the concentrations of chemicals in the Debris Pile B were much greater than of the detected chemicals in the Apparent Burn Area and were therefore addressed as part of Debris Pile B. The data tables arranged by analysis type for the *apparent* Burn Area are presented in Appendix M.

The determination for SRCs and contamination in this SI is based solely on the maximum value determined for the subsurface at all three Debris Piles and for the vertical and horizontal ISM samples collected from the subsurface from Debris Pile C. The process to identify SRCs and contamination as well as the results are discussed in the following sections.

6.2 Determination of Site Related Chemicals

This section provides an outline of the process used to determine if potential contamination is present at this AOC. Per the *Facility-Wide Human Health Risk Assessment Manual* (USACE 2005), a chemical detected at a concentration greater than the established background value, which is not an essential nutrient, or screened out through a frequency of detection evaluation is identified as an SRC.

An SRC may, or may not, be related to the former operations at the site. The maximum detected concentration of each SRC is then compared to the most stringent FWCUG for the Resident Receptor between the adult and child using the Target Cancer Risk (TCR) level of 10^{-6} or the Target Hazard Quotient (THQ) of 0.1 for each SRC, as outlined in the *Final Facility-Wide Human Health Cleanup Goals for RVAAP* (SAIC 2010). Both risk levels (carcinogenic and non-carcinogenic) were assessed for the Resident Receptor (adult and child) to determine which one was the most stringent for comparison to each SRC. The specific criteria used to identify SRCs and potential contamination at the AOC are described below:

Background Screening — The maximum detected concentrations of inorganic chemicals were compared to the RVAAP background concentrations, where established. If exceedances of background concentrations occurred, the respective inorganic chemicals were identified as SRCs. Several inorganic chemicals were screened against a background concentration of 0 milligrams per kilogram (mg/kg) (e.g., cadmium, silver). A value of 0 mg/kg was assigned as background when the chemical was not detected in any of the samples collected during the background study.

Screening of Essential Human Nutrients — Chemicals that are essential nutrients (e.g., calcium, chloride, iodine, iron, magnesium, potassium, phosphorous, and sodium) are an integral part of the human food supply and often added to foods as supplements. The USEPA recommends these chemicals not be evaluated unless they are grossly elevated relative to background concentrations or would exhibit toxicity at the observed concentrations (USEPA 1989).

Frequency of Detection/WOE — A frequency of detection evaluation was not completed as part of the WOE since less than 20 soil samples were collected during this investigation. Therefore, frequency of detection was not used to further screen the identified SRCs as part of this SI. The SRCs that exceeded the most stringent Resident Receptor FWCUGs using the TCR level of 10^{-6} or THQ = 0.1 for non-carcinogenic risks are generally evaluated further using a WOE approach, to determine if the SRC is AOC-related. A WOE evaluation considers the SRCs that exceeded their FWCUGs, as described above, to determine if the chemical should be identified as potential contamination. If the results of the WOE evaluation indicated that potential contamination was present, then an additional investigation, such as an RI, is recommended. However, if no potential contamination was identified, then NFA is recommended. Since this SI involves asbestos and clearly has potential hazards, as WOE evaluation was not completed.

If no FWCUG has been developed for the particular chemical, then the USEPA's Regional Screening Levels (RSLs) (USEPA 2015) for the Residential Receptor were used for comparison using the same TCR of 10^{-6} and THQ of 0.1. If potential contamination is identified in this SI, it indicates that further investigation under CERCLA, in the form of an RI, is warranted at this AOC.

The maximum surface and subsurface soil chemical concentrations detected during this sampling are provided on Table 6-1 for Debris Pile A and Table 6-2 for Debris Pile B. Table 6-3 presents the maximum value assessed in surface soils from Debris C and Table 6-4 presents the maximum from subsurface soils from Debris Pile C samples. Many analytes in these tables are listed (qualified) as non-detected values (U) or estimated values (J). Generally, these would not be evaluated to determine if they are SRCs. These chemicals are retained and evaluated to ensure any potential contamination is identified.

As indicated in Tables 6-1, 6-2, 6-3, and 6-4, all organic chemicals that were detected were identified as SRCs by default since there is no background values established for the RVAAP restoration program for these types of chemicals. The SRC analysis was completed for the metals that were detected in the surface soil for each of the three sites as well as the subsurface at Debris Pile C. The following lists the metals (based on the maximum value) from each Debris Pile that were identified as SRCs:

- Debris Pile A - Surface Soil (Table 6-1): manganese.
- Debris Pile B - Surface Soil (Table 6-2): arsenic, chromium and manganese.
- Debris Pile C - Surface Soil (Table 6-3): arsenic, chromium, manganese.
- Debris Pile C - Subsurface Soil (Table 6-4): cadmium and manganese.

6.3 Determination of Potential Chemical Contamination

The next step in determining if chemical contamination is present in the Debris Piles was to compare the maximum value for each chemical determined to be an SRC to that of the most stringent FWCUG for the Resident Receptor. The most stringent value between the adult and the child was selected at the most stringent value for between the FWCUGs at the 10-6 cancer risk level or the HQ of 0.1 level. The last column in Tables 6-1 through 6-4 have a "Yes" in them if the chemical was identified as potential contamination which indicates additional remedial action is warranted.

The determination of potential contamination was completed for all chemicals identified as SRCs. that were detected in the surface soil for each of the three sites as well as the subsurface at Debris Pile C. The following lists the chemicals identified as contamination (based on the maximum value) from each Debris Pile:

- Debris Pile A - Surface Soil (Table 6-1):
    - Explosives/Propellants: 1,3-dinitrobenzene (qualified as a U value - non-detect).
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value) and benzo(a)pyrene.
    - Pesticides/Herbicides, PCBs, and VOCs: none.
- Debris Pile B - Surface Soil (Table 6-2):

- Metals: arsenic, chromium, and manganese.
- Explosives/Propellants: 2,4,6-trinitrolouene (qualified as a J value - estimated).
- SVOCs: 2-methyl-4,6-dinitro.phenol (qualified as a UJ value); bis(2-chloroethyl) ether; benzo(a)pyrene; and hexachloro-cyclopentadiene.
- PCBs: Aroclor 1254 value was 0.21 mg/kg and screening value is 0.21 mg/kg).
- Pesticides/Herbicides and VOCs: none.

- Debris Pile C - Surface Soil (Table 6-3):
  - Metals: arsenic, chromium, manganese, and nickel.
  - Explosives/Propellants: none.
  - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; bis(2-chloroethyl)ether; and hexachlorocyclopentadiene.
  - Pesticides/Herbicides, PCBs, and VOCs: none

- Debris Pile C - Subsurface Soil (Table 6-4):
  - Metals: cadmium and manganese.
  - Explosives/Propellants: none.
  - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; benzo(b)fluoroanthene; bis (2-chloroethyl)ether; dibenz(a,h) anthracene; N-nitroso-di-n-propylamine; and hexachloro-cyclopentadiene.
  - PCBs: Aroclor 1254.
  - Pesticides/Herbicides and VOCs: none.

Table 6-1. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile A using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile A Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSLs (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Inorganics										
Aluminum	mg/kg	5830	17,700	No	Less BG		7,380	52932	nc	Not an SRC
Antimony	mg/kg	2.40	0.96	Yes	> BG		2.82	13.60	nc	No
Arsenic	mg/kg	8.40	15.4	No	Less BG		0.524	0.43	ca	Not an SRC
Barium	mg/kg	82	88.4	No	Less BG		1,413	8,966	nc	Not an SRC
Beryllium	mg/kg	0.64	0.88	No	Less BG	16			nc	Not an SRC
Cadmium	mg/kg	0.57J	0	Yes	>BG		6.41	22.30	nc	No
Calcium	mg/kg	3900	15,800	No	Ess. Nutrient					Ess. Nutrient
Chromium	mg/kg	28	17	Yes	> BG		8,147	19.7	nc	No
Cobalt	mg/kg	8.20	0.47	Yes	>BG		131	803	nc	No
Copper	mg/kg	37.20	0.85	Yes	>BG		311	2714	nc	No
Iron	mg/kg	35000	964	Yes	Ess. Nutrient		2,313	19,010	nc	Ess. Nutrient
Lead	mg/kg	145	0.32	Yes	>BG		400		nc	No
Magnesium	mg/kg	1600	95.6	Yes	Ess. Nutrient	2.3				Ess. Nutrient
Manganese	mg/kg	650	13.4	Yes	>BG		293	1,482	nc	Yes
Mercury	mg/kg	.064J	0.0057	Yes	>BG		2.27	16.50	nc	No
Nickel	mg/kg	25	0.61	Yes	>BG		155	1346	nc	No
Potassium	mg/kg	733		Yes	Ess. Nutrient					Ess. Nutrient
Selenium	mg/kg	0.91	0.15	Yes	>BG	39			nc	No
Silver	mg/kg	.15J	0.045	Yes	>BG		38.6	324.00	nc	No
Sodium	mg/kg	18J		Yes	Ess. Nutrient					Ess. Nutrient
Thallium	mg/kg	.1J	1.2	No	<BG		0.612	4.76	nc	No
Vanadium	mg/kg	12.90	5.3	Yes	>BG		44.9	156	nc	No
Zinc	mg/kg	150	62	Yes	>BG		2,321	19,659	nc	No
Organics										
Explosives/Propellants										
1,3,5-Trinitrobenzene	mg/kg	.13J	0	Yes			225	1528	nc	No
1,3-Dinitrobenzene	mg/kg	.99U	0	Yes			0.765	5.94	nc	Yes
2,4,6-Trinitrobenzene	mg/kg	3.90	0	Yes			3.65	21.10	nc	Yes
2,4-Dinitrotoluene	mg/kg	.039J	0	Yes			1.1	0.75	ca	No
2,6-Dinitrotoluene	mg/kg	.099U	0	Yes			1.1	0.77	ca	No
2-Amino-4,6-Dinitrotoluene	mg/kg	0.44	0	Yes			1.54	12.60		No
2-Nitrotoluene	mg/kg	.09U	0	Yes			3.88	6.03	ca	No
3-Nitrotoluene	mg/kg	.11U	0	Yes		25			nc	No
4-Amino-2,6-Dinitrotoluene	mg/kg	0.74	0	Yes			1.54	12.80		No

Table 6-1. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile A using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile A Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSLs (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
4-Nitrotoluene	mg/kg	.1U	0	Yes			52.5	81.60	ca	No
HMX	mg/kg	.12U	0	Yes			359	1909	nc	No
Nitrobenzene	mg/kg	.1U	0	Yes		2			nc	No
Nitrocellulose	mg/kg	4J	0	Yes		190,000,000			nm	No
Nitroglycerin	mg/kg	.5U	0	Yes			52.5	81.60	ca	No
Nitroguanidine	mg/kg	.12J	0	Yes		630			nc	No
RDX	mg/kg	.14U	0	Yes			8.03	163	ca	No
Tetryl	mg/kg	.09U	0	Yes		16			n	No
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	5.8			nc	No
1,2-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180			nc	No
1,3-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180*			nc	No
1,4-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	2.6			ca	No
2,4,5-Trichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
2,4,6-Trichlorophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	6.3			nc	No
2,4-Dichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	19			nc	No
2,4-Dimethylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	130			nc	No
2,4-Dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	13			nc	No
2-Chloronaphthalene	mg/kg	0.51 U	0	Yes	Det. Organic	480			nc	No
2-Chlorophenol	mg/kg	0.51 U	0	Yes	Det. Organic	39			nc	No
2-Methyl-4,6-dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	0.51			nc	Yes
2-Methylnaphthalene	mg/kg	0.068 U	0	Yes	Det. Organic		30.6	238	nc	No
2-Methylphenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	320			nc	No
2-Nitrophenol	mg/kg	0.51 U	0	Yes	Det. Organic		61.2*	476*		No
3,3'-Dichlorobenzidine	mg/kg	0.82 UJ	0	Yes	Det. Organic	1.2			ca	No
4-Bromophenyl phenyl ether	mg/kg	0.51 U	0	Yes	Det. Organic	0.68*				No
4-Chloro-3-methylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
4-Chlorophenyl phenyl ether	mg/kg	.51U	0	Yes	Det. Organic	0.68*				No
3 & 4-Methylphenol	mg/kg	1.5U	0	Yes	Det. Organic	31			nc	No
4-Nitrophenol	mg/kg	082U	0	Yes	Det. Organic		61.2	476		No
Acenaphthene	mg/kg	0.05	0	Yes	Det. Organic	360			nc	No
Acenaphthylene	mg/kg	0.01	0	Yes	Det. Organic	360*			nc	No
Anthracene	mg/kg	0.12	0	Yes	Det. Organic	1800	---	---	nc	No
Benz(a)anthracene	mg/kg	0.28	0	Yes	Det. Organic	16	0.65	0.22	ca	No
Benzo(a)pyrene	mg/kg	0.24	0	Yes	Det. Organic		0.065	0.02	ca	Yes
Benzo(b)fluoranthene	mg/kg	0.41	0	Yes	Det. Organic		0.65	0.22	ca	No
Benzo(g,h,i)perylene	mg/kg	0.13	0	Yes	Det. Organic	1.6			ca	No

Table 6-1. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile A using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile A Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSLs (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Benzo(k)fluoranthene	mg/kg	0.14	0	Yes	Det. Organic	1.6	6.5	2.21	ca	No
Benzoic Acid	mg/kg	6.70	0	Yes	Det. Organic	25000			nc	No
Bis(2-chloroethoxy)methane	mg/kg	1U	0	Yes	Det. Organic	23	23	178	nc	No
Bis(2-chloroethyl)ether	mg/kg	1U	0	Yes	Det. Organic	0.23			ca	No
Bis(2-chloroisopropyl) ether	mg/kg	1U	0	Yes	Det. Organic	310			nc	No
Bis(2-ethylhexyl)phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	39			ca	No
Butyl benzyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	290			nc	No
Cabazole	mg/kg	.51U	0	Yes	Det. Organic		44.6	69.40	ca	No
Chrysene	mg/kg	0.31	0	Yes	Det. Organic	16	65.0	22.10	ca	No
Di-n-butyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	630			nc	No
Di-n-octyphthalate	mg/kg	0.51 U	0	Yes	Det. Organic	63			nc	No
Dibenz(a,h)anthracene	mg/kg	0.03	0	Yes	Det. Organic	160	0.065	0.02	ca	No
Dibenzofuran	mg/kg	.034J	0	Yes	Det. Organic		15.3	119	nc	No
Diethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Dimethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Fluoranthene	mg/kg	0.72	0	Yes	Det. Organic		163	276	nc	No
Fluorene	mg/kg	0.06	0	Yes	Det. Organic		243	737	nc	No
Hexachlorobenzene	mg/kg	.068U	0	Yes	Det. Organic	0.21			ca	No
Hexachlorobutadiene	mg/kg	.51U	0	Yes	Det. Organic	1.2			nc	No
Hexachlorocyclopentadiene	mg/kg	3.4U	0	Yes	Det. Organic	0.18			nc	No
Hexachloroethane	mg/kg	.51U	0	Yes	Det. Organic	1.8			nc	No
Indeno(1,2,3-cd)pyrene	mg/kg	0.12	0	Yes	Det. Organic		0.65	0.22	ca	No
Isophorone	mg/kg	0.51 U	0	Yes	Det. Organic	570			ca	No
N-Nitroso-di-n-propylamine	mg/kg	0.51 U	0	Yes	Det. Organic		0.12	0.13	ca	Yes
N-Nitrosodiphenylamine	mg/kg	.028UJ	0	Yes	Det. Organic	110			ca	No
Naphthalene	mg/kg	0.04	0	Yes	Det. Organic		122	368	ca	No
Pentachlorophenol	mg/kg	.82UJ	0	Yes	Det. Organic		4.91	2.12	ca	No
Phenanthrene	mg/kg	0.50	0	Yes	Det. Organic	360*			nc	no
Phenol	mg/kg	0.12	0	Yes	Det. Organic	1900			nc	No
Pyrene	mg/kg	0.54	0	Yes	Det. Organic		122	207.00	nc	No
Pesticides/Herbicides										
4,4'-DDD	mg/kg	0.02U	0	Yes	Det. Organic	2.3			ca	No
4,4'-DDE	mg/kg	0.017UJ	0	Yes	Det. Organic		3	4.08	ca	No
4,4'-DDT	mg/kg	0.02UJ	0	Yes	Det. Organic	1.9			ca	No
Aldrin	mg/kg	0.041U	0	Yes	Det. Organic		0.053	0.08	ca	No
Dieldrin	mg/kg	0.017U	0	Yes	Det. Organic		0.056	0.09	ca	No
Endosulfan I	mg/kg	0.017U	0	Yes	Det. Organic	47			nc	No

Table 6-1. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile A using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile A Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSLs (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Endosulfan II	mg/kg	0.025U	0	Yes	Det. Organic	47*			nc	No
Endosulfan Sulfate	mg/kg	0.031U	0	Yes	Det. Organic	47*			nc	No
Endrin	mg/kg	0.017U	0	Yes	Det. Organic		1.12	1.77	nc	No
Endrin Aldehyde	mg/kg	0.031UJ	0	Yes	Det. Organic	1.9			nc	No
Endrin Ketone	mg/kg	0.02U	0	Yes	Det. Organic	1.9			nc	No
Heptachlor	mg/kg	.036U	0	Yes	Det. Organic	0.13	0.198	0.31	ca	No
Heptachlor Epoxide	mg/kg	.025U	0	Yes	Det. Organic	0.07	0.098	0.15	ca	No
Lindane	mg/kg	.025U	0	Yes	Det. Organic	0.57			ca	No
Methoxychlor	mg/kg	0.051UJ	0	Yes	Det. Organic	32			nc	No
Toxaphene	mg/kg	.68U	0	Yes	Det. Organic	0.49			ca	No
alpha-BHC	mg/kg	0.025U	0	Yes	Det. Organic	0.086			ca	No
alpha-Chlordane	mg/kg	0.031U	0	Yes	Det. Organic	1.7			ca	No
beta-BHC	mg/kg	.036U	0	Yes	Det. Organic	1.7	0.496	0.77	ca	No
delta-BHC	mg/kg	.041U	0	Yes	Det. Organic	1.7				No
gamma-Chlordane	mg/kg	.017UJ	0	Yes	Det. Organic	1.7	---	---	ca	No
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	0.33U	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1221	mg/kg	0.25U	0	Yes	Det. Organic	0.20			ca	No
Aroclor 1232	mg/kg	0.23U	0	Yes	Det. Organic	0.17			ca	No
Aroclor 1242	mg/kg	0.2U	0	Yes	Det. Organic	0.23			ca	No
Aroclor 1248	mg/kg	0.28U	0	Yes	Det. Organic		0.349	0.20	ca	No
Aroclor 1254	mg/kg	0.55U	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1260	mg/kg	0.28U	0	Yes	Det. Organic		0.349	0.20	ca	No
Volatile Organic Compounds										
1,1,1-Trichloroethane	mg/kg	0.02UJ	0	Yes	Det. Organic	810			nc	No
1,1,2,2-Tetrachloroethane	mg/kg	0.024UJ	0	Yes	Det. Organic	0.6			ca	No
1,1,2-Trichloroethane	mg/kg	0.024UJ	0	Yes	Det. Organic	0.15			nc	No
1,1-Dichloroethene	mg/kg	0.024UJ	0	Yes	Det. Organic	23			nc	No
1,1-Dichloroethane	mg/kg	0.024UJ	0	Yes	Det. Organic	3.6			ca	No
1,2,-Dichloroethane	mg/kg	0.024UJ	0	Yes	Det. Organic	0.46			ca	No
1,2-Dichloroethane	mg/kg	0.024UJ	0	Yes	Det. Organic	16			nc	No
1,2,-Dichloropropane	mg/kg	0.48U	0	Yes	Det. Organic	1.0			ca	No
2-Butanone	mg/kg	0.0096UJ	0	Yes	Det. Organic	2700			nc	No
2-Hexanone	mg/kg	0.096UJ	0	Yes	Det. Organic	20			nc	No
4-Methyl-2-pentanone	mg/kg	0.048UJ	0	Yes	Det. Organic	3300			nc	No
Acetone	mg/kg	0.19UJ	0	Yes	Det. Organic	6100			nc	No
Benzene	mg/kg	0.024UJ	0	Yes	Det. Organic	1.2			ca	No

Table 6-1. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile A using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile A Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSLs (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Bromodichloromethane	mg/kg	0.024UJ	0	Yes	Det. Organic	0.29			ca	No
Bromoform	mg/kg	0.024UJ	0	Yes	Det. Organic	19			ca	No
Bromomethane	mg/kg	0.024UJ	0	Yes	Det. Organic	0.68			nc	No
Carbon Disulfide	mg/kg	0.048UJ	0	Yes	Det. Organic	77			nc	No
Carbon Tetrachloride	mg/kg	0.024UJ	0	Yes	Det. Organic	0.65			ca	No
Chlorobenzene	mg/kg	0.0096UJ	0	Yes	Det. Organic	28			nc	No
Chloroethane	mg/kg	0.0096UJ	0	Yes	Det. Organic	1400			nc	No
Chloroform	mg/kg	0.096UJ	0	Yes	Det. Organic	0.32			ca	No
Chloromethane	mg/kg	0.024UJ	0	Yes	Det. Organic	11			nc	No
Dibromochloromethane	mg/kg	0.024UJ	0	Yes	Det. Organic	8.3			ca	No
Ethylbenzene	mg/kg	0.24U	0	Yes	Det. Organic	5.8			nc	No
Xylene (total)	mg/kg	.48U	0	Yes	Det. Organic	58			nc	No
Methylene Chloride	mg/kg	0.17UJ	0	Yes	Det. Organic	35			nc	No
Styrene	mg/kg	0.0096UJ	0	Yes	Det. Organic	600			nc	No
Tetrachloroethene	mg/kg	0.024UJ	0	Yes	Det. Organic	8.1			nc	No
Toluene	mg/kg	0.024UJ	0	Yes	Det. Organic	490			nc	No
Trichloroethene	mg/kg	0.024UJ	0	Yes	Det. Organic	0.41			nc	No
Vinyl Chloride	mg/kg	0.024UJ	0	Yes	Det. Organic	0.059			ca	No
cis-1,3-Dichloropropene	mg/kg	0.024UJ	0	Yes	Det. Organic	1.8			ca	No
trans-1,3-Dichloropropene	mg/kg	0.024UJ	0	Yes	Det. Organic	1.8			ca	No

*value derived from RSL of a surrogate
ca=carcinogenic
HMX=Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
na=Non-carcinogenic
PCB=Polychlorinated biphenyl
RSL=USEPA Regional Screening Levels
RDX=Hexahydro-1,3,5-trinitro-1,3,5-triazine
Res. = Residential

Chemical	Surrogate
acenphthylene	acenapthene
4-bromophenyl phenyl ether	4-bromophenyl ether
di-methyl ohthalate	diethyl phthalate
1,2 dichlorobenzene	1,3 dochorobenzene
2-nitrophenol	4-nitrophenol

Table 6-2. Screening results for the determination of SRCs and Contamination in surface soil from Debris Pile B using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile B Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Inorganics										
Aluminum	mg/kg	5,000	17,700	No	< BG		7,380	52932.00	nc	Not an SRC
Antimony	mg/kg	2.3	0.96	Yes	>BG		2.82	13.60	nc	No
Arsenic	mg/kg	27	15.4	Yes	>BG		0.524	0.43	ca	Yes
Barium	mg/kg	150	88.4	Yes	>BG		1,413	8,966	nc	No
Beryllium	mg/kg	0.98	0.88	Yes	>BG	16			nc	No
Cadmium	mg/kg	0.73 U	0	Yes	>BG		6.41	22.30	nc	No
Calcium	mg/kg	2,300	15,800	Ess. Nutrient						Ess. Nutrient
Chromium	mg/kg	23	17	Yes	>BG		8,147	19.70	nc	Yes
Cobalt	mg/kg	7.4	0.47	Yes	>BG		131	803.00	nc	No
Copper	mg/kg	36	0.85	Yes	>BG		311	2714.00	nc	No
Iron	mg/kg	31,000	964	Ess. Nutrient			2,313	19,010	nc	Ess. Nutrient
Lead	mg/kg	230	0.32	Yes	>BG		400	---	nc	No
Magnesium	mg/kg	1,500	95.6	Ess. Nutrient						Ess. Nutrient
Manganese	mg/kg	500	13.4	Yes	>BG		293	1,482	nc	Yes
Mercury	mg/kg	0.23	0.0057	Yes	>BG		2.27	16.50	nc	No
Nickel	mg/kg	22	0.61	Yes	>BG		155	1346.00	nc	No
Potassium	mg/kg	680		Ess. Nutrient						Ess. Nutrient
Selenium	mg/kg	4	0.15	Yes	>BG	39			nc	No
Silver	mg/kg	0.33 J	0.045	Yes	>BG		38.6	324.00	nc	No
Sodium	mg/kg	64 J		Ess. Nutrient						Ess. Nutrient
Thallium	mg/kg	1.1	1.2	No	< BG		0.612	4.76	nc	No
Vanadium	mg/kg	13	5.3	Yes	>BG		44.9	156.00	nc	No
Zinc	mg/kg	230	62	Yes	>BG		2,321	19,659	nc	No
Organics										
Explosives/Propellants										
1,3,5-Trinitrobenzene	mg/kg	0.3 J+	0	Yes	Det. Organic		225	1528.00	nc	No
1,3-Dinitrobenzene	mg/kg	0.1 U	0	Yes	Det. Organic		0.765	5.94	nc	No
2,4,6-Trinitrobenzene	mg/kg	5.8 J	0	Yes	Det. Organic		3.65	21.10	nc	Yes
2,4-Dinitrotoluene	mg/kg	0.07 J	0	Yes	Det. Organic		1.1	0.75	ca	No
2,6-Dinitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		1.1	0.77	ca	No
2-Amino-4,6-Dinitrotoluene	mg/kg	1 J+	0	Yes	Det. Organic		1.54	12.60		No
2-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		3.88	6.03	ca	No
3-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic	25			nc	No

Table 6-2. Screening results for the determination of SRCs and Contamination in surface soil from Debris Pile B using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile B Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
4-Amino-2,6-Dinitrotoluene	mg/kg	1.1 J+	0	Yes	Det. Organic		1.54	12.80		No
4-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		52.5	81.60	ca	No
HMX	mg/kg	0.1 U	0	Yes	Det. Organic		359	1909.00	nc	No
Nitrobenzene	mg/kg	0.1 U	0	Yes	Det. Organic	2			nc	No
Nitrocellulose	mg/kg	3 J	0	Yes	Det. Organic	190,000,000			nm	No
Nitroglycerin	mg/kg	0.25 U	0	Yes	Det. Organic		52.5	81.60	ca	No
Nitroguanidine	mg/kg	0.039 U	0	Yes	Det. Organic	630			nc	No
RDX	mg/kg	0.1 U	0	Yes	Det. Organic		8.03	163.00	ca	No
Tetryl	mg/kg	0.1 U	0	Yes	Det. Organic	16			n	No
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	5.8			nc	No
1,2-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180			nc	No
1,3-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180*			nc	No
1,4-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	2.6			ca	No
2,4,5-Trichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
2,+A53:G1044,6-Trichlorophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	6.3			nc	No
2,4-Dichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	19			nc	No
2,4-Dimethylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	130			nc	No
2,4-Dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	13			nc	No
2-Chloronaphthalene	mg/kg	0.51 U	0	Yes	Det. Organic	480			nc	No
2-Chlorophenol	mg/kg	0.51 U	0	Yes	Det. Organic	39			nc	No
2-Methyl-4,6-dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	0.51			nc	Yes
2-Methylnaphthalene	mg/kg	0.068 U	0	Yes	Det. Organic		30.6	238	nc	No
2-Methylphenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	320			nc	No
2-Nitrophenol	mg/kg	0.51 U	0	Yes	Det. Organic		61.2*	476*		No
3,3'-Dichlorobenzidine	mg/kg	0.82 UJ	0	Yes	Det. Organic	1.2			ca	No
4-Bromophenyl phenyl ether	mg/kg	0.51 U	0	Yes	Det. Organic	0.68*			ca	No
4-Chloro-3-methylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
4-Chlorophenyl phenyl ether	mg/kg	0.51 U	0	Yes	Det. Organic	0.68*				No
3 & 4-Methylphenol	mg/kg	4.1 U	0	Yes	Det. Organic	31			nc	No
4-Nitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic		61.2	476		No
Acenaphthene	mg/kg	0.068 U	0	Yes	Det. Organic	360			nc	No
Acenaphthylene	mg/kg	0.068 U	0	Yes	Det. Organic	360*			nc	No
Anthracene	mg/kg	0.068 U	0	Yes	Det. Organic	1800			nc	No
Benz(a)anthracene	mg/kg	0.068 U	0	Yes	Det. Organic		0.65	0.22	ca	No
Benzo(a)pyrene	mg/kg	0.068 U	0	Yes	Det. Organic		0.065	0.02	ca	Yes
Benzo(b)fluoranthene	mg/kg	0.068 U	0	Yes	Det. Organic		0.65	0.22	ca	No

Table 6-2. Screening results for the determination of SRCs and Contamination in surface soil from Debris Pile B using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile B Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Benzo(g,h,i)perylene	mg/kg	0.068 U	0	Yes	Det. Organic	1.6			ca	No
Benzo(k)fluoranthene	mg/kg	0.068 U	0	Yes	Det. Organic		6.5	2.21	ca	No
Benzoic Acid	mg/kg	6.7 U	0	Yes	Det. Organic	25000			nc	No
Bis(2-chloroethoxy)methane	mg/kg	1 U	0	Yes	Det. Organic		23	178	nc	No
Bis(2-chloroethyl)ether	mg/kg	1 U	0	Yes	Det. Organic	0.23			ca	Yes
Bis(2-chloroisopropyl) ether	mg/kg	1 U	0	Yes	Det. Organic	310			nc	No
Bis(2-ethylhexyl)phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	39			ca	No
Butyl benzyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	290			nc	No
Cabazole	mg/kg	0.51 U	0	Yes	Det. Organic		44.6	69.40	ca	No
Chrysene	mg/kg	0.068 U	0	Yes	Det. Organic	16	65.0	22.10	ca	No
Di-n-butyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	630			nc	No
Di-n-octyphthalate	mg/kg	0.51 U	0	Yes	Det. Organic	63			nc	No
Dibenz(a,h)anthracene	mg/kg	0.068 U	0	Yes	Det. Organic	Pesticides/Herbicides,	0.065	0.02	ca	No
Dibenzofuran	mg/kg	0.51 U	0	Yes	Det. Organic		15.3	119	nc	No
Diethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Dimethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Fluoranthene	mg/kg	0.087 J-	0	Yes	Det. Organic		163	276	nc	No
Fluorene	mg/kg	0.068 U	0	Yes	Det. Organic		243	737	nc	No
Hexachlorobenzene	mg/kg	0.068 U	0	Yes	Det. Organic	0.21			ca	No
Hexachlorobutadiene	mg/kg	0.51 U	0	Yes	Det. Organic	1.2			nc	No
Hexachlorocyclopentadiene	mg/kg	3.4 U	0	Yes	Det. Organic	0.18			nc	Yes
Hexachloroethane	mg/kg	0.51 U	0	Yes	Det. Organic	1.8			nc	No
Indeno(1,2,3-cd)pyrene	mg/kg	0.068 U	0	Yes	Det. Organic		0.65	0.22	ca	No
Isophorone	mg/kg	0.51 U	0	Yes	Det. Organic	570			ca	No
N-Nitroso-di-n-propylamine	mg/kg	0.51 U	0	Yes	Det. Organic		0.12	0.13	ca	No
N-Nitrosodiphenylamine	mg/kg	0.51 U	0	Yes	Det. Organic	110			ca	No
Naphthalene	mg/kg	0.068 U	0	Yes	Det. Organic		122	368	ca	No
Pentachlorophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic		4.91	2.12	ca	No
Phenanthrene	mg/kg	0.1 J-	0	Yes	Det. Organic	360*			nc	No
Phenol	mg/kg	0.51 U	0	Yes	Det. Organic	1900			nc	No
Pyrene	mg/kg	0.057 J	0	Yes	Det. Organic		122	207.00	nc	No
Pesticides/Herbicides										
4,4'-DDD	mg/kg	0.01 U	0	Yes	Det. Organic	2.3			ca	No
4,4'-DDE	mg/kg	0.005 J	0	Yes	Det. Organic		3	4.08	ca	No
4,4'-DDT	mg/kg	0.0081 J	0	Yes	Det. Organic	1.9			ca	No
Aldrin	mg/kg	0.02 U	0	Yes	Det. Organic		0.053	0.08	ca	No
Dieldrin	mg/kg	0.0042 J	0	Yes	Det. Organic		0.056	0.09	ca	No

Table 6-2. Screening results for the determination of SRCs and Contamination in surface soil from Debris Pile B using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile B Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Endosulfan I	mg/kg	0.0086 U	0	Yes	Det. Organic	47	for Endosulfan		nc	No
Endosulfan II	mg/kg	0.013 U	0	Yes	Det. Organic	47	""		nc	No
Endosulfan Sulfate	mg/kg	0.015 U	0	Yes	Det. Organic	47	""		nc	No
Endrin	mg/kg	0.0068 U	0	Yes	Det. Organic		1.12	1.77	nc	No
Endrin Aldehyde	mg/kg	0.015 U	0	Yes	Det. Organic	1.9	---	---	nc	No
Endrin Ketone	mg/kg	0.01 U	0	Yes	Det. Organic	1.9			nc	No
Heptachlor	mg/kg	0.018 U	0	Yes	Det. Organic	0.13	0.198	0.31	ca	No
Heptachlor Epoxide	mg/kg	0.013 U	0	Yes	Det. Organic	0.07	0.098	0.15	ca	No
Lindane	mg/kg	0.013 U	0	Yes	Det. Organic	0.57			ca	No
Methoxychlor	mg/kg	0.025 U	0	Yes	Det. Organic	32			nc	No
Toxaphene	mg/kg	0.34 U	0	Yes	Det. Organic	0.49			ca	No
alpha-BHC	mg/kg	0.013 U	0	Yes	Det. Organic	0.086			ca	No
alpha-Chlordane	mg/kg	0.015 U	0	Yes	Det. Organic	1.7	---	---	ca	No
beta-BHC	mg/kg	0.009 J	0	Yes	Det. Organic		0.496	0.77	ca	No
delta-BHC	mg/kg	0.02 U	0	Yes	Det. Organic	1.7			ca	No
gamma-Chlordane	mg/kg	0.0086 U	0	Yes	Det. Organic	1.7	---	---	ca	No
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	0.066 U	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1221	mg/kg	0.051 U	0	Yes	Det. Organic	0.20			ca	No
Aroclor 1232	mg/kg	0.046 U	0	Yes	Det. Organic	0.17			ca	No
Aroclor 1242	mg/kg	0.040 U	0	Yes	Det. Organic	0.23			ca	No
Aroclor 1248	mg/kg	0.056 U	0	Yes	Det. Organic		0.349	0.20	ca	No
Aroclor 1254	mg/kg	0.21	0	Yes	Det. Organic		0.349	0.20	nc	Yes
Aroclor 1260	mg/kg	0.056 U	0	Yes	Det. Organic		0.349	0.20	ca	No
Volatile Organic Compounds										
1,1,1-Trichloroethane	mg/kg	0.02 UJ	0	Yes	Det. Organic	810			nc	No
1,1,2,2-Tetrachloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.6			ca	No
1,1,2-Trichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.15			nc	No
1,1-Dichloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	23			nc	No
1,1-Dichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	3.6			ca	No
1,2,-Dichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.46			ca	No
1,2-Dichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	16	most strigent		nc	No
1,2,-Dichloropropane	mg/kg	0.0096 UJ	0	Yes	Det. Organic	1.0			ca	No
2-Butanone	mg/kg	0.096 UJ	0	Yes	Det. Organic	2700			nc	No
2-Hexanone	mg/kg	0.048 UJ	0	Yes	Det. Organic	20			nc	No
4-Methyl-2-pentanone	mg/kg	0.096 UJ	0	Yes	Det. Organic	3300			nc	No
Acetone	mg/kg	0.19 UJ	0	Yes	Det. Organic	6100			nc	No

Table 6-2. Screening results for the determination of SRCs and Contamination in surface soil from Debris Pile B using the maximum concentration detected per analyte.

Analyte	Units	Debris Pile B Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Benzene	mg/kg	0.024 UJ	0	Yes	Det. Organic	1.2			ca	No
Bromodichloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.29			ca	No
Bromoform	mg/kg	0.024 UJ	0	Yes	Det. Organic	19			ca	No
Bromomethane	mg/kg	0.048 UJ	0	Yes	Det. Organic	0.68			nc	No
Carbon Disulfide	mg/kg	0.024 UJ	0	Yes	Det. Organic	77			nc	No
Carbon Tetrachloride	mg/kg	0.0096 UJ	0	Yes	Det. Organic	0.65			ca	No
Chlorobenzene	mg/kg	0.0096 UJ	0	Yes	Det. Organic	28			nc	No
Chloroethane	mg/kg	0.096 UJ	0	Yes	Det. Organic	1400			nc	No
Chloroform	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.32			ca	No
Chloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	11			nc	No
Dibromochloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	8.3			ca	No
Ethylbenzene	mg/kg	0.24 UJ	0	Yes	Det. Organic	5.8			nc	No
Xylene (total)	mg/kg	0.48 U	0	Yes	Det. Organic	58			nc	No
Methylene Chloride	mg/kg	0.14 UJ	0	Yes	Det. Organic	35			nc	No
Styrene	mg/kg	0.0096 UJ	0	Yes	Det. Organic	600			nc	No
Tetrachloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	8.1			nc	No
Toluene	mg/kg	0.024 UJ	0	Yes	Det. Organic	490			nc	No
Trichloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.41			nc	No
Vinyl Chloride	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.059			ca	No
cis-1,3-Dichloropropene	mg/kg	0.0096 UJ	0	Yes	Det. Organic	1.8			ca	No
trans-1,3-Dichloropropene	mg/kg	0.024 UJ	0	Yes	Det. Organic	1.8			ca	No

*value derived from RSL of a surrogate
ca=carcinogenic
HMX=Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
na=Non-carcinogenic
PCB=Polychlorinated biphenyl
RSL=USEPA Regional Screening Levels
RDX=Hexahydro-1,3,5-trinitro-1,3,5-triazine
Res. = Residential

Chemical	Surrogate
acenphthylene	acenapthene
4-bromophenyl phenyl ether	4-bromophenyl ether
di-methyl ohthalate	diethyl phthalate
1,2 dichlorobenzene	1,3 dochorobenzene
2-nitrophenol	4-nitrophenol

Table 6-3. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Inorganics										
Aluminum	mg/kg	12,000	17,700	No	< BG		7,380	52932.00	nc	Not an SRC
Antimony	mg/kg	1.8 U	0.96	Yes	>BG		2.82	13.60	nc	No
Arsenic	mg/kg	12	15.4	No	>BG		0.524	0.43	ca	Yes
Barium	mg/kg	77	88.4	No	<BG		1,413	8,966	nc	Not an SRC
Beryllium	mg/kg	0.78	0.88	No	<BG	16			nc	Not an SRC
Cadmium	mg/kg	0.41	0	Yes	>BG		6.41	22.30	nc	No
Calcium	mg/kg	4,900	15,800		Ess. Nutrient					Ess. Nutrient
Chromium	mg/kg	21	17	Yes	>BG		8,147	19.70	nc	Yes
Cobalt	mg/kg	9.8	0.47	Yes	>BG		131	803.00	nc	No
Copper	mg/kg	15	0.85	Yes	>BG		311	2714.00	nc	No
Iron	mg/kg	22,000	964		Ess. Nutrient		2,313	19,010	nc	Ess. Nutrient
Lead	mg/kg	21	0.32	Yes	>BG		400	---	nc	No
Magnesium	mg/kg	2,600	95.6		Ess. Nutrient					Ess. Nutrient
Manganese	mg/kg	640	13.4	Yes	>BG		293	1,482	nc	Yes
Mercury	mg/kg	0.045 J	0.0057	Yes	>BG		2.27	16.50	nc	No
Nickel	mg/kg	1,200	0.61	Yes	>BG		155	1346.00	nc	Yes
Potassium	mg/kg	1			Ess. Nutrient					Ess. Nutrient
Selenium	mg/kg	1.2	0.15	Yes	>BG	39			nc	No
Silver	mg/kg	0.014 J	0.045	Yes	>BG		38.6	324.00	nc	No
Sodium	mg/kg	36 J			Ess. Nutrient					Ess. Nutrient
Thallium	mg/kg	0.15 J	1.2	No	< BG		0.612	4.76	nc	No
Vanadium	mg/kg	19	5.3	Yes	>BG		44.9	156.00	nc	No
Zinc	mg/kg	110	62	Yes	>BG		2,321	19,659	nc	No
Organics										
Explosives/Propellants										
1,3,5-Trinitrobenzene	mg/kg	0.1 U	0	Yes	Det. Organic		225	1528.00	nc	No
1,3-Dinitrobenzene	mg/kg	0.1 U	0	Yes	Det. Organic		0.765	5.94	nc	No
2,4,6-Trinitrobenzene	mg/kg	0.25 UJ	0	Yes	Det. Organic		3.65	21.10	nc	No
2,4-Dinitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		1.1	0.75	ca	No
2,6-Dinitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		1.1	0.77	ca	No
2-Amino-4,6-Dinitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		1.54	12.60		No
2-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		3.88	6.03	ca	No

Table 6-3. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
3-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic	25			nc	No
4-Amino-2,6-Dinitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		1.54	12.80		No
4-Nitrotoluene	mg/kg	0.1 U	0	Yes	Det. Organic		52.5	81.60	ca	No
HMX	mg/kg	0.1 U	0	Yes	Det. Organic		359	1909.00	nc	No
Nitrobenzene	mg/kg	0.1 U	0	Yes	Det. Organic	2			nc	No
Nitrocellulose	mg/kg	0.99 J	0	Yes	Det. Organic	190,000,000			nm	No
Nitroglycerin	mg/kg	0.25 U	0	Yes	Det. Organic		52.5	81.60	ca	No
Nitroguanidine	mg/kg	0.04 U	0	Yes	Det. Organic	630			nc	No
RDX	mg/kg	0.1 U	0	Yes	Det. Organic		8.03	163.00	ca	No
Tetryl	mg/kg	0.1 U	0	Yes	Det. Organic	16			n	No
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	5.8			nc	No
1,2-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180			nc	No
1,3-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	180*			nc	No
1,4-Dichlorobenzene	mg/kg	0.51 U	0	Yes	Det. Organic	2.6			ca	No
2,4,5-Trichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
2,4,6-Trichlorophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	6.3			nc	No
2,4-Dichlorophenol	mg/kg	1.5 U	0	Yes	Det. Organic	19			nc	No
2,4-Dimethylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	130			nc	No
2,4-Dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	13			nc	No
2-Chloronaphthalene	mg/kg	0.51 U	0	Yes	Det. Organic	480			nc	No
2-Chlorophenol	mg/kg	0.51 U	0	Yes	Det. Organic	39			nc	No
2-Methyl-4,6-dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	0.51			nc	Yes
2-Methylnaphthalene	mg/kg	0.074	0	Yes	Det. Organic		30.6	238	nc	No
2-Methylphenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	320			nc	No
2-Nitrophenol	mg/kg	0.51 U	0	Yes	Det. Organic		61.2*	476*	nc	No
3,3'-Dichlorobenzidine	mg/kg	0.82 UJ	0	Yes	Det. Organic	1.2			ca	No
4-Bromophenyl phenyl ether	mg/kg	0.51 U	0	Yes	Det. Organic	0.68*			ca	No
4-Chloro-3-methylphenol	mg/kg	1.5 U	0	Yes	Det. Organic	630			nc	No
4-Chlorophenyl phenyl ether	mg/kg	0.51 U	0	Yes	Det. Organic	0.68*			ca	No
4-Methylphenol	mg/kg	4.1 U	0	Yes	Det. Organic	31			nc	No
4-Nitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic		61.2	476	nc	No
Acenaphthene	mg/kg	0.079	0	Yes	Det. Organic	360			nc	No
Acenaphthylene	mg/kg	0.27	0	Yes	Det. Organic	360*			nc	No
Anthracene	mg/kg	0.49	0	Yes	Det. Organic	1800	---	---	nc	No
Benz(a)anthracene	mg/kg	1.7	0	Yes	Det. Organic	16	0.65	0.22	ca	Yes
Benzo(a)pyrene	mg/kg	1.4	0	Yes	Det. Organic	0.016	0.065	0.02	ca	Yes

Table 6-3. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Benzo(b)fluoranthene	mg/kg	1.9	0	Yes	Det. Organic	0.16	0.65	0.22	ca	No
Benzo(g,h,i)perylene	mg/kg	0.8	0	Yes	Det. Organic	1.6			ca	No
Benzo(k)fluoranthene	mg/kg	1.1	0	Yes	Det. Organic	1.6	6.5	2.21	ca	No
Benzoic Acid	mg/kg	6.7 U	0	Yes	Det. Organic	25000			nc	No
Bis(2-chloroethoxy)methane	mg/kg	1 U	0	Yes	Det. Organic	23	23	178	nc	No
Bis(2-chloroethyl)ether	mg/kg	1 U	0	Yes	Det. Organic	0.23			ca	Yes
Bis(2-chloroisopropyl) ether	mg/kg	1 U	0	Yes	Det. Organic	310			nc	No
Bis(2-ethylhexyl)phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	39			ca	No
Butyl benzyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	290			nc	No
Carbazole	mg/kg	0.51 U	0	Yes	Det. Organic		44.6	69.40	ca	No
Chrysene	mg/kg	1.6	0	Yes	Det. Organic	16	65.0	22.10	ca	No
Di-n-butyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	630			nc	No
Di-n-octyphthalate	mg/kg	0.51 U	0	Yes	Det. Organic	63			nc	No
Dibenz(a,h)anthracene	mg/kg	0.068 U	0	Yes	Det. Organic	160	0.065	0.02	ca	No
Dibenzofuran	mg/kg	0.08 J	0	Yes	Det. Organic		15.3	119	nc	No
Diethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Dimethyl phthalate	mg/kg	0.51 U	0	Yes	Det. Organic	5100			nc	No
Fluoranthene	mg/kg	3.8 J-	0	Yes	Det. Organic		163	276	nc	No
Fluorene	mg/kg	0.12	0	Yes	Det. Organic		243	737	nc	No
Hexachlorobenzene	mg/kg	0.068 U	0	Yes	Det. Organic	0.21			ca	No
Hexachlorobutadiene	mg/kg	0.51 U	0	Yes	Det. Organic	1.2			nc	No
Hexachlorocyclopentadiene	mg/kg	3.4 U	0	Yes	Det. Organic	0.18			nc	Yes
Hexachloroethane	mg/kg	0.51 U	0	Yes	Det. Organic	1.8			nc	No
Indeno(1,2,3-cd)pyrene	mg/kg	0.78	0	Yes	Det. Organic		0.65	0.22	ca	No
Isophorone	mg/kg	0.51 U	0	Yes	Det. Organic	570			ca	No
N-Nitroso-di-n-propylamine	mg/kg	0.51 U	0	Yes	Det. Organic		0.12	0.13	ca	No
N-Nitrosodiphenylamine	mg/kg	0.51 U	0	Yes	Det. Organic	110			ca	No
Naphthalene	mg/kg	0.068	0	Yes	Det. Organic		122	368	ca	No
Pentachlorophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic		4.91	2.12	ca	No
Phenanthrene	mg/kg	1.4 J-	0	Yes	Det. Organic	360*			nc	No
Phenol	mg/kg	0.51 U	0	Yes	Det. Organic	1900			nc	No
Pyrene	mg/kg	2.6	0	Yes	Det. Organic		122	207.00	nc	No
Pesticides/Herbicides										
4,4'-DDD	mg/kg	0.02 U	0	Yes	Det. Organic	2.3			ca	No
4,4'-DDE	mg/kg	0.017 U	0	Yes	Det. Organic		3	4.08	ca	No
4,4'-DDT	mg/kg	0.02 U	0	Yes	Det. Organic	1.9			ca	No
Aldrin	mg/kg	0.041 U	0	Yes	Det. Organic		0.053	0.08	ca	No

Table 6-3. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Dieldrin	mg/kg	0.017 U	0	Yes	Det. Organic		0.056	0.09	ca	No
Endosulfan I	mg/kg	0.017 U	0	Yes	Det. Organic	47	for Endosulfan		nc	No
Endosulfan II	mg/kg	0.026 U	0	Yes	Det. Organic	47	""		nc	No
Endosulfan Sulfate	mg/kg	0.031 U	0	Yes	Det. Organic	47	""		nc	No
Endrin	mg/kg	0.017 U	0	Yes	Det. Organic		1.12	1.77	nc	No
Endrin Aldehyde	mg/kg	0.031 U	0	Yes	Det. Organic	1.9	---	---	nc	No
Endrin Ketone	mg/kg	0.02 U	0	Yes	Det. Organic	1.9			nc	No
Heptachlor	mg/kg	0.036 U	0	Yes	Det. Organic		0.198	0.31	ca	No
Heptachlor Epoxide	mg/kg	0.026 U	0	Yes	Det. Organic		0.098	0.15	ca	No
Lindane	mg/kg	0.026 U	0	Yes	Det. Organic	0.57			ca	No
Methoxychlor	mg/kg	0.051 U	0	Yes	Det. Organic	32			nc	No
Toxaphene	mg/kg	0.68 U	0	Yes	Det. Organic	0.49			ca	No
alpha-BHC	mg/kg	0.026 U	0	Yes	Det. Organic	0.086			ca	No
alpha-Chlordane	mg/kg	0.031 U	0	Yes	Det. Organic	1.7	---	---	ca	No
beta-BHC	mg/kg	0.036 U	0	Yes	Det. Organic		0.496	0.77	ca	No
delta-BHC	mg/kg	0.041 U	0	Yes	Det. Organic	1.7			ca	No
gamma-Chlordane	mg/kg	0.017 U	0	Yes	Det. Organic	1.7	---	---	ca	No
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	0.066 U	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1221	mg/kg	0.051 U	0	Yes	Det. Organic	0.20			ca	No
Aroclor 1232	mg/kg	0.046 U	0	Yes	Det. Organic	0.17			ca	No
Aroclor 1242	mg/kg	0.041 U	0	Yes	Det. Organic	0.23			ca	No
Aroclor 1248	mg/kg	0.056 U	0	Yes	Det. Organic		0.349	0.20	ca	No
Aroclor 1254	mg/kg	0.056 U	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1260	mg/kg	0.056 U	0	Yes	Det. Organic		0.349	0.20	ca	No
Volatile Organic Compounds										
1,1,1-Trichloroethane	mg/kg	0.02 UJ	0	Yes	Det. Organic	810			nc	No
1,1,2,2-Tetrachloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.6			ca	No
1,1,2-Trichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.15			nc	No
1,1-Dichloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	23			nc	No
1,1-Dichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	3.6			ca	No
1,2,-Dichloroethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.46			ca	No
1,2-Dichloroethene (total)	mg/kg	0.024 UJ	0	Yes	Det. Organic	16			nc	No
1,2,-Dichloropropane	mg/kg	0.0097 UJ	0	Yes	Det. Organic	1.0			ca	No
2-Butanone	mg/kg	0.097 UJ	0	Yes	Det. Organic	2700			nc	No
2-Hexanone	mg/kg	0.049 UJ	0	Yes	Det. Organic	20			nc	No
4-Methyl-2-pentanone	mg/kg	0.097 UJ	0	Yes	Det. Organic	3300			nc	No

Table 6-3. Screening results for the determination of SRCs and Contamination in surface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Surface	Background Criteria-Surface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Acetone	mg/kg	0.19 UJ	0	Yes	Det. Organic	6100			nc	No
Benzene	mg/kg	0.024 UJ	0	Yes	Det. Organic	1.2			ca	No
Bromodichloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.29			ca	No
Bromoform	mg/kg	0.024 UJ	0	Yes	Det. Organic	19			ca	No
Bromomethane	mg/kg	0.049 UJ	0	Yes	Det. Organic	0.68			nc	No
Carbon Disulfide	mg/kg	0.024 UJ	0	Yes	Det. Organic	77			nc	No
Carbon Tetrachloride	mg/kg	0.0097 UJ	0	Yes	Det. Organic	0.65			ca	No
Chlorobenzene	mg/kg	0.0097 UJ	0	Yes	Det. Organic	28			nc	No
Chloroethane	mg/kg	0.097 UJ	0	Yes	Det. Organic	1400			nc	No
Chloroform	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.32			ca	No
Chloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	11			nc	No
Dibromochloromethane	mg/kg	0.024 UJ	0	Yes	Det. Organic	8.3			ca	No
Ethylbenzene	mg/kg	0.24 U	0	Yes	Det. Organic	5.8			nc	No
Xylene (total)	mg/kg	0.49 U	0	Yes	Det. Organic	58			nc	No
Methylene Chloride	mg/kg	0.14 UJ	0	Yes	Det. Organic	35			nc	No
Styrene	mg/kg	0.0097 UJ	0	Yes	Det. Organic	600			nc	No
Tetrachloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	8.1			nc	No
Toluene	mg/kg	0.024 UJ	0	Yes	Det. Organic	490			nc	No
Trichloroethene	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.41			nc	No
Vinyl Chloride	mg/kg	0.024 UJ	0	Yes	Det. Organic	0.059			ca	No
cis-1,3-Dichloropropene	mg/kg	0.0097 UJ	0	Yes	Det. Organic	1.8			ca	No
trans-1,3-Dichloropropene	mg/kg	0.024 UJ	0	Yes	Det. Organic	1.8			ca	No

*value derived from RSL of a surrogate
ca=carcinogenic
HMX=Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
na=Non-carcinogenic
PCB=Polychlorinated biphenyl
RSL=USEPA Regional Screening Levels
RDX=Hexahydro-1,3,5-trinitro-1,3,5-triazine
Res. = Residential

Chemical	Surrogate
acenphthylene	acenapthene
4-bromophenyl phenyl ether	4-bromophenyl ether
di-methyl ohthalate	diethyl phthalate
1,2 dichlorobenzene	1,3 dochorobenzene
2-nitrophenol	4-nitrophenol

Table 6-4. Screening results for the determination of SRCs and Contamination in subsurface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Subsurface	Background Criteria-Subsurface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Inorganics										
Aluminum	mg/kg	6,900	19,500	No	< BG		7,380	52932	nc	Not an SRC
Antimony	mg/kg	0.24	0.96	No	< BG		2.82	13.60	nc	Not an SRC
Arsenic	mg/kg	9.0	19.8	No	< BG		0.524	0.43	ca	Not an SRC
Barium	mg/kg	45.0	124	No	< BG		1,413	8,966	nc	Not an SRC
Beryllium	mg/kg	0.46	0.88	No	< BG	16			nc	Not an SRC
Cadmium	mg/kg	9	0	Yes	>BG		6.41	22.30	nc	Yes
Calcium	mg/kg	9,600	35,500	Ess. Nutrient						Ess. Nutrient
Chromium	mg/kg	13	27.2	No	<BG		8,147	19.70	nc	Not an SRC
Cobalt	mg/kg	7.70	23.2	No	<BG		131	803	nc	Not an SRC
Copper	mg/kg	11.00	32.3	No	<BG		311	2714	nc	Not an SRC
Iron	mg/kg	18,000	35,200	Ess. Nutrient			2,313	19,010	nc	Ess. Nutrient
Lead	mg/kg	13.00	19.1	No	<BG		400	---	nc	No
Magnesium	mg/kg	2,500.0	8,790	Ess. Nutrient						Ess. Nutrient
Manganese	mg/kg	340.0	3,030	No	>BG		293	1,482	nc	Yes
Mercury	mg/kg	0.0180	0.044	No	>BG		2.27	16.50	nc	No
Nickel	mg/kg	16.00	60.7	No	>BG		155	1346	nc	No
Potassium	mg/kg			Ess. Nutrient						Ess. Nutrient
Selenium	mg/kg	0.84	1.5	No	>BG	39			nc	No
Silver	mg/kg	0.088	0.0	Yes	>BG		38.6	324	nc	No
Sodium	mg/kg			Ess. Nutrient						Ess. Nutrient
Thallium	mg/kg	0.1	0.9	No	< BG		0.612	4.76	nc	Not an SRC
Vanadium	mg/kg	12.0	37.6	No	>BG		44.9	156	nc	Not an SRC
Zinc	mg/kg	100	93.3	Yes	>BG		2,321	19,659	nc	No
Organics										
Explosives/Propellants										
1,3,5-Trinitrobenzene	mg/kg	0.1	0	Yes	Det. Organic		225	1528	nc	No
1,3-Dinitrobenzene	mg/kg	0.1	0	Yes	Det. Organic		0.765	5.94	nc	No
2,4,6-Trinitrobenzene	mg/kg	0.1	0	Yes	Det. Organic		3.65	21.10	nc	No
2,4-Dinitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		1.1	0.75	ca	No
2,6-Dinitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		1.1	0.77	ca	No
2-Amino-4,6-Dinitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		1.54	12.60		No
2-Nitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		3.88	6.03	ca	No

Table 6-4. Screening results for the determination of SRCs and Contamination in subsurface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Subsurface	Background Criteria-Subsurface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
3-Nitrotoluene	mg/kg	0.1	0	Yes	Det. Organic	25			nc	No
4-Amino-2,6-Dinitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		1.54	12.80	nc	No
4-Nitrotoluene	mg/kg	0.1	0	Yes	Det. Organic		52.5	81.60	ca	No
HMX	mg/kg	0.1	0	Yes	Det. Organic		359	1909	nc	No
Nitrobenzene	mg/kg	0.1	0	Yes	Det. Organic	2			nc	No
Nitrocellulose	mg/kg	1.8	0	Yes	Det. Organic	190,000,000			nm	No
Nitroglycerin	mg/kg	0.26	0	Yes	Det. Organic		52.5	81.60	ca	No
Nitroguanidine	mg/kg	0.04	0	Yes	Det. Organic	630			nc	No
RDX	mg/kg	0.1	0	Yes	Det. Organic		8.03	163.00	ca	No
Tetryl	mg/kg	0.1	0	Yes	Det. Organic	16			n	No
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	mg/kg	0.51	0	Yes	Det. Organic	5.8			nc	No
1,2-Dichlorobenzene	mg/kg	0.51	0	Yes	Det. Organic	180			nc	No
1,3-Dichlorobenzene	mg/kg	0.51	0	Yes	Det. Organic	180*			nc	No
1,4-Dichlorobenzene	mg/kg	0.51	0	Yes	Det. Organic	2.6			ca	No
2,4,5-Trichlorophenol	mg/kg	1.5	0	Yes	Det. Organic	630			nc	No
2,4,6-Trichlorophenol	mg/kg	0.82	0	Yes	Det. Organic	6.3			nc	No
2,4-Dichlorophenol	mg/kg	1.5	0	Yes	Det. Organic	19			nc	No
2,4-Dimethylphenol	mg/kg	1.5	0	Yes	Det. Organic	130			nc	No
2,4-Dinitrophenol	mg/kg	0.82	0	Yes	Det. Organic	13			nc	No
2-Chloronaphthalene	mg/kg	0.51	0	Yes	Det. Organic	480			nc	No
2-Chlorophenol	mg/kg	0.51	0	Yes	Det. Organic	39			nc	No
2-Methyl-4,6-dinitrophenol	mg/kg	0.82 UJ	0	Yes	Det. Organic	0.51			nc	Yes
2-Methylnaphthalene	mg/kg	0.2	0	Yes	Det. Organic		30.6	238	nc	No
2-Methylphenol	mg/kg	0.82	0	Yes	Det. Organic	320			nc	No
2-Nitrophenol	mg/kg	0.51	0	Yes	Det. Organic		61.2*	476*		No
3,3'-Dichlorobenzidine	mg/kg	0.82	0	Yes	Det. Organic	1.2			ca	No
4-Bromophenyl phenyl ether	mg/kg	0.51	0	Yes	Det. Organic	0.68*			ca	No
4-Chloro-3-methylphenol	mg/kg	1.5	0	Yes	Det. Organic	630			nc	No
4-Chlorophenyl phenyl ether	mg/kg	0.51	0	Yes	Det. Organic	0.68*			ca	No
4-Methylphenol	mg/kg	4.1	0	Yes	Det. Organic	31			nc	No
4-Nitrophenol	mg/kg	0.82	0	Yes	Det. Organic		61.2	476		No
Acenaphthene	mg/kg	0.068	0	Yes	Det. Organic	360			nc	No
Acenaphthylene	mg/kg	0.068	0	Yes	Det. Organic	360*			nc	No
Anthracene	mg/kg	0.27	0	Yes	Det. Organic	1800	---	---	nc	No
Benz(a)anthracene	mg/kg	0.71	0	Yes	Det. Organic	16	0.65	0.22	ca	Yes
Benzo(a)pyrene	mg/kg	0.62	0	Yes	Det. Organic	0.016	0.065	0.02	ca	Yes

Table 6-4. Screening results for the determination of SRCs and Contamination in subsurface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Subsurface	Background Criteria-Subsurface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Benzo(b)fluoranthene	mg/kg	0.87	0	Yes	Det. Organic	0.16	0.65	0.22	ca	Yes
Benzo(g,h,i)perylene	mg/kg	0.42	0	Yes	Det. Organic	1.6			ca	No
Benzo(k)fluoranthene	mg/kg	0.37	0	Yes	Det. Organic	1.6	6.5	2.21	ca	No
Benzoic Acid	mg/kg	6.7	0	Yes	Det. Organic	25000			nc	No
Bis(2-chloroethoxy)methane	mg/kg	1	0	Yes	Det. Organic	23	23	178	nc	No
Bis(2-chloroethyl)ether	mg/kg	1	0	Yes	Det. Organic	0.23			ca	Yes
Bis(2-chloroisopropyl) ether	mg/kg	1	0	Yes	Det. Organic	310			nc	No
Bis(2-ethylhexyl)phthalate	mg/kg	0.51	0	Yes	Det. Organic	39			ca	No
Butyl benzyl phthalate	mg/kg	0.51	0	Yes	Det. Organic	290			nc	No
Carbazole	mg/kg	0.51	0	Yes	Det. Organic		44.6	69.40	ca	No
Chrysene	mg/kg	0.72	0	Yes	Det. Organic	16	65.0	22.10	ca	No
Di-n-butyl phthalate	mg/kg	0.51	0	Yes	Det. Organic	630			nc	No
Di-n-octyphthalate	mg/kg	0.51	0	Yes	Det. Organic	63			nc	No
Dibenz(a,h)anthracene	mg/kg	0.068	0	Yes	Det. Organic	160	0.065	0.02	ca	Yes
Dibenzofuran	mg/kg	0.51	0	Yes	Det. Organic		15.3	119	nc	No
Diethyl phthalate	mg/kg	0.51	0	Yes	Det. Organic	5100			nc	No
Dimethyl phthalate	mg/kg	0.51	0	Yes	Det. Organic	5100			nc	No
Fluoranthene	mg/kg	1.6	0	Yes	Det. Organic		163	276	nc	No
Fluorene	mg/kg	0.068	0	Yes	Det. Organic		243	737	nc	No
Hexachlorobenzene	mg/kg	0.068	0	Yes	Det. Organic	0.21			ca	No
Hexachlorobutadiene	mg/kg	0.51	0	Yes	Det. Organic	1.2			nc	No
Hexachlorocyclopentadiene	mg/kg	3.4	0	Yes	Det. Organic	0.18			nc	Yes
Hexachloroethane	mg/kg	0.51	0	Yes	Det. Organic	1.8			nc	No
Indeno(1,2,3-cd)pyrene	mg/kg	0.37	0	Yes	Det. Organic		0.65	0.22	ca	Yes
Isophorone	mg/kg	0.51	0	Yes	Det. Organic	570			ca	No
N-Nitroso-di-n-propylamine	mg/kg	0.51	0	Yes	Det. Organic		0.12	0.13	ca	Yes
N-Nitrosodiphenylamine	mg/kg	0.51	0	Yes	Det. Organic	110			ca	No
Naphthalene	mg/kg	0.13	0	Yes	Det. Organic		122	368	ca	No
Pentachlorophenol	mg/kg	0.82	0	Yes	Det. Organic		4.91	2.12	ca	No
Phenanthrene	mg/kg	0.71	0	Yes	Det. Organic	360*			nc	No
Phenol	mg/kg	0.51	0	Yes	Det. Organic	1900			nc	No
Pyrene	mg/kg	1.2	0	Yes	Det. Organic		122	207.00	nc	No
Pesticides/Herbicides										
4,4'-DDD	mg/kg	0.02	0	Yes	Det. Organic	2.3			ca	No
4,4'-DDE	mg/kg	0.017	0	Yes	Det. Organic		3	4.08	ca	No
4,4'-DDT	mg/kg	0.02	0	Yes	Det. Organic	1.9			ca	No
Aldrin	mg/kg	0.041	0	Yes	Det. Organic		0.053	0.08	ca	No

Table 6-4. Screening results for the determination of SRCs and Contamination in subsurface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Subsurface	Background Criteria-Subsurface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Dieldrin	mg/kg	0.017	0	Yes	Det. Organic		0.056	0.09	ca	No
Endosulfan I	mg/kg	0.017	0	Yes	Det. Organic	47	for Endosulfan		nc	No
Endosulfan II	mg/kg	0.025	0	Yes	Det. Organic	47	""		nc	No
Endosulfan Sulfate	mg/kg	0.03	0	Yes	Det. Organic	47	""		nc	No
Endrin	mg/kg	0.017	0	Yes	Det. Organic		1.12	1.77	nc	No
Endrin Aldehyde	mg/kg	0.03	0	Yes	Det. Organic	1.9	---	---	nc	No
Endrin Ketone	mg/kg	0.02	0	Yes	Det. Organic	1.9			nc	No
Heptachlor	mg/kg	0.035	0	Yes	Det. Organic	0.13	0.198	0.31	ca	No
Heptachlor Epoxide	mg/kg	0.025	0	Yes	Det. Organic	0.07	0.098	0.15	ca	No
Lindane	mg/kg	0.025	0	Yes	Det. Organic	0.57			ca	No
Methoxychlor	mg/kg	0.051	0	Yes	Det. Organic	32			nc	No
Toxaphene	mg/kg	0.68	0	Yes	Det. Organic	0.49			ca	No
alpha-BHC	mg/kg	0.025	0	Yes	Det. Organic	0.086			ca	No
alpha-Chlordane	mg/kg	0.03	0	Yes	Det. Organic	1.7	---	---	ca	No
beta-BHC	mg/kg	0.035	0	Yes	Det. Organic		0.496	0.77	ca	No
delta-BHC	mg/kg	0.041	0	Yes	Det. Organic	1.7			ca	No
gamma-Chlordane	mg/kg	0.017	0	Yes	Det. Organic	1.7	---	---	ca	No
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	0.066	0	Yes	Det. Organic		0.349	0.20	nc	No
Aroclor 1221	mg/kg	0.051	0	Yes	Det. Organic	0.20			ca	No
Aroclor 1232	mg/kg	0.046	0	Yes	Det. Organic	0.17			ca	No
Aroclor 1242	mg/kg	0.041	0	Yes	Det. Organic	0.23			ca	No
Aroclor 1248	mg/kg	0.056	0	Yes	Det. Organic	0.23	0.349	0.20	ca	No
Aroclor 1254	mg/kg	0.4	0	Yes	Det. Organic	0.12	0.349	0.20	nc	Yes
Aroclor 1260	mg/kg	0.056	0	Yes	Det. Organic	0.24	0.349	0.20	ca	No
Volatile Organic Compounds										
1,1,1-Trichloroethane	mg/kg	0.29	0	Yes	Det. Organic	810			nc	No
1,1,2,2-Tetrachloroethane	mg/kg	0.29	0	Yes	Det. Organic	0.6			ca	No
1,1,2-Trichloroethane	mg/kg	0.29	0	Yes	Det. Organic	0.15			nc	Yes
1,1-Dichloroethene	mg/kg	0.29	0	Yes	Det. Organic	23			nc	No
1,1-Dichloroethane	mg/kg	0.29	0	Yes	Det. Organic	3.6			ca	No
1,2,-Dichloroethane	mg/kg	0.29	0	Yes	Det. Organic	0.46			ca	No
1,2-Dichloroethene (total)	mg/kg	0.29	0	Yes	Det. Organic	16			nc	No
1,2,-Dichloropropane	mg/kg	0.29	0	Yes	Det. Organic	1.0			ca	No
2-Butanone	mg/kg	1.3	0	Yes	Det. Organic	2700			nc	No
2-Hexanone	mg/kg	1.3	0	Yes	Det. Organic	20			nc	No
4-Methyl-2-pentanone	mg/kg	1.2	0	Yes	Det. Organic	3300			nc	No

Table 6-4. Screening results for the determination of SRCs and Contamination in subsurface soil from debris Pile C using the maximum concentration detected per analyte.

Analyte	Units	Maximum Detect Subsurface	Background Criteria-Subsurface	SRC Yes or No	Rationale	Residential RSL (HQ=.1,10E-6)	Resident Child FWCUGs (HQ=.1,10E-6)	Resident Adult FWCUGs (HQ=.1,10E-6)	FWCUG Type	Contamination Yes or No
Acetone	mg/kg	1.2	0	Yes	Det. Organic	6100			nc	No
Benzene	mg/kg	0.29	0	Yes	Det. Organic	1.2			ca	No
Bromodichloromethane	mg/kg	0.29	0	Yes	Det. Organic	0.29			ca	No
Bromoform	mg/kg	0.032	0	Yes	Det. Organic	19			ca	No
Bromomethane	mg/kg	0.29	0	Yes	Det. Organic	0.68			nc	No
Carbon Disulfide	mg/kg	0.29	0	Yes	Det. Organic	77			nc	No
Carbon Tetrachloride	mg/kg	0.29	0	Yes	Det. Organic	0.65			ca	No
Chlorobenzene	mg/kg	0.29	0	Yes	Det. Organic	28			nc	No
Chloroethane	mg/kg	0.29	0	Yes	Det. Organic	1400			nc	No
Chloroform	mg/kg	0.29	0	Yes	Det. Organic	0.32			ca	No
Chloromethane	mg/kg	0.29	0	Yes	Det. Organic	11			nc	No
Dibromochloromethane	mg/kg	0.032	0	Yes	Det. Organic	8.3			ca	No
Ethylbenzene	mg/kg	0.31	0	Yes	Det. Organic	5.8			nc	No
Xylene (total)	mg/kg	0.61	0	Yes	Det. Organic	58			nc	No
Methylene Chloride	mg/kg	0.27	0	Yes	Det. Organic	35			nc	No
Styrene	mg/kg	0.29	0	Yes	Det. Organic	600			nc	No
Tetrachloroethene	mg/kg	0.29	0	Yes	Det. Organic	8.1			nc	No
Toluene	mg/kg	0.29	0	Yes	Det. Organic	490			nc	No
Trichloroethene	mg/kg	0.29	0	Yes	Det. Organic	0.41			nc	No
Vinyl Chloride	mg/kg	0.29	0	Yes	Det. Organic	0.059			ca	No
cis-1,3-Dichloropropene	mg/kg	0.013	0	Yes	Det. Organic	1.8			ca	No
trans-1,3-Dichloropropene	mg/kg	0.032	0	Yes	Det. Organic	1.8			ca	No

*value derived from RSL of a surrogate
ca=carcinogenic
HMX=Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
na=Non-carcinogenic
PCB=Polychlorinated biphenyl
RSL=USEPA Regional Screening Levels
RDX=Hexahydro-1,3,5-trinitro-1,3,5-triazine
Res. = Residential

Chemical	Surrogate
acenphthylene	acenapthene
4-bromophenyl phenyl ether	4-bromophenyl ether
di-methyl ohthalate	diethyl phthalate
1,2 dichlorobenzene	1,3 dochorobenzene
2-nitrophenol	4-nitrophenol

7.0 EXPOSURE PATHWAYS

7.1 Soil Exposure and Air Pathways

7.1.1 Physical Conditions

The previous environmental work at the RVAAP-16 AOC provides much information about the soils adjacent to the debris pile areas. See Section 2 of this SI for more details. The *U.S. Department of Agriculture Portage County Soil Survey* indicates that the soil within CC RVAAP-78 is defined as "pit, quarries" with possibly Mitiwanga Silt Loam in the eastern portion of Debris Pile A. Fill materials, including transite, are present at the base of the steeply inclined rock slopes in Debris Piles A and B.

7.1.2 Potential Soil and Air Pathways

Currently, soil and air targets, as described in the Abbreviated Preliminary Assessment Guidance (US EPA, 1999), at CC RVAAP-78 are limited due to low activity levels. However, in the future, the OHARNG plans to use this area for military training. A Feasibility Study (FS), Record of Decision (ROD), Remedial Design (RD), and Remedial Action (RA) for the Fuze and Booster Quarry Landfill/Ponds addressed the larger area surrounding and in the vicinity of CC RVAAP-78. These studies, did not specifically address the dumping and potential asbestos at the CC RVAAP-78 AOC. Use of the data from previous reports and sampling areas is limited to their impact on this AOC. Although the FBQ investigations for the Landfill/Ponds addressed the large areas surrounding the area of CC RVAAP-78, they did not specifically address any potential transite problems or the Debris Piles. Primary pathways for the exposure to chemicals and asbestos include airborne inhalation, incidental ingestion, and dermal contact. During the site reconnaissance, transite materials were observed in a broken and friable condition. Disturbance of this material may cause the asbestos fibers to be airborne and thus create an inhalation hazard. Section 6 describes the chemicals that were identified as SRCs and potential chemical contamination. The levels of asbestos ranging from 30 percent to 40 percent were detected in samples of transite and roofing material.

7.1.3 Soil Exposure and Air Pathways Conclusion

Following investigation and remediation of the FBQ Landfill/Ponds, three debris piles were encountered within this area which required additional consideration. These three debris piles constitute the Quarry Pond Surface Dump, CC RVAAP-78, which is assessed in this SI. Observations and additional field sampling and analyses in this SI have indicated possible exposure to asbestos and chemical contamination at the AOC. Potential exposure to friable asbestos fibers from the residual transite and roofing materials at CC RVAAP-78 may occur if the soil is disturbed. The likelihood of asbestos fibers being released into the air is greater if asbestos material is disturbed. Exposure to chemicals in the soil is likely, if the activity disturbs the soil and the receptor contacts the soil. The potential for exposure increases the longer the contact occurs on site.

There is another area that was identified while completing the sampling for this SI but it was not evaluated. There was materials between identified between Debris Piles A and B. This area should

be evaluated further in the next phase of the CERCLA process (an RI) to determine if there is asbestos or chemical contamination present here are well.

There is another are that was identified while completing the sampling for this SI but was not evaluated. There was materials between identified between Debris Piles A and B. This area should be evaluated further to determine if there is asbestos or chemical contamination present.

7.2 Groundwater Pathway

7.2.1 Hydrogeologic Setting

The CC RVAAP-78 AOC is located within the RVAAP-16 AOC. Following investigation and remediation of the FBQ Landfill/Ponds, three debris piles were encountered within this area which required additional consideration. These three debris piles constitute the Quarry Pond Surface Dump, CC RVAAP-78 which is being investigated in this SI. The hydrogeologic setting for RVAAP-16 is contained in Section 2 of the *Phase I/Phase II Remedial Investigation of the Fuze and Booster Quarry Landfill/Ponds (RVAAP-16),* dated November 2005. Groundwater flow is toward the south and west. A figure entitled, "Geologic Cross-Section of Fuze and Booster Quarry Ponds (RVAAP-16)" from the above-referenced investigation is included herein as Figure 7-1 for reference.

7.2.2 Groundwater Pathways

Groundwater at the AOC is not currently utilized. The OHARNG may utilize groundwater in the future in select areas on the facility. Groundwater wells located in the vicinity of the AOC are being assessed under the facility-wide Groundwater Monitoring Program.

7.2.3 Groundwater Pathway Conclusions

Based on the historical research in Section 3.2 of the HRRR, sample results from groundwater monitoring wells near CC RVAAP-78 should be assessed further as currently being done under the groundwater monitoring program. Considering these results and the AOC's location relative to groundwater bearing units and geologic setting, there is a low likelihood of a release to groundwater from the migration of contaminants through soil and the underlying rock. Groundwater is being addressed under the facility-wide Groundwater Monitoring Program.

7.3 Surface Water Pathway

7.3.1 Surface Water Setting

Surface water and sediment are not present on the AOC. Therefore, this is an incomplete pathway and is not evaluated further.

7.3.2 Surface Water Pathway Conclusions

There is no surface water or sediment on the AOC so the surface water and sediment pathway is considered incomplete for this AOC.

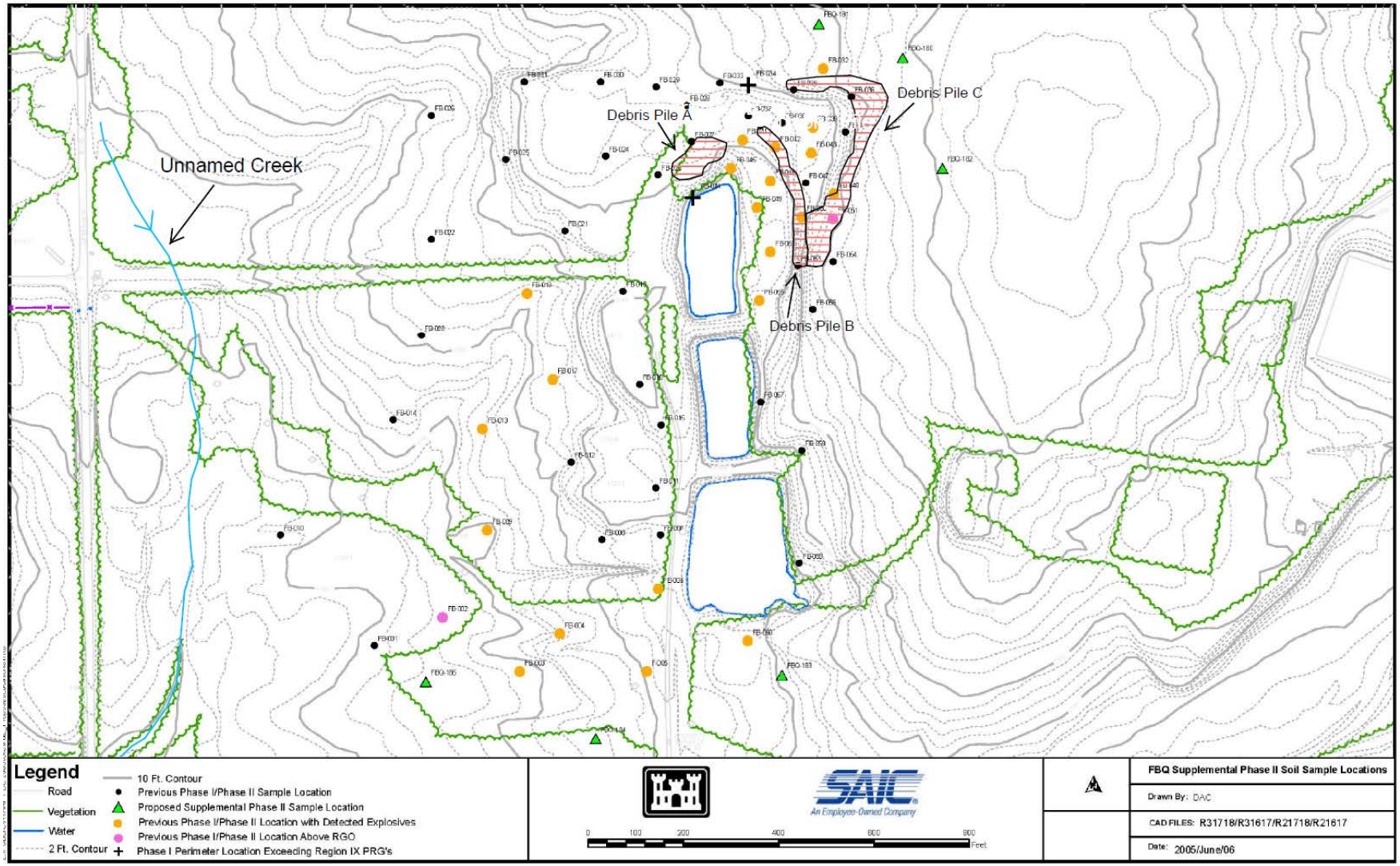

Figure 7-1. Surface Water Flow from Debris Piles A, B, and C. **Figure taken from SAIC's Final Sampling and Analysis Plan Addendum No. 1 for the Supplemental Phase II Remedial Investigations November 2005.**

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8.0 SUMMARY AND RECOMMENDATIONS

8.1 FINDINGS

The initial intrusive investigation at CC RVAAP-78 was conducted in November 2011. The investigation included surface soil ISM sampling at the apparent Burn Area and Debris Piles A, B, and C; subsurface soil ISM sampling at Debris Pile C; and sampling of the contents of the two rusted drums that were removed as part of this SI.

8.1.1 Asbestos

Transite was observed in both Debris Piles A and B. The surface soil ISM sampling at the apparent Burn Area and Debris Pile C and the subsurface soil ISM sampling at Debris Pile C, was conducted. Asbestos contents of 30 percent and 40 percent were detected in the transite samples from Debris Piles A and B, respectively, and the roofing sample from Debris Pile B had a level of 35 percent asbestos. All the soil samples were analyzed for asbestos. All the soil samples were non-detect or less than 1 percent asbestos, except for sample C78SB-021M-0001-SO, one of the subsurface soil vertical ISM samples from Debris Pile C, which had a level of 2 percent asbestos.

8.1.2 Drums

Sampling of the contents of Drum #1 and Drum #2 took place on November 10, 2011. The material within Drum #1 was described as a black/brown tarry, rubbery substance, and the material within Drum #2 was described as a brown organic material which appeared to be dirt, wood, and a squirrel nest. Toxicity Characteristic Leaching Procedure (TCLP) analyses on samples of the contents from the two drums revealed the contents of Drum #1 to be Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste for lead and the contents of Drum #2 to be non-hazardous. Both drums were removed from the site on February 16, 2012 and disposed of according to state and federal requirements.

8.1.3 Chemical Contamination

The maximum surface and subsurface soil chemical concentrations detected during this sampling were assessed to determine if they were SRCs as well as potential contamination in Section 6 of this SI. The *apparent* Burn Area is within the Debris Pile B. The apparent Burn Area was not assessed for the determination of SRCs or contamination since most of the analytes were not detected and the concentrations of chemicals in the Debris Pike B were much greater. The data tables arranged by analysis type for the *apparent* Burn Area are presented in Appendix M.

The following lists the chemicals identified as contamination (based on the maximum value) from each Debris Pile:

- Debris Pile A - Surface Soil (Table 6-1):
    - Explosives/Propellants: 1,3-dinitrobenzene (qualified as a U value - non-detect).
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value) and benzo(a)pyrene.
    - Pesticides/Herbicides, PCBs, and VOCs: none.

- Debris Pile B - Surface Soil (Table 6-2):
    - Metals: arsenic, chromium, and manganese.
    - Explosives/Propellants: 2,4,6-trinitrolouene (qualified as a J value - estimated).
    - SVOCs: 2-methyl-4,6-dinitro.phenol (qualified as a UJ value); bis(2-chloroethyl) ether; benzo(a)pyrene; and hexachloro-cyclopentadiene.
    - PCBs: Aroclor 1254 value was 0.21 mg/kg and screening value is 0.21 mg/kg).
    - Pesticides/Herbicides and VOCs: none.
- Debris Pile C - Surface Soil (Table 6-3):
    - Metals: arsenic, chromium, manganese, and nickel.
    - Explosives/Propellants: none.
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; bis(2-chloroethyl)ether; and hexachlorocyclopentadiene.
    - Pesticides/Herbicides, PCBs, and VOCs: none
- Debris Pile C - Subsurface Soil (Table 6-4):
    - Metals: cadmium and manganese.
    - Explosives/Propellants: none.
    - SVOCs: 2-methyl-4,6-dinitrophenol (qualified as a UJ value); benz(a)anthracene; benzo(a)pyrene; benzo(b)fluoroanthene; bis (2-chloroethyl)ether; dibenz(a,h) anthracene; N-nitroso-di-n-propylamine; and hexachloro-cyclopentadiene.
    - PCBs: Aroclor 1254.
    - Pesticides/Herbicides and VOCs: none.

8.2 Recommendations

Because asbestos and chemical contamination were found in Debris Piles A, B, and C, additional remedial action is warranted and this AOC should proceed to the next phase in the CERCLA process. Based on the results of this SI, the AOC should proceed to an RI for further investigation. Additionally, it is recommended that the RI include an additional investigation of the area between Debris Piles A and B and the road adjacent to the east side of the northern-most pond.

9.0 REFERENCES

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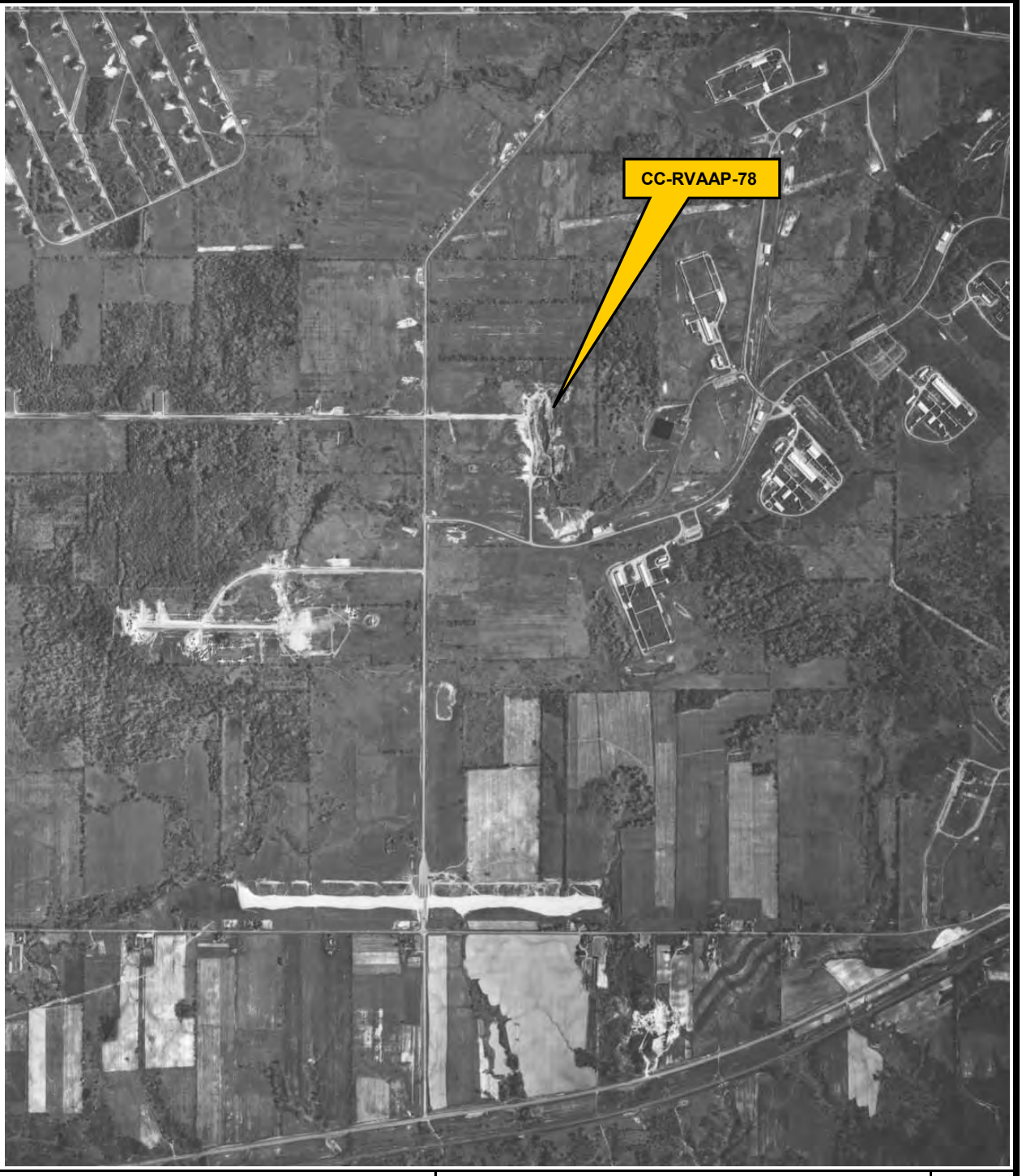
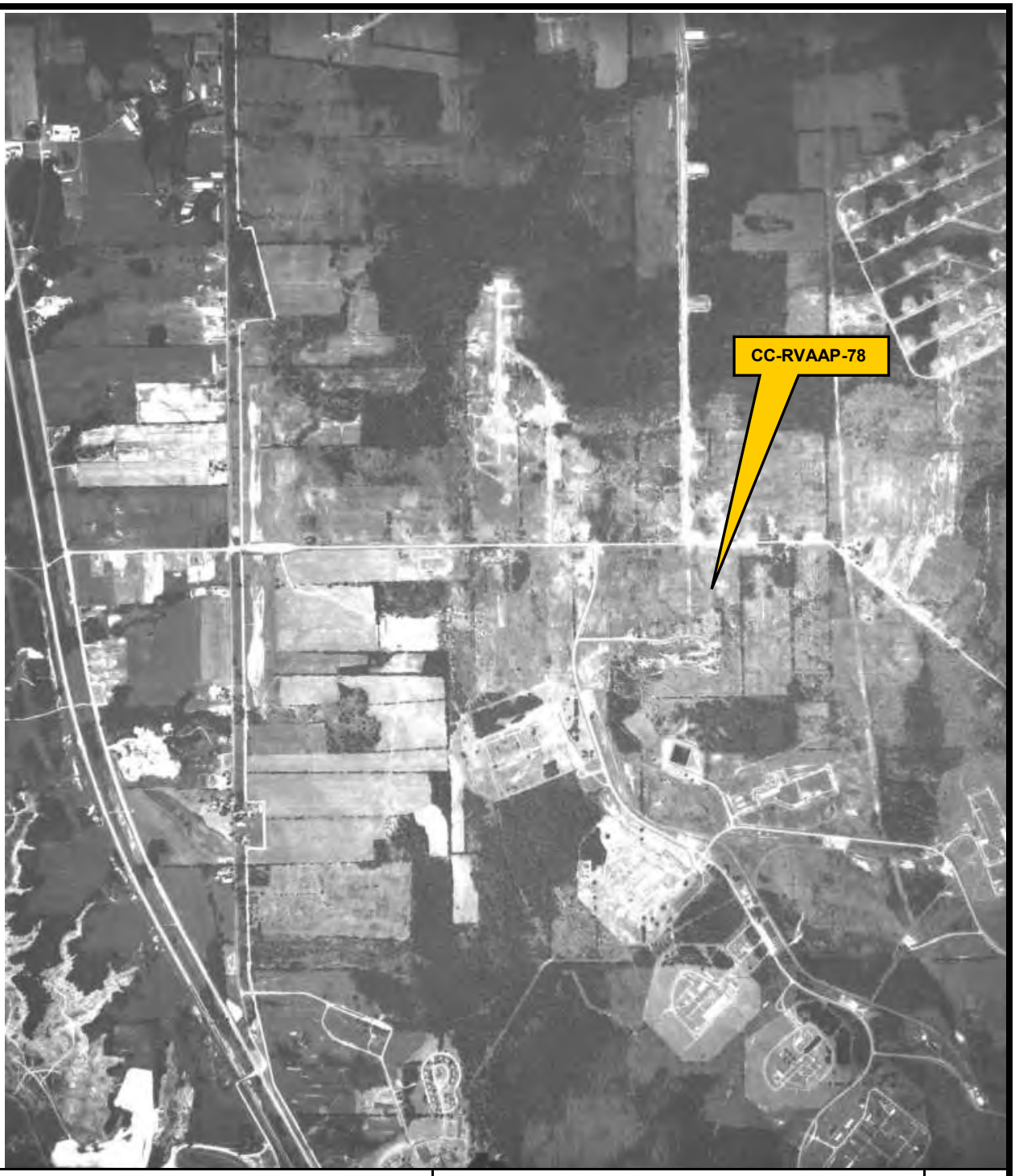
Appendix A – CC RVAAP-78 Historical Aerial Photographs



1951 AERIAL	**FIGURE 1**	**N↑**
PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.	**CC-RVAAP-78** **Aerial Photograph, May 2, 1951** **Quarry Pond Surface Dump**	



1952 AERIAL	**FIGURE 2**	**N↑**
PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.	**CC-RVAAP-78** **Aerial Photograph, April 6, 1952** **Quarry Pond Surface Dump**	



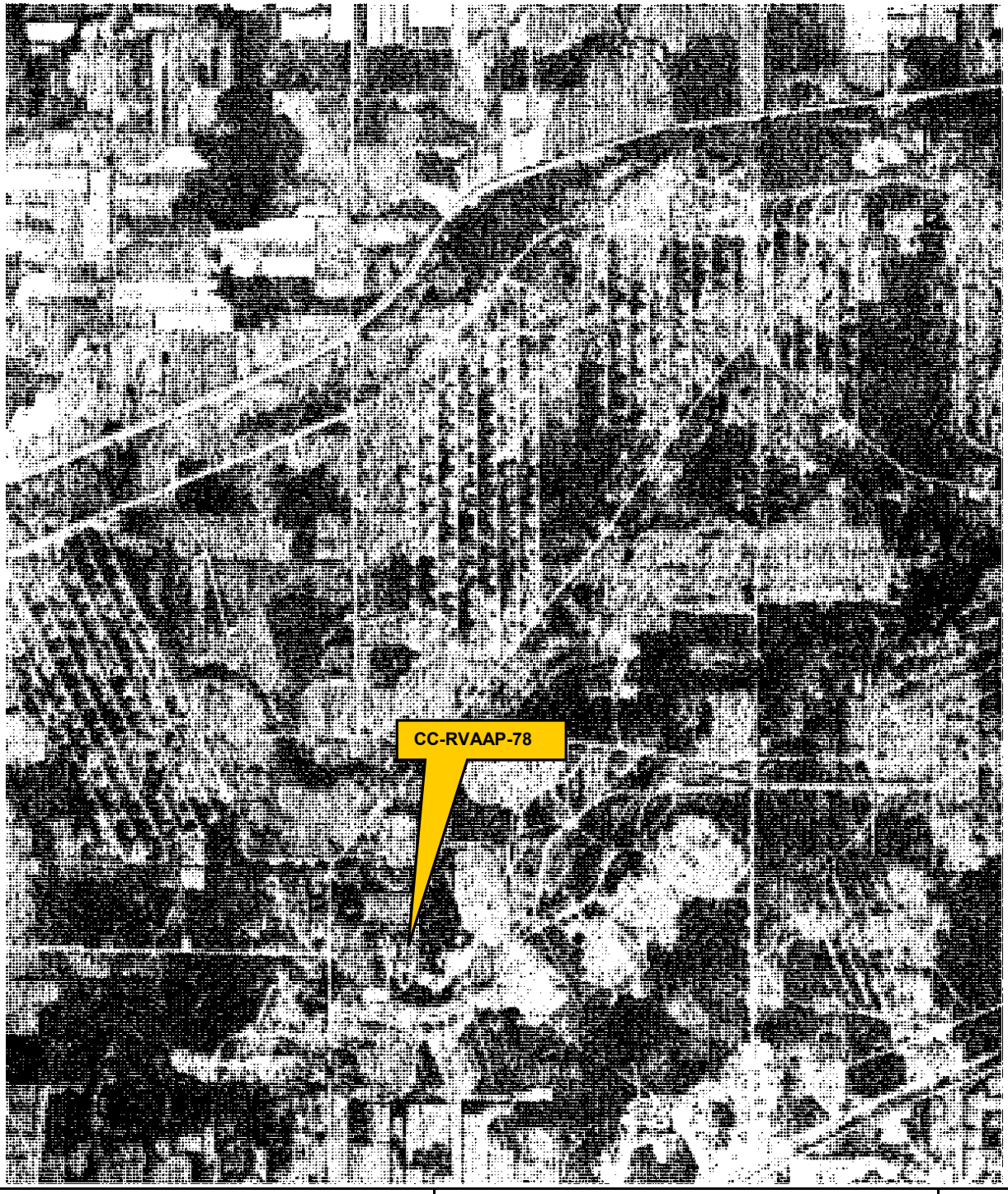
1966 AERIAL

FIGURE 3

N

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

CC-RVAAP-78
Aerial Photograph, June 17, 1966
Quarry Pond Surface Dump



1979 AERIAL	**FIGURE 4**	**N↑**
PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.	**CC-RVAAP-78** **Aerial Photograph, September 17, 1979** **Quarry Pond Surface Dump**	



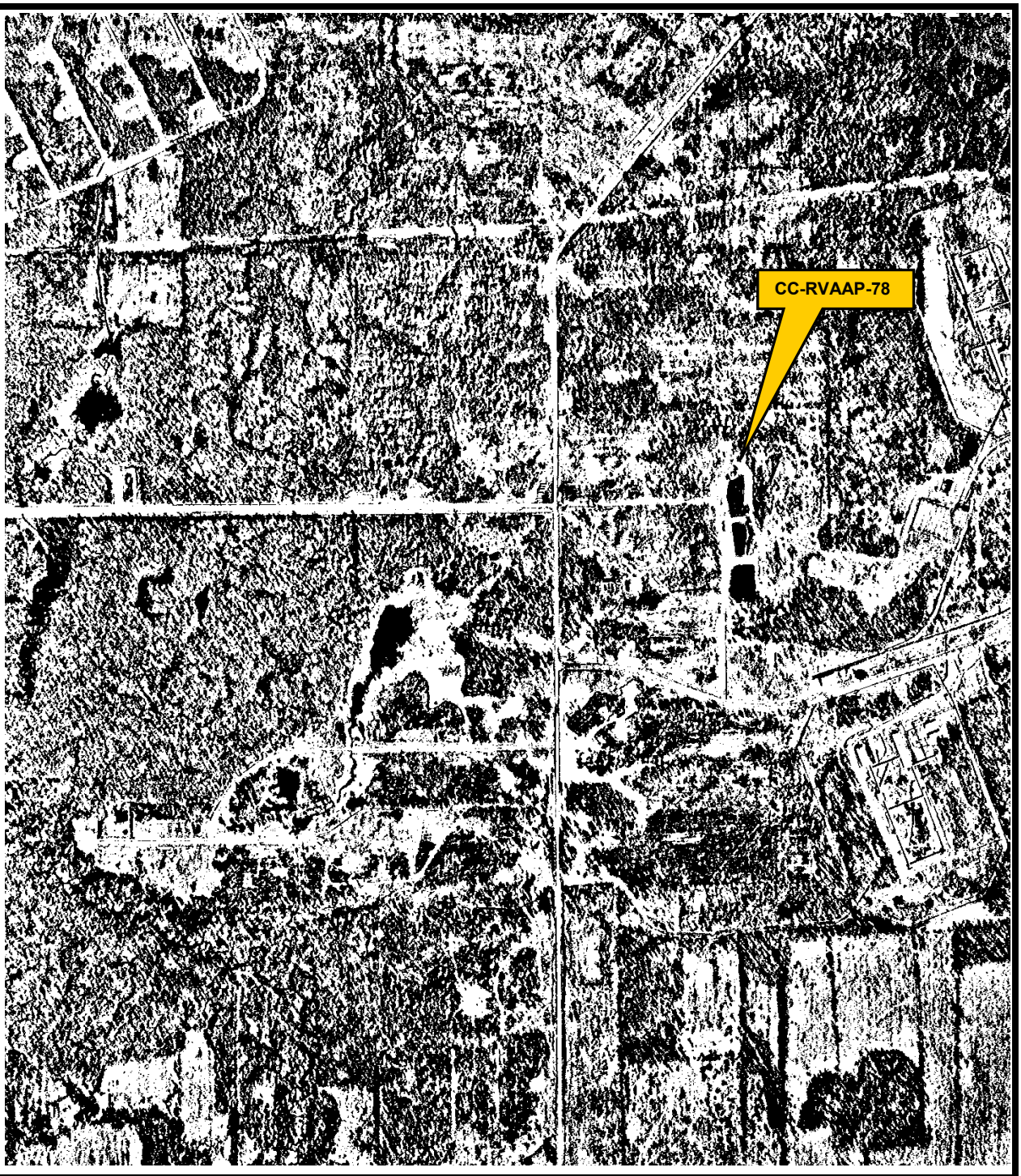
1981 AERIAL

FIGURE 5

N

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

CC-RVAAP-78
Aerial Photograph, November 10, 1981
Quarry Pond Surface Dump



1985 AERIAL	**FIGURE 6**	**N**
PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.	**CC-RVAAP-78** **Aerial Photograph, March 26, 1985** **Quarry Pond Surface Dump**	

Appendix B - Tailgate Health & Safety Meeting Logs

TAILGATE SAFETY MEETING LOG

PROJECT NAME: CC-78 **PROJECT NO:** 651002

DATE: 11/09 M Tu (W) Th F Sa Su TIME: 7:30am

WEATHER: clear + cool

WORKING CONDITIONS:

PPE:

ITEMS DISCUSSED:

- Safety near drill rig - eye, ear protection, hard hat
- trips, slips + falls - rocky unlevel ground
- brushy areas, lots of thorny bushes
- water - drowning hazard
- cold - weather ticks, other bugs
- Mushrooms with smoke
- no food or drink @ sampling table
- UXO safety from Travis
- wild animals - dogs, coyotes, deer
- asbestos

THE FOLLOWING INDIVIDUALS ATTENDED THE DAILY TAILGATE SAFETY MEETING (SIGNATURES)

SITE SAFETY AND HEALTH OFFICER

VISITOR LOG

11/9/11	Mark Patterson	Mark Patt	10:15
11/9/11	Scott Kelly	T. Scott Kelly	10:15
11/9/11	ERIC CHENG	EC	10:15
11/9/11	MARK NICHTER.	Mark W. Nichter	10:15

DAILY TAILGATE MEETING FORM

Site Name & Number: RVAAP C-78
Project Number: 60510002
Work Being Performed: Surface MI sampling
Date & Time of Meeting: 11-10-11 @ 7:40 AM
Name of Presenter: A. Miller & J. Joint

NOTE: On the initial day of the project, the Project Manager or designee should conduct a visual inspection of the project site prior to the Tailgate Meeting. This inspection should include a review of project site equipment, hazards, and specific job tasks, activities or operations to be performed for that day. These specific items must be covered during the Tailgate Meeting. For subsequent days, any changes to the site or operations must be covered in Tailgate Meeting.

Itemize the Specific Topics Discussed (if more space is needed use the back of this page):

Slips, trips & falls
wild animals
insects
UXO safety

Participants (if needed, list additional participants on back of this page):

Print Name	Signature	Company	Date
Amanda Miller		PRUDENT	11-10-11
Travis Stark		ECC	11-10-11
Keith R Bickel		Diamond	11-10-11
John Joint		Prudent	11-10-11
Tamas Hegymegi		Prudent	11-10-11
Joe Kirkey		SWS	11-10-11
Chris Bean		SWS	11-10-11

A Tailgate Safety Meeting must be conducted and documented at the beginning of each workday when two or more Prudent employees and/or subcontractor representatives are present on site. Employees, client representatives and subcontractors who arrive at the site after the Tailgate Safety Meeting has been conducted must be briefed on the topics and acknowledge by signing this form.

HEALTH AND SAFETY PLAN (HASP)
Visitors Log

Client Site Name: _____ Project Site No. _____

Project No. _____ Task No. _____

PRINT NAME	SIGNATURE	COMPANY	DATE
Joe Kirk II	Joe Kirk II	SWS	11-10-11
Chris Beam		SWS	11-10-11

Appendix C – Activity Field Logs

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): P-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021M-0001--50

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 08:54 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): P-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021V-0001-50

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 08:54 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QC-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0001-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY -- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:12 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 15

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): QC-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022V-0001-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 0912 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 15

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QA-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0001-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:25 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 15

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): QA-1
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0001-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:25 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 15

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): D-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C785B-021M-0002-50

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:43 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 15

Depth Range (ft) Drilled: 3-5 Recovery (in:) 15

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): ~~P-1~~ P-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C785B-021M-0002-50

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:43 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 15

Depth Range (ft) Drilled: 3-5 Recovery (in:) 15

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QC-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0002

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:50 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): QC-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0002:50

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 09:50 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QA-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0002-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:00 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks: VISITORS - MARK PATTERSON SCOTT KELLY, ERIC CHENG
MARK NICHTER

Debris Pile C

Vertical Geoprobe Number (#): QA-2
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0002-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:00 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks: MARK PATTERSON, MARK NICHTER, ERIC CHANG &
SCOTT KELLY VISITED

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): ~~P-1~~ P-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021M-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:23 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 18"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 18"

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): ~~P-1~~ P-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021V-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:23 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 18"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 18"

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): GC-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY. 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:40 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 10

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): GC-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022V-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY. 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:40 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 10

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): GA-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:55 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 20

Depth Range (ft) Drilled: 3-5 Recovery (in:) 20

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): GA-3
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0003-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 10:55 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 20

Depth Range (ft) Drilled: 3-5 Recovery (in:) 20

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): P-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021M-0004-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY. 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:09 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 18"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 18"

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): P-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021Y-0004-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:09 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 18"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 18"

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): GC-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0004-SU

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:20 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 17"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 17

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): GC-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022V-0004-SU

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:20 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 17"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 17

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QA-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0004-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11.30 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 20"

Depth Range (ft) Drilled: 3-5 Recovery (in:) 20"

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): QA-4
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0004-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11.30 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 20

Depth Range (ft) Drilled: 3-5 Recovery (in:) 20

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): P-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021M-0005-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:43 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): P-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021V-0005-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:43 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 16

Depth Range (ft) Drilled: 3-5 Recovery (in:) 16

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QC-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0005-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:55 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): QC-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022Y-0005-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY - 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 11:55 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 13

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QA-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0005-SU

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:10 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 14

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): ~~QA~~ QA-5
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0005-SU

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:10 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 13

Depth Range (ft) Drilled: 3-5 Recovery (in:) 14

Remarks:

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): P-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021M-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:25 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) _____

Depth Range (ft) Drilled: 3-5 Recovery (in:) _____

Remarks: _____

Debris Pile C

Vertical Geoprobe Number (#): P-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-021V-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:25 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) _____

Depth Range (ft) Drilled: 3-5 Recovery (in:) _____

Remarks: _____

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): QC-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022M-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:28 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) _____

Depth Range (ft) Drilled: 3-5 Recovery (in:) _____

Remarks: _____

Debris Pile C

Vertical Geoprobe Number (#): QC-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-022V-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:28 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) _____

Depth Range (ft) Drilled: 3-5 Recovery (in:) _____

Remarks: _____

SUBSURFACE SOIL ISM FIELD LOG

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Debris Pile C

Vertical Geoprobe Number (#): CxA-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023M-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/ Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:35 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 12

Depth Range (ft) Drilled: 3-5 Recovery (in:) 12

Remarks:

Debris Pile C

Vertical Geoprobe Number (#): CxA-6
(Primary 021, QC 022, QA 023) Triplicates

Sample Number of Vertical Geoprobe Number: C78SB-023V-0006-SO

Date: 11-9-2011 (MM/DD/YYYY)

Weather: CLOUDY- 60°

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

KEITH BICKEL

Subcontractor Personnel (Company/Name): Frontz Drilling / Jeremy Leckrone

Tube A Time: 12:35 (HH:MM) Depth Range (ft) Drilled: 1-3 Recovery (in:) 12

Depth Range (ft) Drilled: 3-5 Recovery (in:) 12

Remarks:

FIELD LOG – TASK 3 SURFACE SOIL / TRANSITE / DRUM SAMPLES

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Area/~~Drum:~~ C Sample ID: C7855-013M-0001-SO

Date: 11-9-2011 (MM/DD/YYYY) Time: 1530 (HH:MM) Weather: CLOUDY - 60°

Depth Range (Ft): 0-1.0

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent
KEITH BICKEL

Material: DK BRN SILTY CLAY

Remarks/Visitors:

Area/~~Drum:~~ C Sample ID: C7855-014-0001-SO

Date: 11-9-2011 (MM/DD/YYYY) Time: 1530 (HH:MM) Weather: CLOUDY - 60°

Depth Range (Ft): 0.5'

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent
KEITH BICKEL

Material: DK BRN SILTY CLAY

Remarks/Visitors: VOC SAMPLE

Area/~~Drum:~~ BURN PIT Sample ID: C7855-015M-0001-SO

Date: 11-9-2011 (MM/DD/YYYY) Time: 1555 (HH:MM) Weather: CLOUDY - 60°

Depth Range (Ft): 0-1.0

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent
KEITH BICKEL

Material: DK BRN SILTY CLAY

Remarks/Visitors:

FIELD LOG – TASK 3 SURFACE SOIL / TRANSITE / DRUM SAMPLES

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Area/~~Drum~~: BURN AREA Sample ID: C7855-016-0001-SO

Date: 11-9-2011 (MM/DD/YYYY) Time: 1555 (HH:MM) Weather: CLOUDY- 60°

Depth Range (Ft): 0,5'

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

Material: _____

Remarks/Visitors: VOC SAMPLE

Area/Drum: B Sample ID: C7855-010M-0001-SO

Date: 11-10-2011 (MM/DD/YYYY) Time: 0830 (HH:MM) Weather: SUNNY 40°

Depth Range (Ft): 0 - 8" (TYPICAL)

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: DK BRN SILTY CLAY

Remarks/Visitors: _____

Area/~~Drum~~: B Sample ID: C7855-011-0001-SO

Date: 11-10-2011 (MM/DD/YYYY) Time: 0830 (HH:MM) Weather: SUNNY 40°

Depth Range (Ft): 0,5'

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: DK BRN SILTY CLAY

Remarks/Visitors: _____

FIELD LOG – TASK 3 SURFACE SOIL / TRANSITE / DRUM SAMPLES

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Area/~~Drum~~: B Sample ID: C7855-012-0001-BD

Date: 11-10-2011 (MM/DD/YYYY) Time: 0845 (HH:MM) Weather: SUNNY - 40°

Depth Range (Ft): SURFACE

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: TRANSITE

Remarks/Visitors:

Area/~~Drum~~: B Sample ID: C7855 012-0002-BD

Date: 11-10-2011 (MM/DD/YYYY) Time: 0845 (HH:MM) Weather: SUNNY - 40°

Depth Range (Ft): SURFACE

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: ROOFING MATERIAL

Remarks/Visitors: ADDED SAMPLE

Area/Drum: A Sample ID: C7855-001M-0001-SO
C7855-003M-0001-SO
C7855-005M-0001-SO
C7855-007M-0001-SO
C7855-008M-0001-SO

Date: 11-10-2011 (MM/DD/YYYY) Time: 0900-1010 (HH:MM) Weather: SUNNY 40°

Depth Range (Ft): 0 - 0.5'

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: BLK-BL ~~SILTY CLAY~~ SILTY CLAY

Remarks/Visitors:

5' BLACK SOIL FROM DRUM

FIELD LOG – TASK 3 SURFACE SOIL / TRANSITE / DRUM SAMPLES

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

Area/~~Drum~~: A Sample ID: ~~C7855-002-0001-SO~~ C7855-006-0001-SO C7855-007-0002-SO C7855-008-0002-SO

Date: 11-10-2011 (MM/DD/YYYY) Time: 0930 (HH:MM) Weather: SUNNY - 40°

Depth Range (Ft): 0-5'

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: BRN - BL SILTY CLAY

Remarks/Visitors:

Area/~~Drum~~: A Sample ID: ~~C7855~~ C7855-009-0001BD C7855-009-0002BD Test Amer. CT

Date: 11-10-2011 (MM/DD/YYYY) Time: 0930 (HH:MM) Weather: SUNNY - 40°

Depth Range (Ft): SURFACE

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent KEITH BICKEL

Material: TRANSITE

Remarks/Visitors:

~~Area~~/Drum: 1 Sample ID: C78DM-017-0001-WS

Date: 11-10-2011 (MM/DD/YYYY) Time: 12:20 12:30 (HH:MM) Weather: SUNNY 40°

~~Depth Range (Ft)~~: INSIDE DRUM / DRUM CONTENTS

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent JOE KIRK, CHRIS BRAND - SWS

Material: BRN-BLACK TARRY, RUBBERY TEXTURED SOLID

Remarks/Visitors:

FIELD LOG – TASK 3 SURFACE SOIL / TRANSITE / DRUM SAMPLES

Project- CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052

~~Area~~/Drum: 2 Sample ID: C78DM-019-0001-INS

Date: _____ (MM/DD/YYYY) Time: 12:30 - 12:40 (HH:MM) Weather: SUNNY 40°

~~Depth Range (Ft):~~ INSIDE DRUM / DRUM CONTENTS

Contractor Personnel: ~~Amanda Miller, Tomas Hernandez, Travis Steele, John Jent~~ JOE KLRIC, CHRIS BEAN

Material: BRN W SOILS - SEEMED TO BE DIRT, WOOD, SQUIRREL NEST

Remarks/Visitors: _____

Area/Drum: _____ Sample ID: _____

Date: _____ (MM/DD/YYYY) Time: _____ (HH:MM) Weather: _____

Depth Range (Ft): _____

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

Material: _____

Remarks/Visitors: _____

Area/Drum: _____ Sample ID: _____

Date: _____ (MM/DD/YYYY) Time: _____ (HH:MM) Weather: _____

Depth Range (Ft): _____

Contractor Personnel: Amanda Miller, Tomas Hernandez, Travis Steele, John Jent

Material: _____

Remarks/Visitors: _____

Appendix D – Daily QC Reports

DAILY QUALITY CONTROL REPORT

Project CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052 Corp Technical Manager- Tom Chanda
Contractor- Prudent Technologies, Inc Contractor Project Manager- John Jent

Date 11-9-2011 Day of Week WED
(MM/DD/YEAR)
Weather- General ____ Bright; ____ Sunny; ____ Clear; ✓ Overcast; ____ Rain
Temp 60
Wind ____ Still: ✓ Moderate; ____ High
Humidity ____ Dry; ✓ Moderate; ____ Humid

Contractor Personnel: AMANDA MILLER, TOMAS HERNANDEZ, JOHN JENT

Visitors on site: MARK PATTERSON, MARK MCINTER, SCOTT KELLY
ERIC CHANG

Subcontractors on Site - Name (Company): JEREMY LECKRONE (GRONTZ DRILLING)
KEITH BICKEL (DIAMOND ENVIRO)

Equipment on Site: GEOPROBE TRACK-MOUNTED

Work Performed:

PRIMARY, QC, + QA SUBSURFACE SOIL ISM SAMPLING AT DEBRIS PILE C
SURFACE SOIL ISM SAMPLING AT DEBRIS PILE C + BURN
AREA

Date 11-9-2011
(MM/DD/2010)

Work Performed (Continued)

Quality Control Activities (Including Field Calibrations):

TRIPLICATE SUBSURFACE ISM SAMPLING AT DEBRIS PILE C

Health and Safety Levels and Activities:

LEVEL C, SAFETY TAILGATE MTG. -- LIFE RING + 50' ROPE AT BASE OF DEBRIS PILE C ADJACENT TO NORTHERN-MOST POND

Problems Encountered/Resolution or Corrective Action Taken:

RAIN - 4:00 ENDED SAMPLING

Remarks:

Tomorrow's Expectations: FINISH SURFACE SOIL SAMPLING AT DEBRIS PILES A & B, TRANSITE SAMPLING, & DRUM SAMPLING

Prepared by: [signature] (Signature & Date) 11-9-2011

QA Check by: _____ (Signature & Date)

DAILY QUALITY CONTROL REPORT

Project CC-78 Initial Intrusive Investigation
USACE Contract No. W912QR-10-P-0052 Corp Technical Manager- Tom Chanda
Contractor- Prudent Technologies, Inc Contractor Project Manager- John Jent

Date 11-10-2011 Day of Week THURSDAY
(MM/DD/YEAR)

Weather- General ____ Bright; ✓ Sunny; ____ Clear ; ____ Overcast; ____ Rain
Temp 40
Wind ____ Still: ✓ Moderate; ____ High
Humidity ✓ Dry; ____ Moderate; ____ Humid

Contractor Personnel: AMANDA MILLER, TOMAS HERNANDEZ, JOHN JENT

Visitors on site: NONE

Subcontractors on Site - Name (Company): KEITH BICKEL (DIAMOND)
JOE KIRK + CHRIS BEAN (SWS ENVIRO)

Equipment on Site: NONE

Work Performed:

DEBRIS PILE A- PRIMARY, QC + QA ISM SURFACE SOIL SAMPLES
PRIMARY, QC, + QA DISCRETE SURFACE SOIL VOC SAMPLES
PRIMARY + QA SAMPLES OF TRANSITE
DEBRIS PILE B- PRIMARY ISM SURFACE SOIL SAMPLE
PRIMARY DISCRETE SURFACE SOIL VOC SAMPLE
PRIMARY TRANSITE + ROOFING MATERIAL SAMPLE
~~BURN AREA~~ ~~PRIMARY ISM SURFACE SOIL SAMPLE~~
~~PRIMARY DISCRETE SURFACE SOIL VOC SAMPLE~~
DRUM ~~SAMPLE~~ #1 SAMPLE OF DRUM CONTENTS
DRUM #2 SAMPLE OF DRUM CONTENTS

Date 11-10-2011
(MM/DD/2010)

Work Performed (Continued)

Quality Control Activities (Including Field Calibrations):

TRIPLICATE SURFACE SOIL ISM + DISCRETE SAMPLES

Health and Safety Levels and Activities:

LEVEL B FOR DRUM SAMPLING

TYVEK FOR DEBRIS PILE A + B SAMPLING

Problems Encountered/Resolution or Corrective Action Taken:

NONE

Remarks:

Tomorrow's Expectations: TRAVEL HOME

Prepared by: _____ (Signature & Date) QA Check by: _____ (Signature & Date)

Appendix E – Field Boring Logs

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-1 Primary

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-5|0002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Front Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
		7"	0-1			0-1 Blk clay w/ roots		8:54 AM
		16"	1-3	0		1-5 Blk clay turns into silty sand, turns into blk clay/silty sand - Fill Material		Rec. 3-ft
		13"	3-5					
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-1 QA

Sheet: 1 of 1

Date: 11.8.11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontier Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 Blk clay w/ roots		9:25 AM
		16"	1-3	0		1-5 Blk clay turns into silty sand, turns into blk clay / silty sand - Fill Material		REC. 3-ft
		15"	3-5					
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-1 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-51002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			0-1 Blk clay w/ roots	0	9:12 AM
		16"	1-3	0		1-5 Blk clay turns into silty sand, turns into blk clay/silty sand - Fill Material		REC. 38"
		15"	3-5					
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-2 Primary

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			Blk clay - gravely blk soil/clay turns into sandy silty clay w/glass	0	9:13 AM
		15"	1-3					REC 36"
		15"	3-5			3-5 Pink sand 5", sandy silt brick at the bottom.		
5						- Fill Material	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-2 QA

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			Blk clay	0	10:00
		16"	1-3			3-5 silty clay silty sand (Pink) w/ glass - Fill		Rec. 38"
		16"	3-5					
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-2 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6-510002

Logged By: Tomas Hernandez

Reviewed By: _____

Drilled By: Frontz Drilling

Driller: _____

Drilling Method: _____

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth: _____

Groundwater Measurement: _____

TOC Elevation: _____

Groundwater Elevation: _____

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			0-1 Blk clay	0	9:50 AM
		13"	1-3			1-3 Blk clay } Fill		Rec. 34"
		13"	3-5			3-5 Pinkish sandy silt w/glass } Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-3 Primary

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 62-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 tanish silty clay w/ roots		10:23 AM
		15"	1-3	0		1-3 tanish silty clay		Rec. 46"
		18"	3-5			3-5 tanish silty clay turns into pinkish silty sand 3"		
5						- Fill	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services Inc

BORING LOG: B-3 QA

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			0-1 Blk Clay	0	10:55AM
		20"	1-3	0		1-3 tanish silty clay w/ roots		Rec. 48"
		20"	3-5			3-5 silty sand w/ tanish clay interbedded - Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-3 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 organics & silty clay		10:40 AM
		10"	1-3	0		1-3 silty clay - tan then large gravel seam then hard clay		Rec. 26"
		13"	3-5			3-5 pinkish sandy silt w/ gravel seam on top to light brown sand. - Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. (fka Prudent Environmental Services, Inc.)

BORING LOG: B-4 Primary

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-51002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Fronts Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			Blk clay w/ roots	0	11:09 AM
	18"		1-3			- Blk clay		Rec. 44"
	18"		3-5			- silty sand w/ Pink sand		
						. Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc

BORING LOG: B-4 QA

Sheet: 1 of 1
Date: 11-8-11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-310002
Logged By: Tomas Hernandez
Reviewed By:

Drilled By: Frontz Drilling
Driller:
Drilling Method:

Total Depth: 5-Ft
Sampling Method: Macro Core
Groundwater Depth:

Groundwater Measurement:
TOC Elevation:
Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 tanish silty clay		11:30 AM
		20"	1-3			1-3 silty clay		Rec. 46"
		20"	3-5			3-5 sandy silty clay		
5						- Fill	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-4 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontier Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			tanish clay 0-1		11:20 AM
			1-3	0		1-3 tanish clay		Rec. 42"
			3-5			3-5 pinkish silty sand w/ tanish sands - Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-5 Primary

Sheet: 1 of 1

Date: ~~8-11-8~~ 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Jonas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 tanish w/ gravel		11:40 AM
		16"	1-3	0		1-3 tanish clay		Rec. 39"
		16"	3-5			3-5 tanish / pink silty sand		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-5 QA

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frantz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			0-1 tanish silt/clay	0	12:10 PM
		15"	1-3	0		1-3 (brick) gravel silty clay		Rec. 34"
		19"	3-5			3-5 tanish silty sand - Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-5 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method:

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0			0-1			1-3 silty tan clay mix gravel	0	11:55AM
			1-3	0				Rec. 3'
	1.5'	1.5'				3-5 silty sand mix gravel/sandstone		
	1.5'	1.5'	3-5			- Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-6 Primary

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 organics		12:25 PM
			1-3			1-3 silty clay tanish		Rec. 42"
			3-5			3-5 tanish silty clay turns into sand silt		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: B-6 QA

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-51002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontz Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 tanish silty clay		12:35
		12"	1-3	0		1-3 tanish silty clay		Rec. 33"
5		12"	3-5			3-5 tanish silty clay turns to orange/brn silty sand	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services Inc

BORING LOG: B-6 QC

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002

Logged By: Tomas Hernandez

Reviewed By:

Drilled By: Frontier Drilling

Driller:

Drilling Method:

Total Depth: 5-ft

Sampling Method: Macro Core

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
			0-1			0-1 organics / blk clay		12:28 PM
		16"	1-3	0		1-3 tanish silty clay		Rec. 38"
		16"	3-5			3-5 tanish silty clay turns into reddish/ pink sandy silt		
						- Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Engineering and Services Inc.

BORING LOG: C78SS-001M-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G510002 (CC78)

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.6 ft

Sampling Method: Push Probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	CL	Dark brown to blk silty clay		Refusal @ 0.6 ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-X002-0001-SO Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G510002 Logged By: John Jent Reviewed By: _____

Drilled By: _____ Driller: John Jent Drilling Method: _____

Total Depth: 0.5 ft Sampling Method: _____ Groundwater Depth: _____

Groundwater Measurement: _____ TOC Elevation: _____ Groundwater Elevation: _____

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	Brwn/Blk silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc

BORING LOG: C7855-003-0001-SO

Sheet: 1 of 1
Date: 11-8-11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002
Logged By: John Jent
Reviewed By:
Drilled By:
Driller: John Jent
Drilling Method:
Total Depth: 0.8-ft
Sampling Method: Push Probe
Groundwater Depth:
Groundwater Measurement:
TOC Elevation:
Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	CL	Blackish/~~R~~ brown clay w/ trace silt		Refusal at 0.8-ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-004-0001-SO

Sheet: 1 of 1

Date: 11-8-91

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5 - ft

Sampling Method: Step Probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	very dark brown silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-005-0001-SO

Sheet: 1 of 1

Date: 11.8.11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G51000.2

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0-1-8ft

Sampling Method:

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	CL	very dark brown silty clay		refusal at 0.7ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-006-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5 ft

Sampling Method:

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	brown/black silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-007-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.8 ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	CL	very dark brown silty clay		refusal at 0.8 ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-008-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5-ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	X		0-0.5	0	CL	Blk/brown silty clay	0	
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-010-0001-SO

Sheet: 1 of 1

Date: 11.8.11

Site Name: Debris Pile B

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Sent

Reviewed By:

Drilled By:

Driller: John Sent

Drilling Method:

Total Depth: 0.8-ft

Sampling Method: Slp probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	X		0-1	0	CL	very dark brown silty clay	0	refusal at 0.8-ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C78GS-011-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile B

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5 ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	very dark brown to blk silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-013-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Sent

Reviewed By:

Drilled By:

Driller: John Sent

Drilling Method:

Total Depth: 1-8'

Sampling Method: Step Probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	CL	Dark brown silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-014-0001-SO

Sheet: 1 of 1

Date: 11·8·11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5 ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	Dark brown silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C18SS-015-0001-SO

Sheet: 1 of 1

Date: 4.8.11

Site Name: Burn Area

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 1-ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-1	0	~~CL~~ CL	black charcoaly on top ~3" ashey gray silty clay 3"-12"		photos of sample
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc

BORING LOG: C7855-016-0001-SO

Sheet: 1 of 1

Date: 11-8-11

Site Name: Burn Area

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: 6510002

Logged By: John Jent

Reviewed By:

Drilled By:

Driller: John Jent

Drilling Method:

Total Depth: 0.5 ft

Sampling Method: Step probe

Groundwater Depth:

Groundwater Measurement:

TOC Elevation:

Groundwater Elevation:

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	X		0-0.5	0	CL	black & charcoaly on top 2". rest is mixed ashes grass & lt. brwn silty clay.		photos of sample
5							5	
10							10	
15							15	
20							20	
25							25	

Appendix F – Typed Field Boring Logs

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-1 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	XXXX

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-1 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich

Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe

Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	XXXXXXXXXXXXXXXXXXXX		0 - 1			Black clay w/ roots	0	9:25 AM
						---		REC. 3 ft.
				0 ppm		Black clay turns into silty sand, turns into black clay/silty sand		
		16"	1 - 3			-Fill Material		
		15"	3 - 5					
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-1 QC

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	XXXX

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-2 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Black clay - gravely black soil/clay turns into sandy silty clay with glass.		9:43 AM REC. 36"
	x			0 ppm				
	x	15"	1 - 3					
	x					Pink sand 5" sandy silt brick at the bottom		
	x	15"	3 - 5					
5	x					-Fill Material	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-2 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Black clay		10:00 AM
	x					----------		REC. 38"
	x			0 ppm		Silty clay silty sand (pink) with glass		
	x	16"	1 - 3					
	x					-Fill Material		
	x							
	x	16"	3 - 5					
5	x						5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-2 QC

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile C

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78) | Logged By: Tomas Hernandez | Reviewed By: Morgan Helfrich

Drilled By: Frontz Drilling | Driller: Jeremy Leckrone | Drilling Method: Push Probe

Total Depth: 5.0 ft | Sampling Method: Macro Core | Groundwater Depth: N/A

Groundwater Measurement: N/A | TOC Elevation: N/A | Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	xxxx

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-3 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Drilled By: Frontz Drilling
Total Depth: 5.0 ft
Groundwater Measurement: N/A

Logged By: Tomas Hernandez
Driller: Jeremy Leckrone
Sampling Method: Macro Core
TOC Elevation: N/A

Reviewed By: Morgan Helfrich
Drilling Method: Push Probe
Groundwater Depth: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Tannish silty clay with roots		10:23 AM
	x							REC. 46"
	x			0 ppm		Tannish silty clay		
	x	18"	1 - 3					
	x					Tannish silty clay turns into pinkish silty sand 3"		
	x	18"	3 - 5			-Fill Material		
5	x						5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-3 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Black clay		10:55 AM
	x							REC. 48"
	x			0 ppm		Tannish silty clay with roots		
	x	20"	1 - 3					
	x					Silty sand w/ tannish clay interbedded		
	x	20"	3 - 5			-Fill Material		
5	x						5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-3 QC

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	XXXX

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-4 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	XXXX

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-4 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Tannish silty clay		11:30 AM
	x							REC. 46"
	x			0 ppm		Silty clay		
	x	20"	1 - 3					
	x					Sandy silty clay		
	x					-Fill Material		
	x	20"	3 - 5					
5	x						5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-4 QC

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	xxxxxxxxxxxxxxxxxxxx		0 - 1 1 - 3 3 - 5	0 ppm		Tannish clay --- Tannish clay Pinkish silty sand with tannish sands -Fill Material	0	11:20 AM REC. 42"
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-5 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1			Tannish with gravel		11:40 AM
	x							REC. 39"
	x			0 ppm		Tannish clay		
	x	16"	1 - 3					
	x					Tannish/pink silty sand		
	x	16"	3 - 5					
5	x						5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-5 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	XXXXXXXXXXXXXXXXXXXX	13"	0 - 1	0 ppm		Tannish silt/clay --- (Brick) gravel silty clay	0	12:10 PM REC. 34"
			1 - 3					
		14"	3 - 5			Tannish silty sand -Fill		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC.
dba Prudent Environmental Services, Inc.

BORING LOG: B-5 QC

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x		0 - 1					11:55 AM
	x							REC. 37"
	x			0 ppm		Silty tan clay mix gravel		
	x	13"	1 - 3					
	x					Silty sand mix gravel/sandstone		
	x	13"	3 - 5					
5	x					-Fill	5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-6 Primary

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich

Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe

Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	xxxxxxxxxxxxxxxxxxxx		0 - 1 1 - 3 3 - 5	0 ppm		Organics --- Silty clay tannish Tannish silty sand turns into sand silt	0 5 10 15 20 25	12:25 PM REC. 42"

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-6 QA

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich
Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe
Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	XXXX

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: B-6 QC

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: Tomas Hernandez
Reviewed By: Morgan Helfrich

Drilled By: Frontz Drilling
Driller: Jeremy Leckrone
Drilling Method: Push Probe

Total Depth: 5.0 ft
Sampling Method: Macro Core
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	XXXX

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-001M-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)

Logged By: John Jent

Reviewed By: Morgan Helfrich

Drilled By: Prudent

Driller: John Jent

Drilling Method: Push Probe

Total Depth: 0.6 ft

Sampling Method: Step Probe

Groundwater Depth: N/A

Groundwater Measurement: N/A

TOC Elevation: N/A

Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 1	0 ppm	CL	Dark brown to black silty clay		Refusal at 0.6 ft.
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-002-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich
Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe
Total Depth: 0.5 ft
Sampling Method: Step Probe
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Brown/Black silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-003M-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)

Logged By: John Jent

Reviewed By: Morgan Helfrich

Drilled By: Prudent

Driller: John Jent

Drilling Method: Push Probe

Total Depth: 0.8 ft

Sampling Method: Step Probe

Groundwater Depth: N/A

Groundwater Measurement: N/A

TOC Elevation: N/A

Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x x		0 - 1	0 ppm	CL	Blackish/brown clay with trace silt		Refusal at 0.8ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-004-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich
Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe
Total Depth: 0.5ft
Sampling Method: Step Probe
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Very dark brown silty clay.		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-005M-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich

Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe

Total Depth: 0.7ft
Sampling Method: Step Probe
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x x		0 - 1	0 ppm	CL	Very dark brown silty clay.		Refusal at 0.7ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-006-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich
Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe
Total Depth: 0.5ft
Sampling Method: Step Probe
Groundwater Depth: N/A
Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Brown/black silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-007M-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile A

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)

Logged By: John Jent

Reviewed By: Morgan Helfrich

Drilled By: Prudent

Driller: John Jent

Drilling Method: Push Probe

Total Depth: 0.8ft

Sampling Method: Step Probe

Groundwater Depth: N/A

Groundwater Measurement: N/A

TOC Elevation: N/A

Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x x		0 - 1	0 ppm	CL	Very dark brown silty clay.		Refusal at 0.8ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-008-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile A
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich

Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe

Total Depth: 0.5ft
Sampling Method: Step Probe
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Black/brown silty clay		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-010M-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile B

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78) | Logged By: John Jent | Reviewed By: Morgan Helfrich

Drilled By: Prudent | Driller: John Jent | Drilling Method: Push Probe

Total Depth: 0.8ft | Sampling Method: Step Probe | Groundwater Depth: N/A

Groundwater Measurement: N/A | TOC Elevation: N/A | Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
0	xxx		0 - 1	0 ppm	CL	Very dark brown silty clay.	0	Refusal at 0.8ft
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-011-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Debris Pile B

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)

Logged By: John Jent

Reviewed By: Morgan Helfrich

Drilled By: Prudent

Driller: John Jent

Drilling Method: Push Probe

Total Depth: 0.5ft

Sampling Method: Step Probe

Groundwater Depth: N/A

Groundwater Measurement: N/A

TOC Elevation: N/A

Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Very dark brown to black silty clay.		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-013-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich

Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe

Total Depth: 1ft
Sampling Method: Step Probe
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x x		0 - 1	0 ppm	CL	Dark brown silty clay.		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-014-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Debris Pile C
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich

Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe

Total Depth: 0.5ft
Sampling Method: Step Probe
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Dark brown silty clay.		
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-015M-0001-SO

Sheet: 1 of 1

Date: 11/08/11

Site Name: Burn Area

Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78) | Logged By: John Jent | Reviewed By: Morgan Helfrich

Drilled By: Prudent | Driller: John Jent | Drilling Method: Push Probe

Total Depth: 1ft | Sampling Method: Step Probe | Groundwater Depth: N/A

Groundwater Measurement: N/A | TOC Elevation: N/A | Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x x		0 - 1	0 ppm	CL	Black charcoaly on top 3". Ashy gray silty clay 3"-12"		Photos of sample
5							5	
10							10	
15							15	
20							20	
25							25	

PRUDENT TECHNOLOGIES, INC. dba Prudent Environmental Services, Inc.

BORING LOG: C78SS-016-0001-SO

Sheet: 1 of 1
Date: 11/08/11

Site Name: Burn Area
Site Address: Ravenna Army Ammunition Plant, Ravenna, Ohio

Project No: G-510002 (CC-78)
Logged By: John Jent
Reviewed By: Morgan Helfrich

Drilled By: Prudent
Driller: John Jent
Drilling Method: Push Probe

Total Depth: 0.5ft
Sampling Method: Step Probe
Groundwater Depth: N/A

Groundwater Measurement: N/A
TOC Elevation: N/A
Groundwater Elevation: N/A

Depth (Feet)	Interval	% Recovery	Sample ID	PID/FID (ppm)	USCS	Soil Description	Depth (Feet)	Comments
	x x		0 - 0.5	0 ppm	CL	Black and charcoaly on top 2". Rest is mixed ashy gray and light brown silty clay.		Photos of sample
5							5	
10							10	
15							15	
20							20	
25							25	

Appendix G – Data Verification Report

(Provided in the attached CD)

PRUDENT TECHNOLOGIES, Inc.

DATA VERIFICATION REPORT

RAVENNA CC-78

By

Samir A. Mansy, PhD.

Senior Chemist

Report #DVRR02192012

22 February 2012

smansy@prudentweb.com

Table of Contents:

Section 1.0 Project Description

Section 2.0 Project Organization & Responsibilities

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Section 5.0 Section II – Surrogate Recoveries Data Sheets

Section 6.0 Section III – Comparison Tables, QA/QC Results

Section 1.0 - Project Description

The purpose and scope of the intrusive investigation, data quality objectives, and incremental sampling methodology activities are described in Sections 6.1, 6.2 and 6.5 of the main report.

A full analytical suite is defined as samples that will be analyzed for TAL metals, mercury, explosives, VOCs, SVOCs, propellants, pesticides, and PCBs. For this project, surface Incremental Sampling Methodology (ISM) samples were collected and analyzed from areas surrounding Debris Piles A and B and from within Debris Pile C and the apparent burn area to determine the presence of absence of contamination. The samples collected from the apparent burn area were analyzed for the Ravenna full suite. Additionally discrete samples of apparent transite were collected within Debris Piles A, B and C to determine if Asbestos Containing Materials (ACM) are present. Two 55-gallon drums, with contents unknown, were also sampled and subjected to a toxicity characteristic leaching procedure (TCLP) analyses. Triplicate field quality control (QC)/quality assurance (QA) samples were collected as well. The primary and blind duplicate QC samples were sent to the primary laboratory and the QA samples were sent to the QA laboratory chosen by the USACE (see Section 2.0). Table 1 below lists the total primary and QA samples along with all the analytical procedures required for this effort.

The data was verified following the guidance of EM 200-1-6, *Chemical Quality Assurance for HTRW Projects, 10 October 1997.*

Table 1 Surface ISM Sampling Table for CC-RVAAP 78

Sample Area	Media	Type of Sample	Sample ID	Sample Depth (ft)	Explosives	Propellants	TAL Metals	Mercury	PCBs	SVOCs	VOCs	Pesticides	ACM	TCLP
Debris Pile A	Surface Soil	ISM	C78SS-001M-0001-SO	0 - 1.0	1	1	1	1	1	1	1	1	1	
Debris Pile A	Surface Soil	ISM-QC	C78SS-002M-0001-SO	0 - 1.0	1	1	1	1	1	1	1	1	1	
Debris Pile A	Surface Soil	ISM-QA	C78SS-003M-0001-SO	0 - 1.0	1	1	1	1	1	1	1	1	1	
Debris Pile A	Surface Soil	ISM - MS/MSD P	C78SS-004M-0001-SO	0 - 1.0	1	1	1	1	1	1	1	1		
Debris Pile A	Surface Soil	MS/MSD QA	C78SS-005M-0001-SO	0 – 1.0	1	1	1	1	1	1	1	1		
Debris Pile A	Transite (x 2)	Discrete	C78SS-006-0001-BD CC78-SS-006-0002-BD										1	
Debris Pile B	Surface Soil	ISM	C78SS-007M-0001-SO	0 - 1.0	1	1	1	1	1	1			1	
Debris Pile B	Transite (x 2)	Discrete	C78SS-008-0001-BD C78SS-008-0002-BD										1	
Debris Pile C	Surface Soil	ISM	C78SS-009M-0001-SO	0 - 1.0	1	1	1	1	1	1	1		1	
Apparent Burn Area	Surface Soil	ISM	C78SS-010M-0001-SO	0 - 1.0	1	1	1	1	1	1	1		1	
Drum # 1	Solid Contents	Composite	C78DM-011-0001-WS	Surface										1
Drum # 2	Solid Contents	Composite	C78DM-012-0001-WS	Surface										1
		Equip Rinsate	ER-1		1	1	1	1	1	1		1		
				Totals	**9**	**9**	**9**	**9**	**9**	**9**	**7**	**6**	**8**	**2**

TAL = Target Analyte List
ACM = Asbestos Containing Material
QC = Quality Control
Transite = Asbestos containing product
SVOCs = Semi-volatile Organic Compounds
VOCs = Volatile Organic Compounds
QA = Quality Assurance
TCLP = Toxicity Characteristic Leaching Procedure
PAH = Polycyclic Aromatic Hydrocarbons
ISM = Incremental Sampling Methodology
MS/MSD = Matrix Spike/Matrix Spike Duplicate

Table 2: Sampling IDs at CC RVAAP-78 Quarry Pond Surface Dump

Area of Sample	Media	Type of Sample	Sample ID	Sample Depth (ft)	Explosives	Propellants	TAL Metals	Mercury	PCBs	SVOCs	VOCs	Pesticides	ACM	TCLP	Corrosivity	Ignitability	Reactivity
Debris Pile A	Surface Soil	ISM	C78SS-001M-0001-SO	0 - 1.0	1	1	1	1	1	1		1	1				
	Surface Soil	Discrete	C78SS-002-0001-SO	0.5							1						
	Surface Soil	ISM - QC	C78SS-003M-0001-SO	0 - 1.0	1	1	1	1	1	1		1	1				
	Surface Soil	Discrete	C78SS-004-0001-SO	0.5							1						
	Surface Soil	ISM - QA	C78SS-005M-0001-SO	0 - 1.0	1	1	1	1	1	1		1	1				
	Surface Soil	Discrete	C78SS-006-0001-SO	0.5							1						
	Surface Soil (P)	ISM - MS/MSD	C78SS-007M-0001-SO	0 - 1.0	1	1	1	1	1	1		1					
	Surface Soil(QA)	ISM - MS/MSD	C78SS-008M-0001-SO	0.5	1	1	1	1	1	1		1					
	Transite	Discrete	C78SS-009-0001-BD	Small Piece									1				
Debris Pile B	Surface Soil	ISM	C78SS-010M-0001-SO	0 - 1.0	1	1	1	1	1	1			1				
	Surface Soil	Discrete	C78SS-011-0001-SO	0.5							1						
	Transite	Discrete	C78SS-012-0001-BD	Small Piece									1				
Debris Pile C	Surface Soil	ISM	C78SS-013M-0001-SO	0 - 1.0	1	1	1	1	1	1			1				
	Surface Soil	Discrete	C78SS-014-0001-SO	0.5							1						
Burn Area	Surface Soil	ISM	C78SS-015M-0001-SO	0 - 1.0	1	1	1	1	1	1			1				
	Surface Soil	Discrete	C78SS-016-0001SO	0.5							1						
Drum # 1	Solid Contents	Composite	C78DM-017-0001-WS	Surface			1	1		1		1		1	1	1	1
		Discrete	C78DM-018-0001-WS	Surface							1						
Drum # 2	Solid Contents	Composite	C78DM-019-0001-WS	Surface			1	1		1		1		1	1	1	1
		Discrete	C78DM-020-0001-WS	Surface							1						
		Equip Rinseate	C78-Rinseate-1		1	1	1	1	1	1		1					
				Totals	9	9	11	11	9	11	8	8	8	2	2	2	2

TAL = Target Analyte List
ISM = Incremental Sampling Methodology
SVOCs = Semi-Volatile Organic Compounds
QC = Quality Control
VOCs = Volatile Organic Compounds
QA = Quality Assurance
ACM = Asbestos Containing Material
MS/MSD = Matrix Spike/Matrix Spike Duplicate

Section 2.0 - Project Organization & Responsibilities

The functional project organization and responsibilities are described in Section 3 of the Facility-Wide Sampling and Analysis Plan (SAIC, 2011b) and in the Prudent Work Plan.

Analytical support for this work has been assigned to TestAmerica, North Canton, Ohio. TestAmerica performed all required analyses at that location except for the explosives and propellant analyses, which was performed in the TestAmerica West Sacramento facility. TestAmerica's organizational structure, roles, and responsibilities are identified in Section 4.0 of their Quality Assurance Manual (QA Manual), which is available for review upon request. The address and telephone number for TestAmerica laboratories are as follows:

TestAmerica North Canton

4101 Shuffle Street NW
North Canton, Ohio 44720
Phone: 330-497-9396
Fax: 330-497-0772
www.testamericainc.com
Contact: Mark Loeb

TestAmerica West Sacramento
(samples to be analyzed for explosives/propellants will be forwarded to West Sacramento)

880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600
Fax: 916-372-1059
Contact: Karen Dahl

EMLab P & K
(For asbestos analyses)

1150 Bayhill Drive
Suite 100
San Bruno, CA 94066
Phone: 866 888-6653
POC: to be determined

USACE has selected the following QA laboratory

CT Laboratories

1230 Lange Court
Baraboo, WI 53913
Phone: 608-356-2760
POC: Pat Letterer

Data Validation will be performed by a 3rd Independent Party via USACE Louisville District:

MECx, LP

12269 East Vessar Drive
Aurora, Colorado 80014
Phone: 720 535-5502
Fax: 720 535-7555
POC : Elizabeth Wessing
Mobile: 303-881-6816
Email: Elizabeth.wessing@mecx.net

Prudent Technologies, Inc.

Data Verification Report
(DVRR)

Project Name: Ravenna Ammunition Plant

Location: Ravenna, Ohio

Reviewer: Samir A. Mansy

Title: Senior Chemist

Laboratory Name: TestAmerica – North Canton

Project No: 240-5866-1

Review Date: 1/5/2012

Report Date (s): 1/4/2012

Methodology: SW846

Review: Manual, 100%

QC Elements			Compliance	
			N	Y
Laboratory Status	Validated			x
1. Cooler's Receipt Form (s):		Comments		
Chain of Custody (CC)	Chain Kept			X
Cooler's Temperature	2 - 4 Celsius			X
Sample Labeling	Accepted			X
Sample Containers	Acceptable			X
Headspace VOC	None			
Preservative	Yes			X

2. Holding Time:					Compliance	
Methods		Out	In	Comments	N	Y
Volatile Organics EPA 8260B	14 Days		Y			X
Semi-Volatile Org EPA 3540	Extraction: 14 days		Y			X
Semi-Volatile Org EPA 8270C	Analysis: 40 days		Y			X
PCB/Pesticides EPA 3540	Extraction: 14 days		Y			X
PCB/Pesticides EPA 8081B	Analysis: 40 days		Y			X
Herbicides Choose an item.	Extraction: Choose an item.	Choose an item.		NA		
Herbicides Choose an item.	Analysis Choose an item.	Choose an item.		NA		
Explosive: EPA 3550	Extraction: 14 days		Y			X
Explosive: EPA 8330B	Analysis: 40 days		Y			X
Nitro-cellulose	14 days		Y			X
Metals/ICP Choose an item.	6 Months		Y			X
Metals/Graphite Choose an item.	6 Months	Choose an item.		NA		
Hexavalent chromium, EPA 7196	24 Hours	Choose an item.		NA		
Mercury, EPA 7471	28 days		Y			X

3. Analysis:			Compliance	
3.1 Volatile Organic Analysis			N	Y
Method Number: **EPA 8260B**	Correct Analysis: Y			X
Reported MDL	Y			X
RL/MRL	Acceptable			X
VOC Trip Blank	NA	Not required for soil samples		
Method Blank (MB)	Present			X
Rinsates Blank	Not Applicable			
Spikes Recovery: LCSs	Acceptable	See Sections I-Graphs II- Data Sheets		X
RPD LCS/LCSD	Not Applicable			X
Surrogates:		See Sections I-Graphs		
MB	Acceptable	II- Data Sheets		X
LCS	Acceptable			X
Samples	Acceptable			X
Samples	< QC limits	Samples ID 240-5866-34, -44, -46 had 2	X	
Samples	< QC limits	out of 4 surrogates recoveries below	X	
Samples	< QC limits	the 85% QC Limits.	X	
MS	Acceptable			X
MSD	Acceptable			X
		Sample ID240-5866-38 had 3 out of 4 surrogates' recoveries below the QC Limits.	X	
Spikes Recovery:		See Sections I-Graphs		
MS	Acceptable	II- Data Sheets		X
MSD	Acceptable			X
RPD				X
MS/MSD	Acceptable			

VOA Completeness	**Fill in number of samples analyzed & Total number of requested analyses from Chain of Custody (s)** Number Samples Analyzed: 26 Total Requested Analyses: 26 Results: **100%**		X

3. Analysis Continued:			Compliance	
3.2 Semivolatile Organic Analysis			N	Y
Method Number: **EPA 8270C**	Correct Analysis: Y	Indicate only wrong method(s) used:		X
Reported MDL	Y			X
RL/MRL	Acceptable			x
VOC Trip Blank	Not Applicable			
Method Blank (MB)	Present			X
Rinsates Blank	Present			X
Spikes Recovery: LCSs	Acceptable	See Sections I-Graphs II- Data Sheets		X
RPD LCS/LCSD	Not Required			
Surrogates:		See Sections I-Graphs		
MB	**Acceptable**	II- Data Sheets		X
LCS	Acceptable			X
LCSD	Not Required			
Samples	Acceptable	28 Surrogates were within the laboratory QC		X
MS	Acceptable	limits.		X
MSD	Acceptable			X
Samples	< QC Limits	6 Surrogates out of the QC Limits.		
Samples	< QC Limits	One surrogate was out of its QC Limits		
		<u>Lab ID: 240-5866-7</u>: Sample ID: C78SB-021M-0002-SO had all six surrogate recoveries below the minimum laboratory QC limits.	X	
		<u>Lab ID: 240-5866-21</u>: Sample ID: C78SB-022M-0001-SO Had one surrogate, 2,4,6-Tribromophenol, recovery at 20%; below the QC limits of 35%.	X	

3. Analysis Continued:			Compliance	
3.2 Semivolatile Organic Analysis (Continued)			N	Y
Spikes Recovery:		See Sections I-Graphs		
MS	Acceptable	II- Data Sheets		X
MSD	Acceptable			X
RPD MS/MSD	Acceptable	All RPDs were below the Upper Limit of RPD Criteria of 30		X
SVA Completeness	Fill in number of samples analyzed & Total number of requested analyses from Chain of Custody (s) Number Samples Analyzed: 35 Total Requested Analyses: 35 Results: 100%			X

3. Analysis Continued:			Compliance	
3.3 Polychlorinated Biphenyls (PCB)			N	Y
Method Number: **EPA 8082A**	Correct Analysis: Y	Indicate only wrong method(s) used:		X
Reported MDL	Y			X
RL/MRL	Acceptable			X
VOC Trip Blank	Not Applicable			
Method Blank (MB)	Present			X
Rinsates Blank	Present			X
Spikes Recovery: LCSs	Acceptable	See Sections I-Graphs II- Data Sheets		X
Surrogates:		See Sections I-Graphs II- Data Sheets		
MB	Acceptable			
LCS	Acceptable			X
LCSD	Not Required			
Samples	Acceptable	<u>TCX Surrogate</u>: All samples surrogates were within the Laboratory QC Limits.		
MS	Acceptable			
MSD	Acceptable	<u>DCB Surrogate</u>: Only 3 samples had surrogates recoveries below the Laboratory QC limits:		
Sample	< QC Limits of 60%			
Sample	< Qc Limits of 60%			
Sample	< QC Limits of 60%	<u>Sample Name</u> <u>Recovery</u>		
		C78SB-021M-0001-SO 53%	X	
		C78SB-015M-0001-SO 52%	X	
		C78SB-019-0001-WS 53%	X	
		Data are acceptable with one surrogate recovery out of the limits.		X

3. Analysis Continued:			Compliance	
3.4 Polychlorinated Biphenyls (PCB)/Continued			N	Y
Spikes Recovery:		See Sections I-Graphs		
MS	Acceptable	II- Data Sheets		X
MSD	Acceptable			X
RPD	Acceptable			X
MS/MSD				
PCB Completeness	**Fill in number of samples analyzed & Total number of requested analyses from Chain of Custody (s)** Analyzed: 28 Requested: 28 **100%**			X

3. Analysis Continued:			Compliance	
3.4 Organochlorine Pesticides			N	Y
Method Number: **EPA 8081B**	Correct Analysis: Y	Indicate only wrong method(s) used:		X
Reported MDL	Y			X
RL/MRL	Acceptable			
VOC Trip Blank	NA			
Method Blank (MB)	Present			X
Rinsates Blank	Present			X
Spikes Recovery: LCSs	Acceptable	See Sections I-Graphs II- Data Sheets		
LCSD	Not Required			
Surrogates:		See Sections I-Graphs		
MB	Acceptable	II- Data Sheets		X
LCS	Acceptable			X
LCSD	Not Required			
Samples	Acceptable	DCB		X
MS	Acceptable	C78SS-001M-0001-SO 42%	X	
MSD	< QC Limits	C78SS-0007-0001-SO 50%	X	
MS	< QC Limits 55%	C78SS-0007-0001-SO 54%	X	
MSD	< QC Limits 55%	DCB Surrogate Recovery Limits (55-130%)		
Spikes Recovery:		See Sections I-Graphs		
MS	Acceptable	II- Data Sheets		
MSD	Acceptable	Total spikes were 20 compounds:		
RPD	Acceptable	Sample #C78SS-001M-0001-SO;		
MS/MSD		All compounds recoveries were within QC Limits; except five were > Limits for MS,	X	X
		and three > Limits for MSD.	X	
		Sample #C78SS-0007-0001-SO;		
		All compounds recoveries were within QC Limits; except five were > Limits for MS,	X	X
		and six > Limits for MSD.	X	

3. Analysis Continued:			Compliance	
3.4 Organochlorine Pesticides (Continued)			N	Y
RPD	Acceptable	See Sections I-Graphs II- Data Sheets		
Spikes Recovery:	Acceptable	All compounds RPDs were acceptable <30,		
MS	Acceptable	except for Methoxychlor RPD >30 for		X
MSD		sample # C78SS-0007-0001-SO	X	
RPD MS/MSD	Acceptable			X
Pesticides Completeness	Fill in number of samples analyzed & Total number of requested samples analyses from Chain of Custody (s) Number Samples Analyzed: 26 Total Samples Analyses: 26 Results: 100%			

			N	Y
Method Number: **EPA 8330B**	Correct Analysis: Y	Indicate only wrong method(s) used:		X
Reported MDL	Y			X
RL/MRL	Acceptable			X
Method Blank (MB)	Present			X
Rinsates Blank	Present			X
Spikes Recovery: LCSs	Acceptable			X
RPD LCS/LCSD	Choose an item.	Not Required		X
Surrogates:		See Sections I-Graphs		
MB	Acceptable	II- Data Sheets		X
LCS	Acceptable			X
LCSD	Not Required	Outside of QC Limits (78-108%)		
Samples	Acceptable	Sample ID: Recovery		X
MS	> QC Limits	C78SS-001M-0001-SO 123%	X	
MSD	> QC Limits	C78SS-0007-0001-SO 143%	X	
		C78SS-0007-0001-SO-MS 117%	X	
		C78SS-0007-0001-SO-MSD 118%	X	
Spikes Recovery:		See Sections I-Graphs		
MS	Acceptable	II- Data Sheets		
MSD	Acceptable			
		All analytes were recovered within QC	X	
		Limits of 80-125% except for:	X	
		4-Amino-2,6-dinitrotoluene was		X
		recovered at 321% from MS & at 302%		X
		from MSD.		
RPD MS/MSD	Acceptable			X

Explosive residues (Continued) Explosive Completeness	**Fill in number of samples analyzed & Total number of requested samples analyses from Chain of Custody (s)** Number Samples Analyzed: 25 — Total Requested Analyses: 25 — Results: **100%**		X

3. Analysis Continued			Compliance	
3.6 Metal Analytes			N	Y
Method Number: EPA 6020	Correct Analysis: Y	Indicate only different method(s) used: EPA 6020 was used in place of EPA 6010B, Acceptable		X
Reported MDL	Y			X
RL/MRL	Acceptable			x
Method Blank (MB)	Present			X
Rinsates Blank	Present			X
Analyte Spikes Recovery: LCSs	Acceptable			X
Analyte Recovery:				
Samples	Acceptable			X
Pr-Digested Spike	Acceptable			X
Post-Digested Spike	Not Performed			
Analyte Recovery:				
Sample	Acceptable			X
Duplicate	Required	Acceptable		X
RPD	Acceptable	Antimony RPD was out of Limits, its published digestion method/SW846 is inapplicable	X	X
Metal Completeness	Fill in number of samples analyzed & Total number of requested samples analyses from Chain of Custody (s) Number Samples Analyzed: 24 Total Requested Analyses: 24 Results: 100%			X

4. Comparability:				Compliance	
				N	Y
Evaluations	Agreement Between QC & QA Sample Results		Remarks. See section III		
	No*	Yes			
Volatile Organics EPA 8260B		Yes	Total xylene was detected at 26 µg/kg in sample C78SB-022V-0006-SO, and was not detected in its corresponding QA sample C78SB-023V-0006-SO All remaining samples with their corresponding QA samples were in agreements, See Tables 1-9.	X X X	
Semi-Volatile Org EPA 8270C	No		Major disagreements. See Tables 10-18.	X	
PCB: EPA 8082A		YES	See Tables 19-27: Agreements between samples of non-detect.		X
	No		Disagreements between detected levels, RPD > QC Limits.	X	
Pesticides: EPA 8081B		YES	See Tables 28-36: All samples except the followings:		X
	No		<u>Sample C78SS-003M-0001-SO</u> DDT, RPD=121 <u>Sample C78SB-22M-0002-SO</u> DDT, RPD=109 <u>Sample C78SB-22M-0004-SO</u> Methoxychlor, RPD=152 <u>Sample C78SB-22M-0101-SO</u> Methoxychlor, RPD=114	X X X X	
Explosive Residues: EPA 8330B/MOD		Yes	All samples except one. Only disagreement of two compounds In one sample C78SS-003M-0001M-SO TNT, RPD = 116 2,Amino-4,6-dinitrotoluene, RPD=66.7	 X X	X
	Choose an item.				
Metals, *EPA 6020*	No		There are major disagreements between analyte concentrations,	X	

Metals (Continued)		usually analytes determined in CT laboratories were at higher levels than those determined in TestAmerica Laboratories, and problems might be due to different grinding procedures between two laboratories.		

Acknowledgment:
I certify this review package is in compliance with the terms and conditions of the contract, both technically and for completeness other than was/were outlined in the tables above. Release of the hardcopy review data package and/or in the computer ADR/EDMS on CD has been authorized by Prudent Reviewer, as verified by the following signature.

Signature: 

Date: 2/19/2012

Name: Samir A. Mansy, PhD

Title: Senior Chemist

SECTION I

Surrogate Recovery Graphs

Volatile Organic Analysis

DBFM Laboratory QC Limits = 59-138%

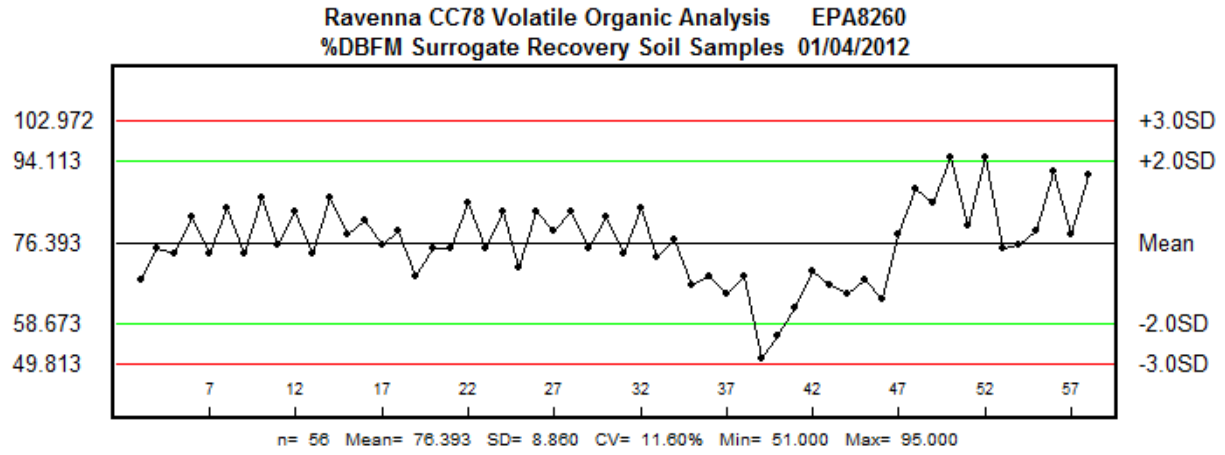

Figure 1

BFB Laboratory QC Limits = 85-120%

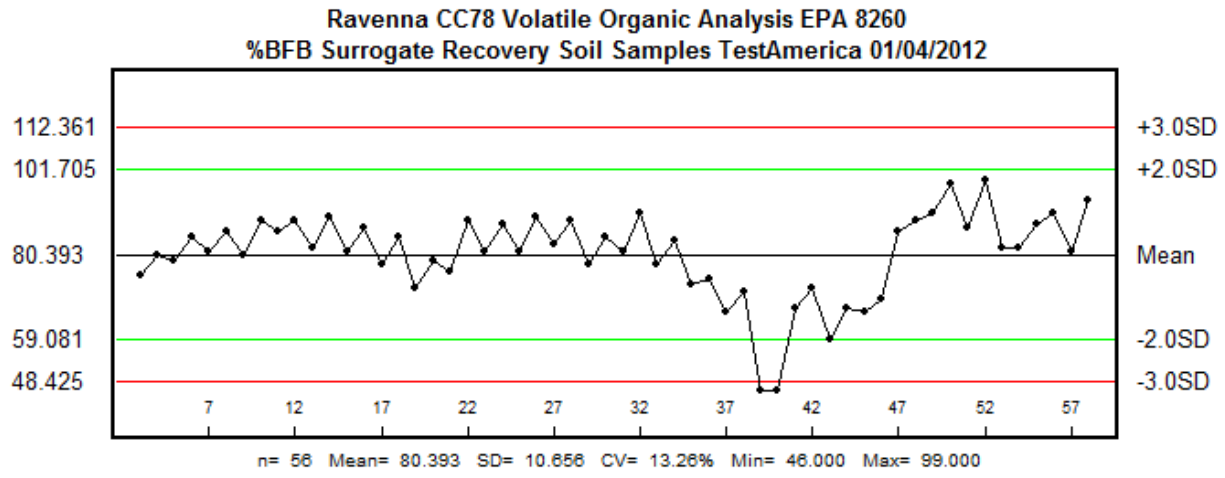

Figure 2

Volatile Organic Analysis

1,2-DCE Laboratory QC Limits = 61-130%

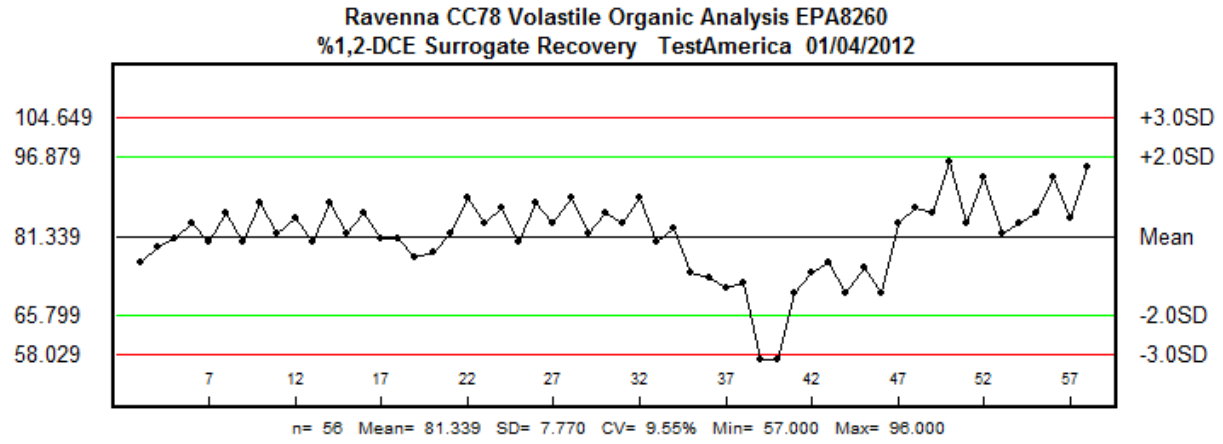

Figure 3

Toluene Laboratory QC Limits = 85-115%

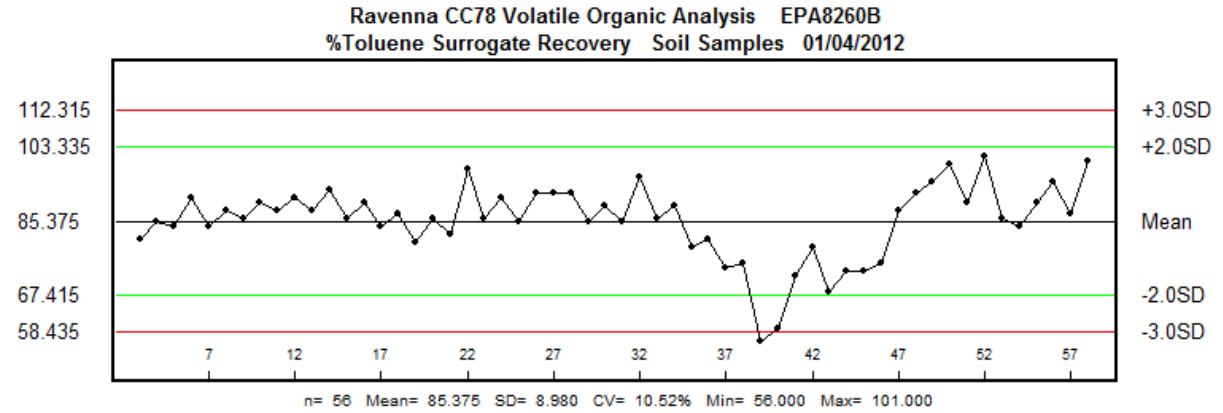

Figure 4

Semivolatile Organic Analysis

Terphenyl-d14 Laboratory QC Limits = 30-125%

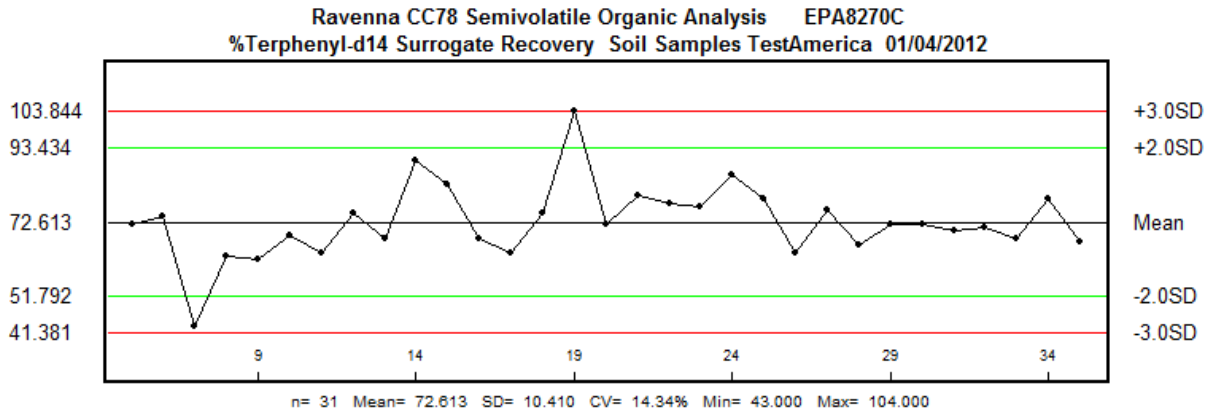

Figure 5

2-Fluorophenol Laboratory QC Limits = 35-105%

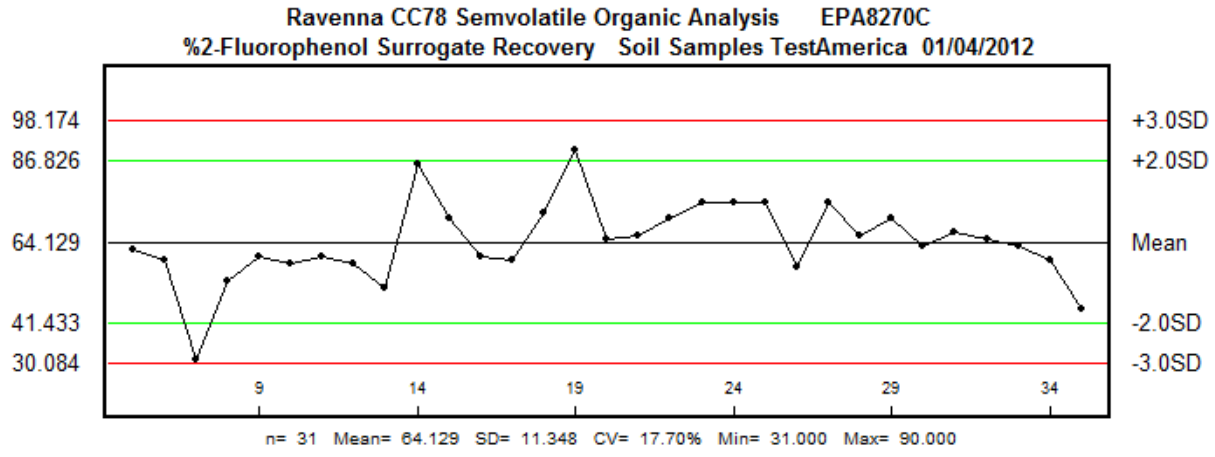

Figure 6

Semivolatile Organic Analysis

Nitrobenzene-d5 Laboratory QC Limits = 35-100%

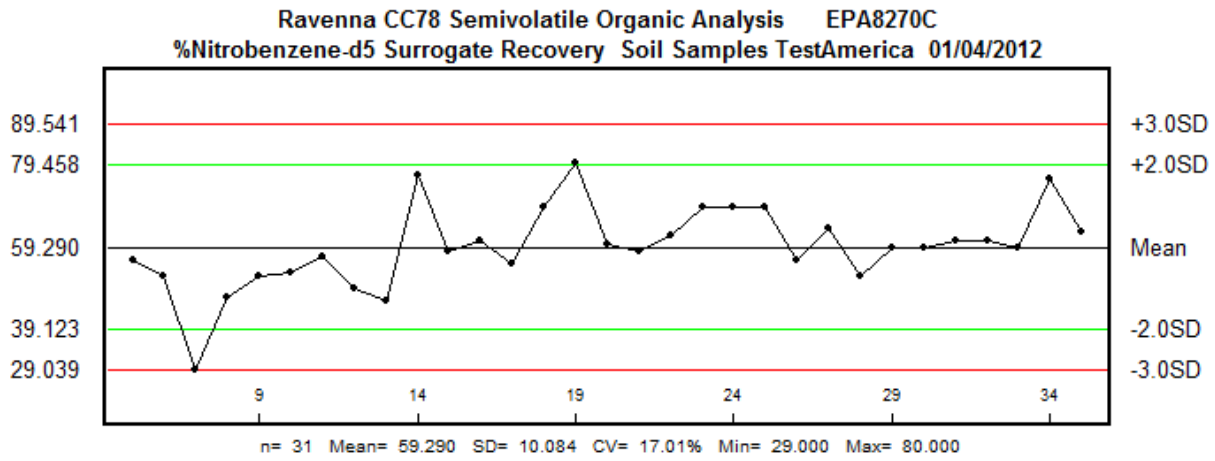

Figure 7

Phenol-d5 Laboratory QC Limits = 40-100%

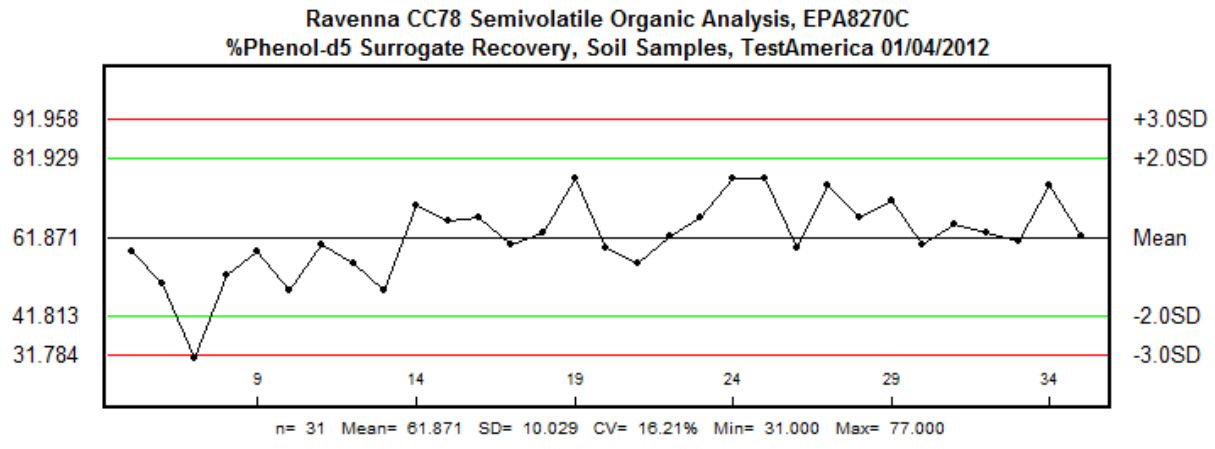

Figure 8

Semivolatile Organic Analysis

2,4,6-Tribromophenol Laboratory QC limits = 35-125%

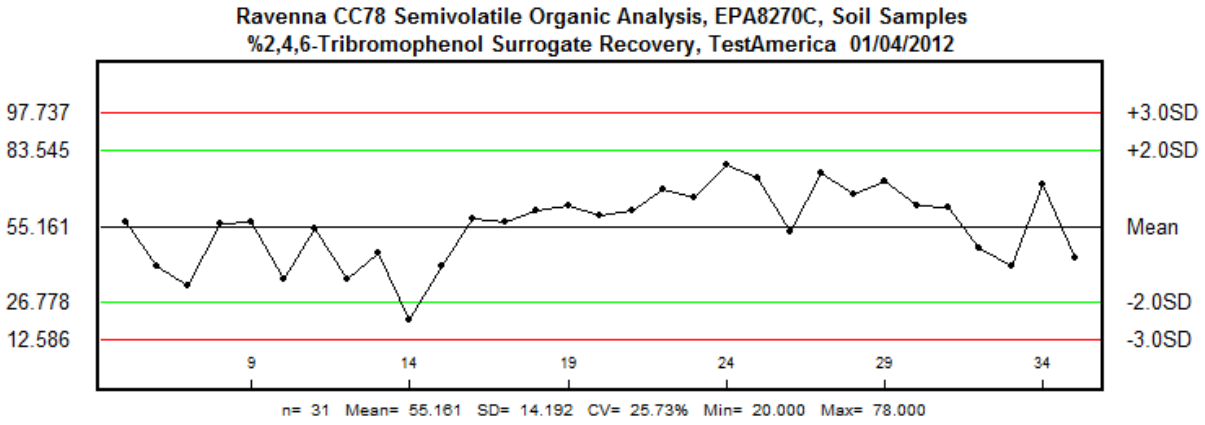

Figure 9

2-Fluorobiphenyl Laboratory QC Limits = 45-105%

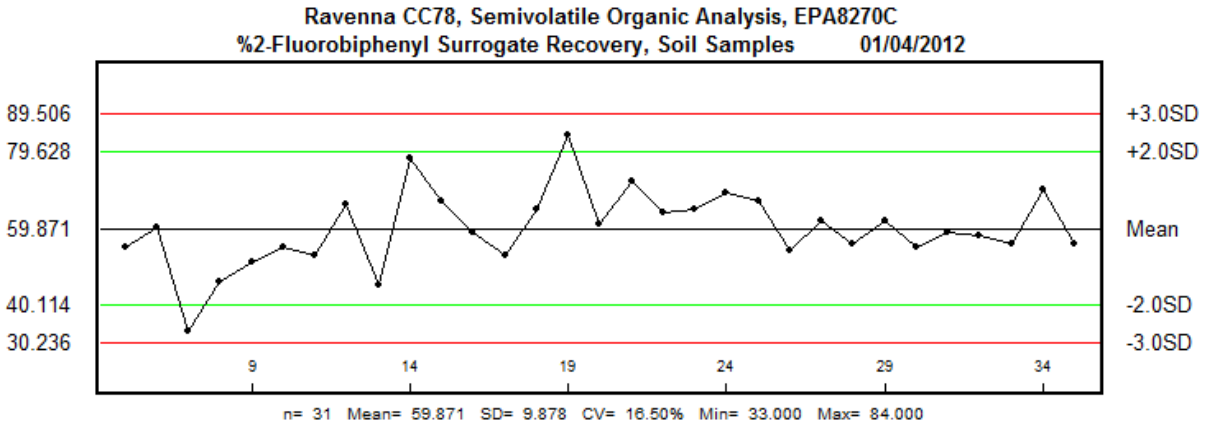

Figure 10

Polychlorinated Biphenyl

(PCB)

Decachlorobiphenyl Laboratory QC limits = 60-125%

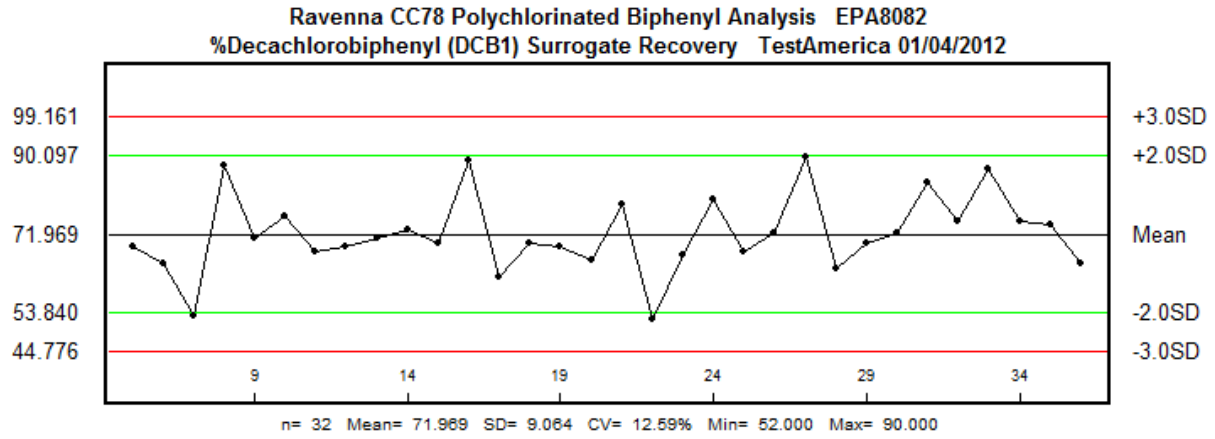

Figure 11

Tetrachloro-m-xylene Laboratory QC Limits = 40-140%

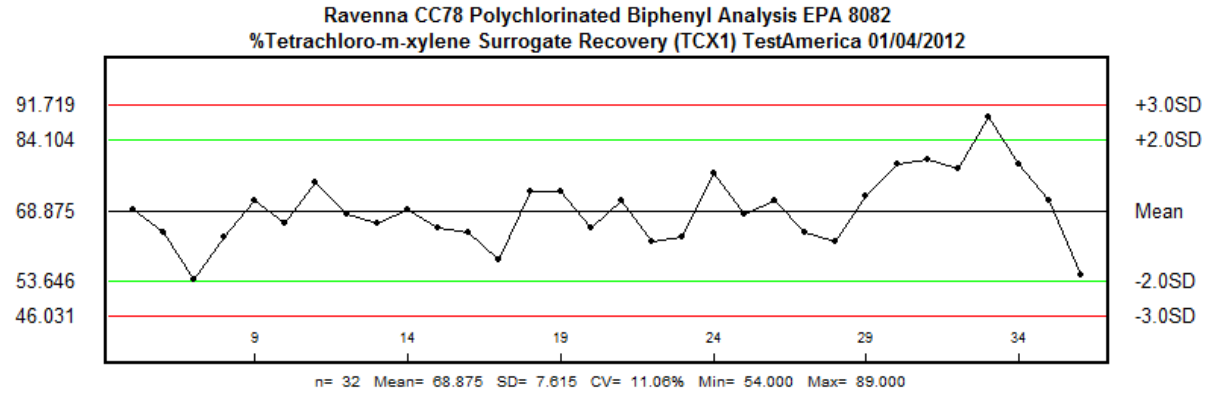

Figure 12

Polychlorinated Biphenyl

(PCB)

Decachlorobiphenyl Laboratory QC limits = 60-125%

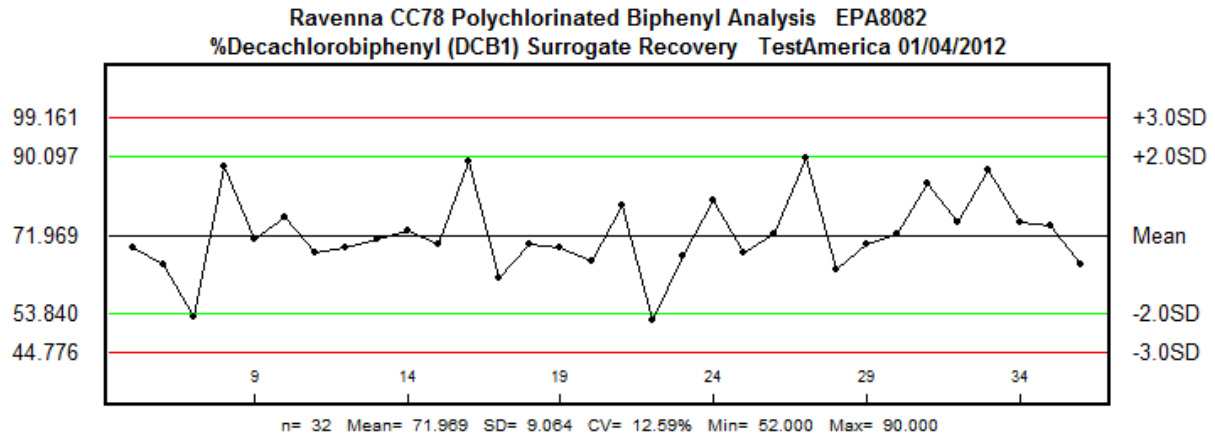

Figure 13

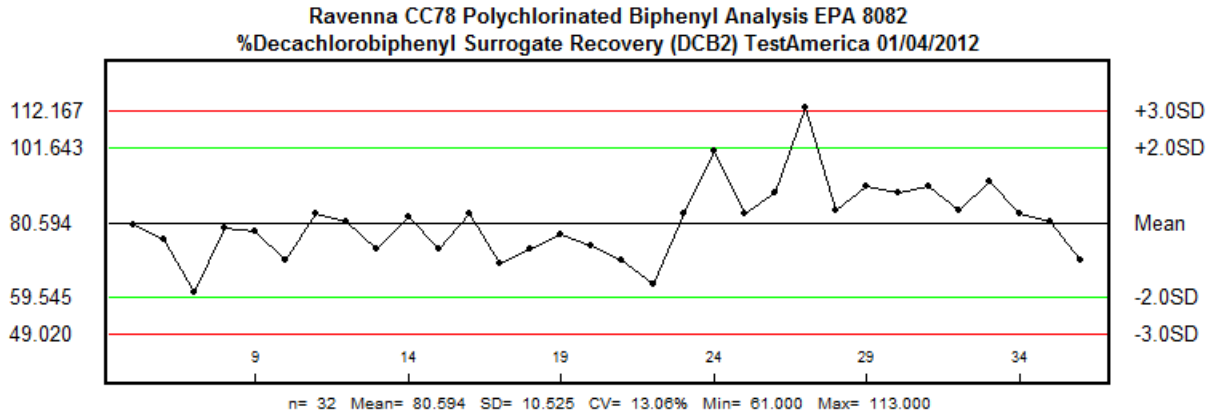

Figure 14

Polychlorinated Biphenyl

(PCB)

Tetrachloro-m-xylene Laboratory QC Limits = 40-140%

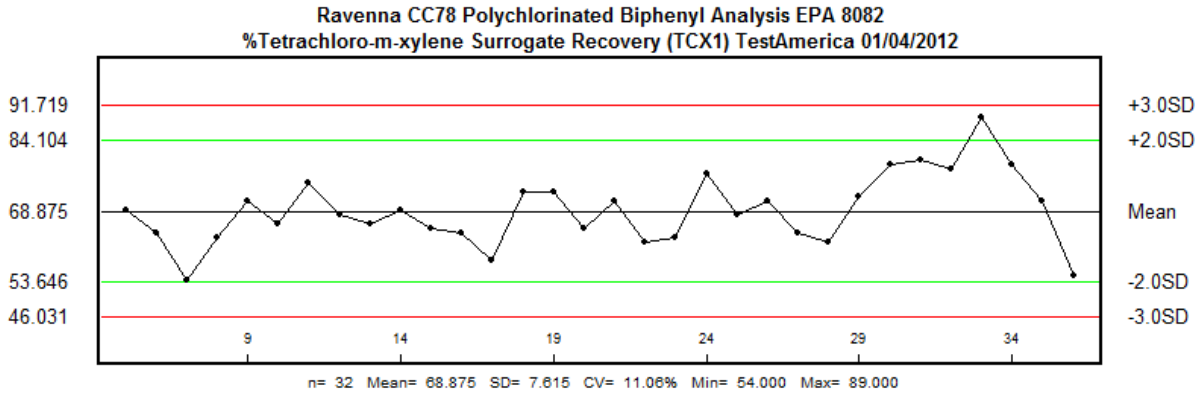

Figure 15

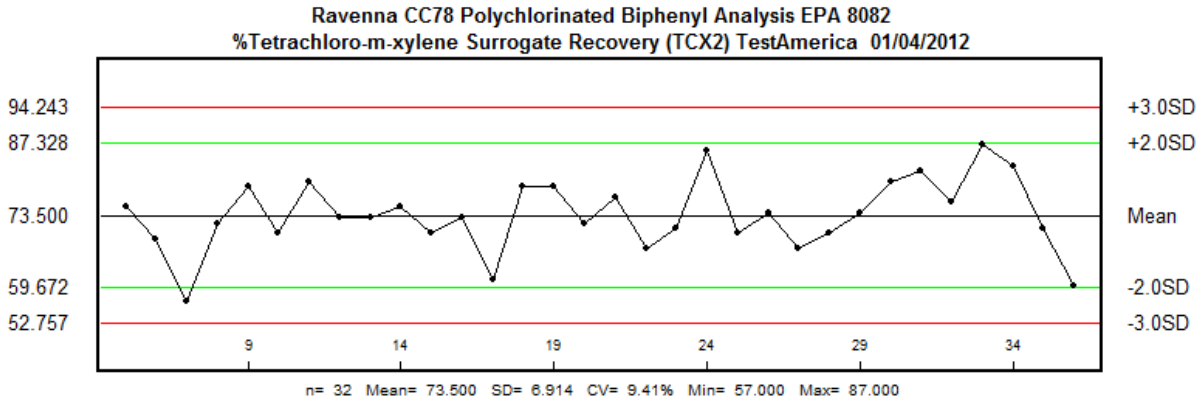

Figure 16

Polychlorinated Biphenyl

(PCB)

Decachlorobiphenyl Laboratory QC limits = 60-125%

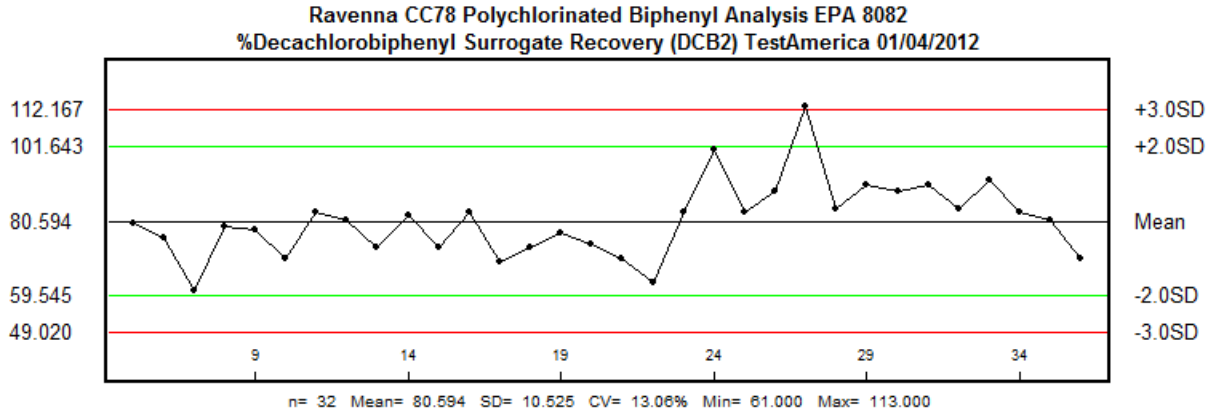

Fig 17

Tetrachloro-m-xylene Laboratory QC Limits = 40-140%

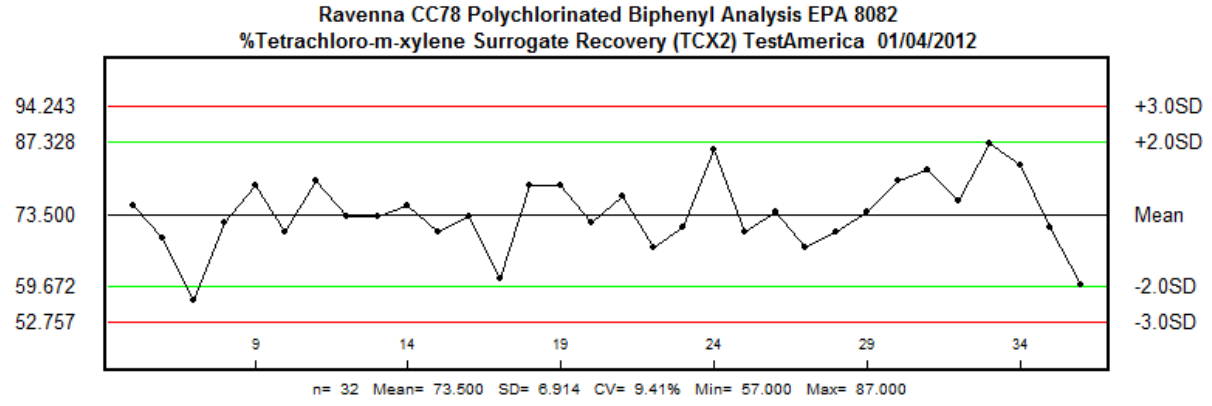

Figure 18

Organochlorine Pesticide Analysis

Decachlorobiphenyl Laboratory QC limits = 60-125%

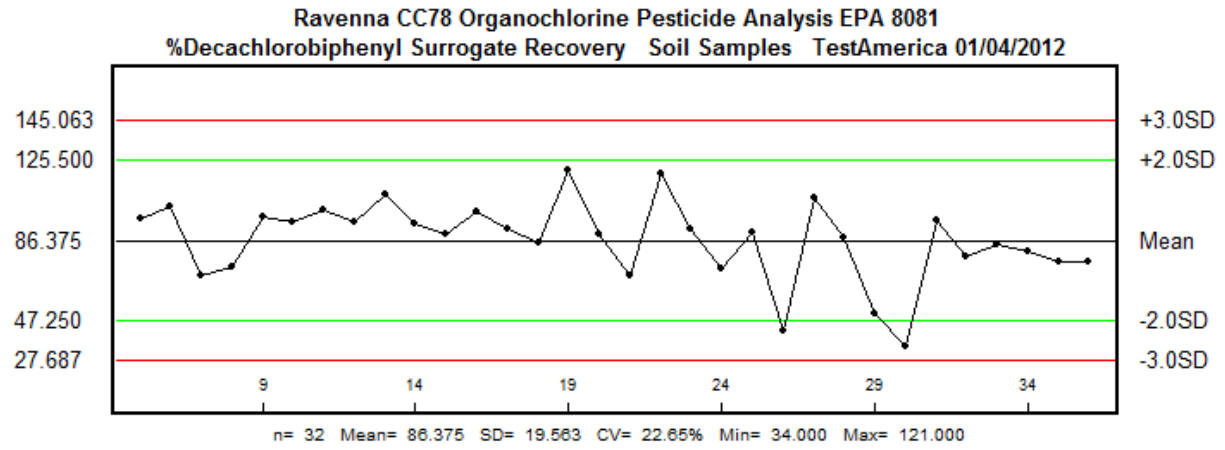

Figure 19

Tetrachloro-m-xylene Laboratory QC Limits = 40-140%

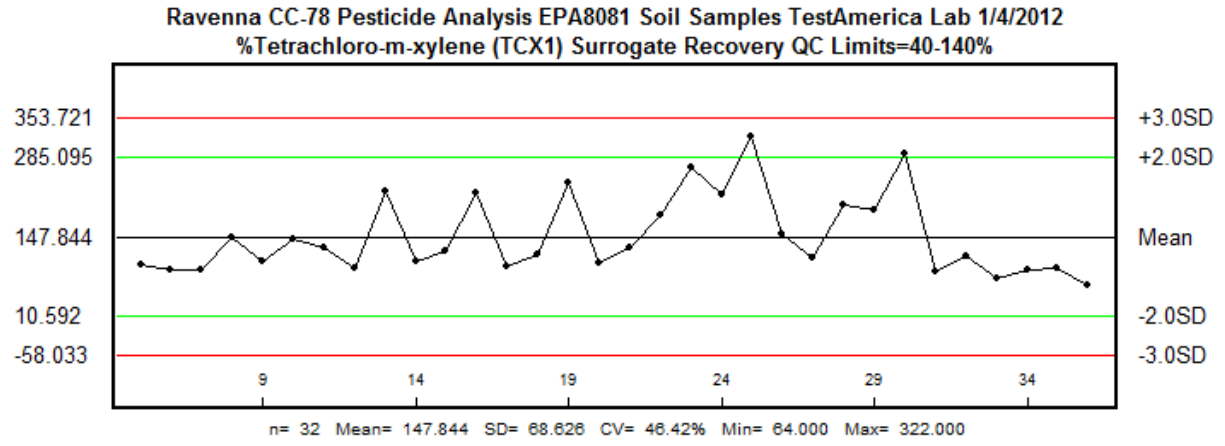

Figure 20

Organochlorine Pesticide Analysis

Decachlorobiphenyl Laboratory QC limits = 60-125%

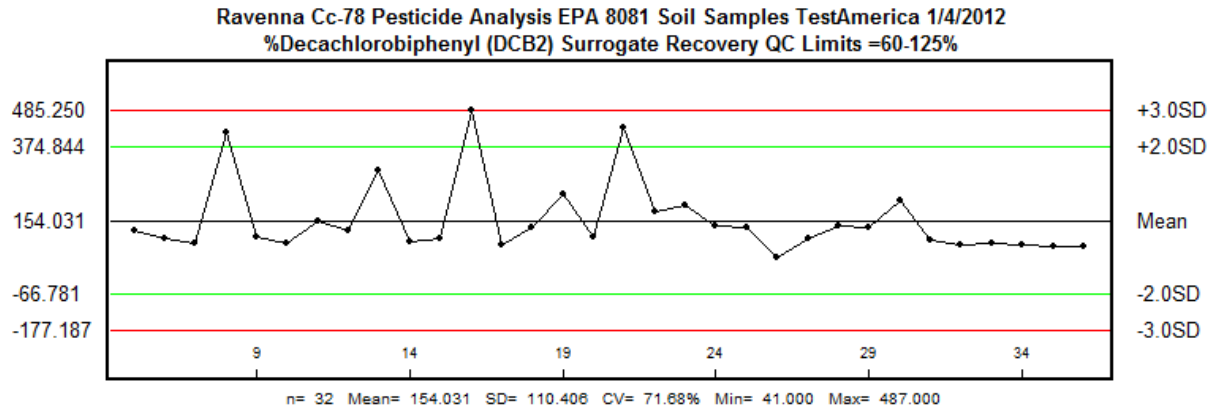

Figure 21

Tetrachloro-m-xylene Laboratory QC Limits = 40-140%

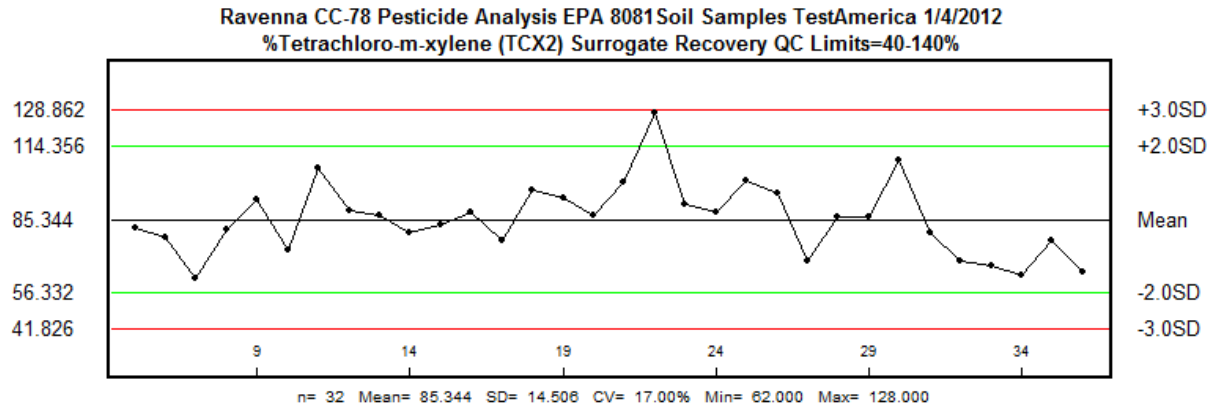

Figure 22

Explosive Residues

3,4-Dinitrotoluene Laboratory QC Limits = 78-108%

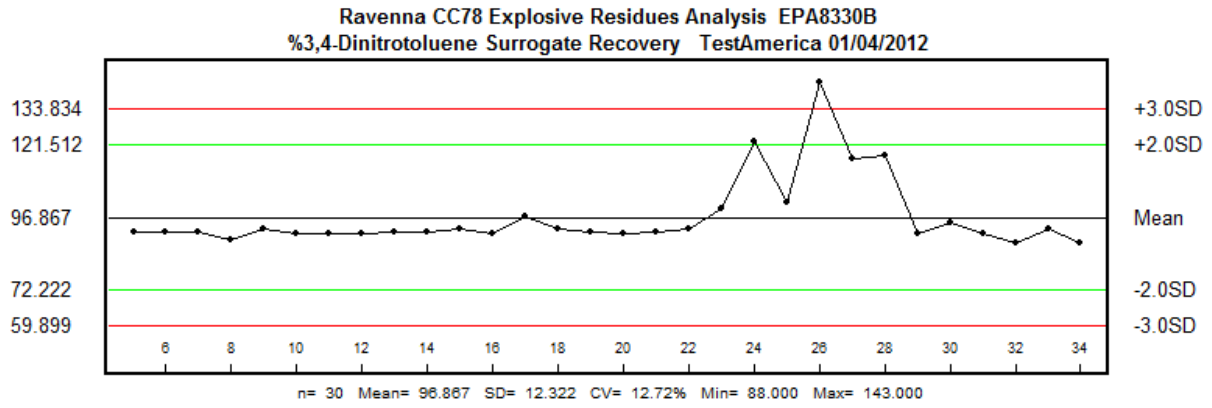

Figure 23

SECTION II

Surrogate Recovery Data

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID	ID	%Recovery
Lab Sample	Clent Sample	DBFM
		Dibromofluoromethan
240-5866-2	C78SB-021V-0101-SO	68
240-5866-2	C78SB-021V-0101-SO	75
240-5866-4	C78SB-021V-0102-SO	74
240-5866-4	C78SB-021V-0102-SO	82
240-5866-6	C78SB-021V-0001-SO	74
240-5866-6	C78SB-021V-0001-SO	84
240-5866-8	C78SB-021V-0002-SO	74
240-5866-8	C78SB-021V-0002-SO	86
240-5866-10	C78SB-021V-0003-SO	76
240-5866-10	C78SB-021V-0003-SO	83
240-5866-11	C78SB-021V-0004-SO	74
240-5866-11	C78SB-021V-0004-SO	86
240-5866-14	C78SB-021V-0005-SO	78
240-5866-14	C78SB-021V-0005-SO	81
240-5866-16	C78SB-021V-0006-SO	76
240-5866-16	C78SB-021V-0006-SO	79
240-5866-18	C78SB-022V-0101-SO	69
240-5866-18	C78SB-022V-0101-SO	75
240-5866-20	C78SB-022V-0102-SO	75
240-5866-20	C78SB-022V-0102-SO	85
240-5866-22	C78SB-022V-0001-SO	75
240-5866-22	C78SB-022V-0001-SO	83
240-5866-24	C78SB-022V-0002-SO	71
240-5866-24	C78SB-022V-0002-SO	83
240-5866-26	C78SB-022V-0003-SO	79
240-5866-26	C78SB-022V-0003-SO	83
240-5866-28	C78SB-022V-0004-SO	75
240-5866-28	C78SB-022V-0004-SO	82
240-5866-30	C78SB-022V-0005-SO	74
240-5866-30	C78SB-022V-0005-SO	84
240-5866-32	C78SB-022V-0006-SO	73
240-5866-32	C78SB-022V-0006-SO	77
240-5866-34	C78SS-014-0001-SO	67
240-5866-34	C78SS-014-0001-SO	69
240-5866-36	C78SS-016-0001-SO	65
240-5866-36	C78SS-016-0001-SO	69

Fig. 1, Data Sheet DVRR02192012 II-1b

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID Lab Sample	ID Clent Sample	%Recovery DBFM Dibromofluoromethan
240-5866-38	C78SS-011-0001-SO	51
240-5866-38	C78SS-011-0001-SO	56
240-5866-42	C78SS-002-0001-SO	62
240-5866-42	C78SS-002-0001-SO	70
240-5866-44	C78SS-004-0001-SO	67
240-5866-44	C78SS-004-0001-SO	65
240-5866-46	C78SS-007-0002-SO	68
240-5866-46	C78SS-007-0002-SO	64
LCS 240-24100/2-A	Lab Control Sample	78
LCS 240-24100/2-A	Lab Control Sample	88
LCS 240-24114/2-A	Lab Control Sample	85
LCS 240-24114/2-A	Lab Control Sample	95
LCS 240-24253/2-A	Lab Control Sample	80
LCS 240-24253/2-A	Lab Control Sample	95
MB 240-24100/1-A	Method Blank	75
MB 240-24100/1-A	Method Blank	76
MB 240-24114/1-A	Method Blank	79
MB 240-24114/1-A	Method Blank	92
MB 240-24253/1-A	Method Blank	78
MB 240-24253/1-A	Method Blank	91

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID Lab Sample	ID Clent Sample	%Recovery BFB 4-Bromofluorobenzene
240-5866-2	C78SB-021V-0101-SO	75
240-5866-2	C78SB-021V-0101-SO	80
240-5866-4	C78SB-021V-0102-SO	79
240-5866-4	C78SB-021V-0102-SO	85
240-5866-6	C78SB-021V-0001-SO	81
240-5866-6	C78SB-021V-0001-SO	86
240-5866-8	C78SB-021V-0002-SO	80
240-5866-8	C78SB-021V-0002-SO	89
240-5866-10	C78SB-021V-0003-SO	86
240-5866-10	C78SB-021V-0003-SO	89
240-5866-11	C78SB-021V-0004-SO	82
240-5866-11	C78SB-021V-0004-SO	90
240-5866-14	C78SB-021V-0005-SO	81
240-5866-14	C78SB-021V-0005-SO	87
240-5866-16	C78SB-021V-0006-SO	78
240-5866-16	C78SB-021V-0006-SO	85
240-5866-18	C78SB-022V-0101-SO	72
240-5866-18	C78SB-022V-0101-SO	79
240-5866-20	C78SB-022V-0102-SO	76
240-5866-20	C78SB-022V-0102-SO	89
240-5866-22	C78SB-022V-0001-SO	81
240-5866-22	C78SB-022V-0001-SO	88
240-5866-24	C78SB-022V-0002-SO	81
240-5866-24	C78SB-022V-0002-SO	90
240-5866-26	C78SB-022V-0003-SO	83
240-5866-26	C78SB-022V-0003-SO	89
240-5866-28	C78SB-022V-0004-SO	78
240-5866-28	C78SB-022V-0004-SO	85
240-5866-30	C78SB-022V-0005-SO	81
240-5866-30	C78SB-022V-0005-SO	91
240-5866-32	C78SB-022V-0006-SO	78
240-5866-32	C78SB-022V-0006-SO	84
240-5866-34	C78SS-014-0001-SO	73
240-5866-34	C78SS-014-0001-SO	74
240-5866-36	C78SS-016-0001-SO	66

Fig, 2, Data Sheet DVRR02192012 II-2b

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID Lab Sample	ID Clent Sample	%Recovery BFB 4-Bromofluorobenzene
240-5866-36	C78SS-016-0001-SO	71
240-5866-38	C78SS-011-0001-SO	46
240-5866-38	C78SS-011-0001-SO	46
240-5866-42	C78SS-002-0001-SO	67
240-5866-42	C78SS-002-0001-SO	72
240-5866-44	C78SS-004-0001-SO	59
240-5866-44	C78SS-004-0001-SO	67
240-5866-46	C78SS-007-0002-SO	66
240-5866-46	C78SS-007-0002-SO	69
LCS 240-24100/2-A	Lab Control Sample	86
LCS 240-24100/2-A	Lab Control Sample	89
LCS 240-24114/2-A	Lab Control Sample	91
LCS 240-24114/2-A	Lab Control Sample	98
LCS 240-24253/2-A	Lab Control Sample	87
LCS 240-24253/2-A	Lab Control Sample	99
MB 240-24100/1-A	Method Blank	82
MB 240-24100/1-A	Method Blank	82
MB 240-24114/1-A	Method Blank	88
MB 240-24114/1-A	Method Blank	91
MB 240-24253/1-A	Method Blank	81
MB 240-24253/1-A	Method Blank	94

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID	ID	%Recovery
Lab Sample	Clent Sample	12DCE
		1,2-Dichloroethane-d4
240-5866-2	C78SB-021V-0101-SO	76
240-5866-2	C78SB-021V-0101-SO	79
240-5866-4	C78SB-021V-0102-SO	81
240-5866-4	C78SB-021V-0102-SO	84
240-5866-6	C78SB-021V-0001-SO	80
240-5866-6	C78SB-021V-0001-SO	86
240-5866-8	C78SB-021V-0002-SO	80
240-5866-8	C78SB-021V-0002-SO	88
240-5866-10	C78SB-021V-0003-SO	82
240-5866-10	C78SB-021V-0003-SO	85
240-5866-11	C78SB-021V-0004-SO	80
240-5866-11	C78SB-021V-0004-SO	88
240-5866-14	C78SB-021V-0005-SO	82
240-5866-14	C78SB-021V-0005-SO	86
240-5866-16	C78SB-021V-0006-SO	81
240-5866-16	C78SB-021V-0006-SO	81
240-5866-18	C78SB-022V-0101-SO	77
240-5866-18	C78SB-022V-0101-SO	78
240-5866-20	C78SB-022V-0102-SO	82
240-5866-20	C78SB-022V-0102-SO	89
240-5866-22	C78SB-022V-0001-SO	84
240-5866-22	C78SB-022V-0001-SO	87
240-5866-24	C78SB-022V-0002-SO	80
240-5866-24	C78SB-022V-0002-SO	88
240-5866-26	C78SB-022V-0003-SO	84
240-5866-26	C78SB-022V-0003-SO	89
240-5866-28	C78SB-022V-0004-SO	82
240-5866-28	C78SB-022V-0004-SO	86
240-5866-30	C78SB-022V-0005-SO	84
240-5866-30	C78SB-022V-0005-SO	89
240-5866-32	C78SB-022V-0006-SO	80
240-5866-32	C78SB-022V-0006-SO	83
240-5866-34	C78SS-014-0001-SO	74
240-5866-34	C78SS-014-0001-SO	73
240-5866-36	C78SS-016-0001-SO	71

Fig. 3, Data Sheet DVRR02192012 II-3b

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

TestAmerica ID	ID	%Recovery
Lab Sample	Clent Sample	12DCE
		1,2-Dichloroethane-d4
240-5866-36	C78SS-016-0001-SO	72
240-5866-38	C78SS-011-0001-SO	57
240-5866-38	C78SS-011-0001-SO	57
240-5866-42	C78SS-002-0001-SO	70
240-5866-42	C78SS-002-0001-SO	74
240-5866-44	C78SS-004-0001-SO	76
240-5866-44	C78SS-004-0001-SO	70
240-5866-46	C78SS-007-0002-SO	75
240-5866-46	C78SS-007-0002-SO	70
LCS 240-24100/2-A	Lab Control Sample	84
LCS 240-24100/2-A	Lab Control Sample	87
LCS 240-24114/2-A	Lab Control Sample	86
LCS 240-24114/2-A	Lab Control Sample	96
LCS 240-24253/2-A	Lab Control Sample	84
LCS 240-24253/2-A	Lab Control Sample	93
MB 240-24100/1-A	Method Blank	82
MB 240-24100/1-A	Method Blank	84
MB 240-24114/1-A	Method Blank	86
MB 240-24114/1-A	Method Blank	93
MB 240-24253/1-A	Method Blank	85
MB 240-24253/1-A	Method Blank	95

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	Toluene-d8
TestAmerica		
240-5866-2	C78SB-021V-0101-SO	81
240-5866-2	C78SB-021V-0101-SO	85
240-5866-4	C78SB-021V-0102-SO	84
240-5866-4	C78SB-021V-0102-SO	91
240-5866-6	C78SB-021V-0001-SO	84
240-5866-6	C78SB-021V-0001-SO	88
240-5866-8	C78SB-021V-0002-SO	86
240-5866-8	C78SB-021V-0002-SO	90
240-5866-10	C78SB-021V-0003-SO	88
240-5866-10	C78SB-021V-0003-SO	91
240-5866-11	C78SB-021V-0004-SO	88
240-5866-11	C78SB-021V-0004-SO	93
240-5866-14	C78SB-021V-0005-SO	86
240-5866-14	C78SB-021V-0005-SO	90
240-5866-16	C78SB-021V-0006-SO	84
240-5866-16	C78SB-021V-0006-SO	87
240-5866-18	C78SB-022V-0101-SO	80
240-5866-18	C78SB-022V-0101-SO	86
240-5866-20	C78SB-022V-0102-SO	82
240-5866-20	C78SB-022V-0102-SO	98
240-5866-22	C78SB-022V-0001-SO	86
240-5866-22	C78SB-022V-0001-SO	91
240-5866-24	C78SB-022V-0002-SO	85
240-5866-24	C78SB-022V-0002-SO	92
240-5866-26	C78SB-022V-0003-SO	92
240-5866-26	C78SB-022V-0003-SO	92
240-5866-28	C78SB-022V-0004-SO	85
240-5866-28	C78SB-022V-0004-SO	89
240-5866-30	C78SB-022V-0005-SO	85
240-5866-30	C78SB-022V-0005-SO	96
240-5866-32	C78SB-022V-0006-SO	86
240-5866-32	C78SB-022V-0006-SO	89
240-5866-34	C78SS-014-0001-SO	79
240-5866-34	C78SS-014-0001-SO	81
240-5866-36	C78SS-016-0001-SO	74
240-5866-36	C78SS-016-0001-SO	75

Ravenna CC78 VOA EPA 8260 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	Toluene-d8
TestAmerica		
240-5866-38	C78SS-011-0001-SO	56
240-5866-38	C78SS-011-0001-SO	59
240-5866-42	C78SS-002-0001-SO	72
240-5866-42	C78SS-002-0001-SO	79
240-5866-44	C78SS-004-0001-SO	68
240-5866-44	C78SS-004-0001-SO	73
240-5866-46	C78SS-007-0002-SO	73
240-5866-46	C78SS-007-0002-SO	75
LCS 240-24100/2-A	Lab Control Sample	88
LCS 240-24100/2-A	Lab Control Sample	92
LCS 240-24114/2-A	Lab Control Sample	95
LCS 240-24114/2-A	Lab Control Sample	99
LCS 240-24253/2-A	Lab Control Sample	90
LCS 240-24253/2-A	Lab Control Sample	101
MB 240-24100/1-A	Method Blank	86
MB 240-24100/1-A	Method Blank	84
MB 240-24114/1-A	Method Blank	90
MB 240-24114/1-A	Method Blank	95
MB 240-24253/1-A	Method Blank	87
MB 240-24253/1-A	Method Blank	100

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	Terphenyl-d14
TestAmerica		
240-5866-1	C78SB-021M-0101-SO	78
240-5886-3	C78SB-021M-0102-SO	72
240-5886-5	C78SB-021M-0001-SO	74
240-5886-7	C78SB-021M-0002-SO	43
240-5886-9	C78SB-021M-0003-SO	63
240-5886-12	C78SB-021M-0004-SO	62
240-5886-13	C78SB-021M-0005-SO	69
240-5886-15	C78SB-021M-0006-SO	64
240-5886-17	C78SB-022M-0101-SO	75
240-5886-19	C78SB-022M-0102-SO	68
240-5886-21	C78SB-022M-0001-SO	90
240-5886-23	C78SB-022M-0002-SO	83
240-5886-25	C78SB-022M-0003-SO	68
240-5886-27	C78SB-022M-0004-SO	64
240-5886-29	C78SB-022M-0005-SO	75
240-5886-31	C78SB-022M-0006-SO	104
240-5886-33	C78SS-013M-0001-SO	72
240-5886-35	C78SS-015M-0001-SO	80
240-5886-37	C78SS-010M-0001-SO	78
240-5886-41	C78SS-001M-0001-SO	77
240-5886-41-MS	C78SS-001M-0001-SO	86
240-5886-41-MSD	C78SS-001M-0001-SO	79
240-5886-43	C78SS-003M-0001-SO	64
240-5886-45	C78SS-007-0001-SO	76
240-5886-45-MS	C78SS-007-0001-SO	66
240-5886-45-MSD	C78SS-007-0001-SO	72
LCS 240-24190/24-A	Lab Control Sample	72
LCS 240-24492/15-A	Lab Control Sample	70
MB 240-24190/23-A	Method Blank	71
MB 240-24190/14-A	Method Blank	68
LCS 240-24288/5-A	Lab Control Sample	79
MB 240-24288/4-A	Method Blank	67

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	2FB
TestAmerica		2-Fluorophenol
240-5866-1	C78SB-021M-0101-SO	63
240-5886-3	C78SB-021M-0102-SO	62
240-5886-5	C78SB-021M-0001-SO	59
240-5886-7	C78SB-021M-0002-SO	31
240-5886-9	C78SB-021M-0003-SO	53
240-5886-12	C78SB-021M-0004-SO	60
240-5886-13	C78SB-021M-0005-SO	58
240-5886-15	C78SB-021M-0006-SO	60
240-5886-17	C78SB-022M-0101-SO	58
240-5886-19	C78SB-022M-0102-SO	51
240-5886-21	C78SB-022M-0001-SO	86
240-5886-23	C78SB-022M-0002-SO	71
240-5886-25	C78SB-022M-0003-SO	60
240-5886-27	C78SB-022M-0004-SO	59
240-5886-29	C78SB-022M-0005-SO	72
240-5886-31	C78SB-022M-0006-SO	90
240-5886-33	C78SS-013M-0001-SO	65
240-5886-35	C78SS-015M-0001-SO	66
240-5886-37	C78SS-010M-0001-SO	71
240-5886-41	C78SS-001M-0001-SO	75
240-5886-41-MS	C78SS-001M-0001-SO	75
240-5886-41-MSD	C78SS-001M-0001-SO	75
240-5886-43	C78SS-003M-0001-SO	57
240-5886-45	C78SS-007-0001-SO	75
240-5886-45-MS	C78SS-007-0001-SO	66
240-5886-45-MSD	C78SS-007-0001-SO	71
LCS 240-24190/24-A	Lab Control Sample	63
LCS 240-24492/15-A	Lab Control Sample	67
MB 240-24190/23-A	Method Blank	65
MB 240-24190/14-A	Method Blank	63
LCS 240-24288/5-A	Lab Control Sample	59
MB 240-24288/4-A	Method Blank	45

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	Nitrobenzene-d5
TestAmerica		
240-5866-1	C78SB-021M-0101-SO	53
240-5886-3	C78SB-021M-0102-SO	56
240-5886-5	C78SB-021M-0001-SO	52
240-5886-7	C78SB-021M-0002-SO	29
240-5886-9	C78SB-021M-0003-SO	47
240-5886-12	C78SB-021M-0004-SO	52
240-5886-13	C78SB-021M-0005-SO	53
240-5886-15	C78SB-021M-0006-SO	57
240-5886-17	C78SB-022M-0101-SO	49
240-5886-19	C78SB-022M-0102-SO	46
240-5886-21	C78SB-022M-0001-SO	77
240-5886-23	C78SB-022M-0002-SO	58
240-5886-25	C78SB-022M-0003-SO	61
240-5886-27	C78SB-022M-0004-SO	55
240-5886-29	C78SB-022M-0005-SO	69
240-5886-31	C78SB-022M-0006-SO	80
240-5886-33	C78SS-013M-0001-SO	60
240-5886-35	C78SS-015M-0001-SO	58
240-5886-37	C78SS-010M-0001-SO	62
240-5886-41	C78SS-001M-0001-SO	69
240-5886-41-MS	C78SS-001M-0001-SO	69
240-5886-41-MSD	C78SS-001M-0001-SO	69
240-5886-43	C78SS-003M-0001-SO	56
240-5886-45	C78SS-007-0001-SO	64
240-5886-45-MS	C78SS-007-0001-SO	52
240-5886-45-MSD	C78SS-007-0001-SO	59
LCS 240-24190/24-A	Lab Control Sample	59
LCS 240-24492/15-A	Lab Control Sample	61
MB 240-24190/23-A	Method Blank	61
MB 240-24190/14-A	Method Blank	59
LCS 240-24288/5-A	Lab Control Sample	76
MB 240-24288/4-A	Method Blank	63

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	PHL
TestAmerica		Phenol-d5
240-5866-1	C78SB-021M-0101-SO	54
240-5886-3	C78SB-021M-0102-SO	58
240-5886-5	C78SB-021M-0001-SO	50
240-5886-7	C78SB-021M-0002-SO	31
240-5886-9	C78SB-021M-0003-SO	52
240-5886-12	C78SB-021M-0004-SO	58
240-5886-13	C78SB-021M-0005-SO	48
240-5886-15	C78SB-021M-0006-SO	60
240-5886-17	C78SB-022M-0101-SO	55
240-5886-19	C78SB-022M-0102-SO	48
240-5886-21	C78SB-022M-0001-SO	70
240-5886-23	C78SB-022M-0002-SO	66
240-5886-25	C78SB-022M-0003-SO	67
240-5886-27	C78SB-022M-0004-SO	60
240-5886-29	C78SB-022M-0005-SO	63
240-5886-31	C78SB-022M-0006-SO	77
240-5886-33	C78SS-013M-0001-SO	59
240-5886-35	C78SS-015M-0001-SO	55
240-5886-37	C78SS-010M-0001-SO	62
240-5886-41	C78SS-001M-0001-SO	67
240-5886-41-MS	C78SS-001M-0001-SO	77
240-5886-41-MSD	C78SS-001M-0001-SO	77
240-5886-43	C78SS-003M-0001-SO	59
240-5886-45	C78SS-007-0001-SO	75
240-5886-45-MS	C78SS-007-0001-SO	67
240-5886-45-MSD	C78SS-007-0001-SO	71
LCS 240-24190/24-A	Lab Control Sample	60
LCS 240-24492/15-A	Lab Control Sample	65
MB 240-24190/23-A	Method Blank	63
MB 240-24190/14-A	Method Blank	61
LCS 240-24288/5-A	Lab Control Sample	75
MB 240-24288/4-A	Method Blank	62

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	TBP
TestAmerica		2,4,6-Tribromophenol
240-5866-1	C78SB-021M-0101-SO	50
240-5886-3	C78SB-021M-0102-SO	57
240-5886-5	C78SB-021M-0001-SO	40
240-5886-7	C78SB-021M-0002-SO	33
240-5886-9	C78SB-021M-0003-SO	56
240-5886-12	C78SB-021M-0004-SO	57
240-5886-13	C78SB-021M-0005-SO	35
240-5886-15	C78SB-021M-0006-SO	54
240-5886-17	C78SB-022M-0101-SO	35
240-5886-19	C78SB-022M-0102-SO	45
240-5886-21	C78SB-022M-0001-SO	20
240-5886-23	C78SB-022M-0002-SO	40
240-5886-25	C78SB-022M-0003-SO	58
240-5886-27	C78SB-022M-0004-SO	57
240-5886-29	C78SB-022M-0005-SO	61
240-5886-31	C78SB-022M-0006-SO	63
240-5886-33	C78SS-013M-0001-SO	59
240-5886-35	C78SS-015M-0001-SO	61
240-5886-37	C78SS-010M-0001-SO	69
240-5886-41	C78SS-001M-0001-SO	66
240-5886-41-MS	C78SS-001M-0001-SO	78
240-5886-41-MSD	C78SS-001M-0001-SO	73
240-5886-43	C78SS-003M-0001-SO	53
240-5886-45	C78SS-007-0001-SO	75
240-5886-45-MS	C78SS-007-0001-SO	67
240-5886-45-MSD	C78SS-007-0001-SO	72
LCS 240-24190/24-A	Lab Control Sample	63
LCS 240-24492/15-A	Lab Control Sample	62
MB 240-24190/23-A	Method Blank	47
MB 240-24190/14-A	Method Blank	40
LCS 240-24288/5-A	Lab Control Sample	71
MB 240-24288/4-A	Method Blank	43

Ravenna CC78 Semivolatile Organic Analysis EPA 8270C Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	FBP
TestAmerica		2-Fluorobiphenyl
240-5866-1	C78SB-021M-0101-SO	61
240-5886-3	C78SB-021M-0102-SO	55
240-5886-5	C78SB-021M-0001-SO	60
240-5886-7	C78SB-021M-0002-SO	33
240-5886-9	C78SB-021M-0003-SO	46
240-5886-12	C78SB-021M-0004-SO	51
240-5886-13	C78SB-021M-0005-SO	55
240-5886-15	C78SB-021M-0006-SO	53
240-5886-17	C78SB-022M-0101-SO	66
240-5886-19	C78SB-022M-0102-SO	45
240-5886-21	C78SB-022M-0001-SO	78
240-5886-23	C78SB-022M-0002-SO	67
240-5886-25	C78SB-022M-0003-SO	59
240-5886-27	C78SB-022M-0004-SO	53
240-5886-29	C78SB-022M-0005-SO	65
240-5886-31	C78SB-022M-0006-SO	84
240-5886-33	C78SS-013M-0001-SO	61
240-5886-35	C78SS-015M-0001-SO	72
240-5886-37	C78SS-010M-0001-SO	64
240-5886-41	C78SS-001M-0001-SO	65
240-5886-41 MS	C78SS-001M-0001-SO	69
240-5886-41 MSED	C78SS-001M-0001-SO	67
240-5886-43	C78SS-003M-0001-SO	54
240-5886-45	C78SS-007-0001-SO	62
240-5886-45 MS	C78SS-007-0001-SO	56
240-5886-45 MSD	C78SS-007-0001-SO	62
LCS 240-24190/24-A	Lab Control Sample	55
LCS 240-24492/15-A	Lab Control Sample	59
MB 240-24190/23-A	Method Blank	58
MB 240-24190/14-A	Method Blank	56
LCS 240-24288/5-A	Lab Control Sample	70
MB 240-24288/4-A	Method Blank	56

Fig. 13

Ravenna CC78 Polychlorinated Biphenyl Analysis EPA 8082 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	DCB1
TestAmerica		Decachlrobiphenyl
240-5866-1	C78SB-021M-0101-SO	69
240-5886-3	C78SB-021M-0102-SO	65
240-5886-5	C78SB-021M-0001-SO	53
240-5886-7	C78SB-021M-0002-SO	88
240-5886-9	C78SB-021M-0003-SO	71
240-5886-12	C78SB-021M-0004-SO	76
240-5886-13	C78SB-021M-0005-SO	68
240-5886-15	C78SB-021M-0006-SO	69
240-5886-17	C78SB-022M-0101-SO	71
240-5886-19	C78SB-022M-0102-SO	73
240-5886-21	C78SB-022M-0001-SO	70
240-5886-23	C78SB-022M-0002-SO	89
240-5886-25	C78SB-022M-0003-SO	62
240-5886-27	C78SB-022M-0004-SO	70
240-5886-29	C78SB-022M-0005-SO	69
240-5886-31	C78SB-022M-0006-SO	66
240-5886-33	C78SS-013M-0001-SO	79
240-5886-35	C78SS-015M-0001-SO	52
240-5886-37	C78SS-010M-0001-SO	67
240-5886-41	C78SS-001M-0001-SO	80
240-5886-41-MS	C78SS-001M-0001-SO	68
240-5886-41-MSD	C78SS-001M-0001-SO	72
240-5886-43	C78SS-003M-0001-SO	90
240-5886-45	C78SS-007-0001-SO	64
240-5886-45-MS	C78SS-007-0001-SO	70
240-5886-45-MSD	C78SS-007-0001-SO	72
LCS 240-23259/19-A	Lab Control Sample	84
LCS 240-23892/24-A	Lab Control Sample	75
LCS 240-24329/21-A	Lab Control Sample	87
MB 240-23259/18-A	Method Blank	75
MB 240-23892/23-A	Method Blank	74
MB 240-24329/20-A	Method Blank	65

Fig. 15

Ravenna CC78 Polychlorinated Biphenyl Analysis EPA 8082 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	TCX1
TestAmerica		Tetrachloro-m-xylene
240-5866-1	C78SB-021M-0101-SO	69
240-5886-3	C78SB-021M-0102-SO	64
240-5886-5	C78SB-021M-0001-SO	54
240-5886-7	C78SB-021M-0002-SO	63
240-5886-9	C78SB-021M-0003-SO	71
240-5886-12	C78SB-021M-0004-SO	66
240-5886-13	C78SB-021M-0005-SO	75
240-5886-15	C78SB-021M-0006-SO	68
240-5886-17	C78SB-022M-0101-SO	66
240-5886-19	C78SB-022M-0102-SO	69
240-5886-21	C78SB-022M-0001-SO	65
240-5886-23	C78SB-022M-0002-SO	64
240-5886-25	C78SB-022M-0003-SO	58
240-5886-27	C78SB-022M-0004-SO	73
240-5886-29	C78SB-022M-0005-SO	73
240-5886-31	C78SB-022M-0006-SO	65
240-5886-33	C78SS-013M-0001-SO	71
240-5886-35	C78SS-015M-0001-SO	62
240-5886-37	C78SS-010M-0001-SO	63
240-5886-41	C78SS-001M-0001-SO	77
240-5886-41-MS	C78SS-001M-0001-SO	68
240-5886-41-MSD	C78SS-001M-0001-SO	71
240-5886-43	C78SS-003M-0001-SO	64
240-5886-45	C78SS-007-0001-SO	62
240-5886-45-MS	C78SS-007-0001-SO	72
240-5886-45-MSD	C78SS-007-0001-SO	79
LCS 240-23259/19-A	Lab Control Sample	80
LCS 240-23892/24-A	Lab Control Sample	78
LCS 240-24329/21-A	Lab Control Sample	89
MB 240-23259/18-A	Method Blank	79
MB 240-23892/23-A	Method Blank	71
MB 240-24329/20-A	Method Blank	55

Fig. 17

Ravenna CC78 Polychlorinated Biphenyl Analysis EPA 8082 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	DCB2
TestAmerica		Decachlrobiphenyl
240-5866-1	C78SB-021M-0101-SO	80
240-5886-3	C78SB-021M-0102-SO	76
240-5886-5	C78SB-021M-0001-SO	61
240-5886-7	C78SB-021M-0002-SO	79
240-5886-9	C78SB-021M-0003-SO	78
240-5886-12	C78SB-021M-0004-SO	70
240-5886-13	C78SB-021M-0005-SO	83
240-5886-15	C78SB-021M-0006-SO	81
240-5886-17	C78SB-022M-0101-SO	73
240-5886-19	C78SB-022M-0102-SO	82
240-5886-21	C78SB-022M-0001-SO	73
240-5886-23	C78SB-022M-0002-SO	83
240-5886-25	C78SB-022M-0003-SO	69
240-5886-27	C78SB-022M-0004-SO	73
240-5886-29	C78SB-022M-0005-SO	77
240-5886-31	C78SB-022M-0006-SO	74
240-5886-33	C78SS-013M-0001-SO	70
240-5886-35	C78SS-015M-0001-SO	63
240-5886-37	C78SS-010M-0001-SO	83
240-5886-41	C78SS-001M-0001-SO	101
240-5886-41-MS	C78SS-001M-0001-SO	83
240-5886-41-MSD	C78SS-001M-0001-SO	89
240-5886-43	C78SS-003M-0001-SO	113
240-5886-45	C78SS-007-0001-SO	84
240-5886-45-MS	C78SS-007-0001-SO	91
240-5886-45-MSD	C78SS-007-0001-SO	89
LCS 240-23259/19-A	Lab Control Sample	91
LCS 240-23892/24-A	Lab Control Sample	84
LCS 240-24329/21-A	Lab Control Sample	92
MB 240-23259/18-A	Method Blank	83
MB 240-23892/23-A	Method Blank	81
MB 240-24329/20-A	Method Blank	70

Fig. 18

Ravenna CC78 Polychlorinated Biphenyl Analysis EPA 8082 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	TCX2
TestAmerica		Tetrachloro-m-xylene
240-5866-1	C78SB-021M-0101-SO	75
240-5886-3	C78SB-021M-0102-SO	69
240-5886-5	C78SB-021M-0001-SO	57
240-5886-7	C78SB-021M-0002-SO	72
240-5886-9	C78SB-021M-0003-SO	79
240-5886-12	C78SB-021M-0004-SO	70
240-5886-13	C78SB-021M-0005-SO	80
240-5886-15	C78SB-021M-0006-SO	73
240-5886-17	C78SB-022M-0101-SO	73
240-5886-19	C78SB-022M-0102-SO	75
240-5886-21	C78SB-022M-0001-SO	70
240-5886-23	C78SB-022M-0002-SO	73
240-5886-25	C78SB-022M-0003-SO	61
240-5886-27	C78SB-022M-0004-SO	79
240-5886-29	C78SB-022M-0005-SO	79
240-5886-31	C78SB-022M-0006-SO	72
240-5886-33	C78SS-013M-0001-SO	77
240-5886-35	C78SS-015M-0001-SO	67
240-5886-37	C78SS-010M-0001-SO	71
240-5886-41	C78SS-001M-0001-SO	86
240-5886-41-MS	C78SS-001M-0001-SO	70
240-5886-41-MSD	C78SS-001M-0001-SO	74
240-5886-43	C78SS-003M-0001-SO	67
240-5886-45	C78SS-007-0001-SO	70
240-5886-45-MS	C78SS-007-0001-SO	74
240-5886-45-MSD	C78SS-007-0001-SO	80
LCS 240-23259/19-A	Lab Control Sample	82
LCS 240-23892/24-A	Lab Control Sample	76
LCS 240-24329/21-A	Lab Control Sample	87
MB 240-23259/18-A	Method Blank	83
MB 240-23892/23-A	Method Blank	71
MB 240-24329/20-A	Method Blank	60

Ravenna CC78 Pesticide Organic Analysis EPA 8081 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	DCB1
TestAmerica		Decachlorobiphenyl
240-5866-1	C78SB-021M-0101-SO	97
240-5886-3	C78SB-021M-0102-SO	103
240-5886-5	C78SB-021M-0001-SO	69
240-5886-7	C78SB-021M-0002-SO	73
240-5886-9	C78SB-021M-0003-SO	98
240-5886-12	C78SB-021M-0004-SO	95
240-5886-13	C78SB-021M-0005-SO	101
240-5886-15	C78SB-021M-0006-SO	95
240-5886-17	C78SB-022M-0101-SO	109
240-5886-19	C78SB-022M-0102-SO	94
240-5886-21	C78SB-022M-0001-SO	89
240-5886-23	C78SB-022M-0002-SO	100
240-5886-25	C78SB-022M-0003-SO	92
240-5886-27	C78SB-022M-0004-SO	85
240-5886-29	C78SB-022M-0005-SO	121
240-5886-31	C78SB-022M-0006-SO	89
240-5886-33	C78SS-013M-0001-SO	69
240-5886-35	C78SS-015M-0001-SO	119
240-5886-37	C78SS-010M-0001-SO	92
240-5886-41	C78SS-001M-0001-SO	72
240-5886-41-MS	C78SS-001M-0001-SO	90
240-5886-41-MSD	C78SS-001M-0001-SO	42
240-5886-43	C78SS-003M-0001-SO	107
240-5886-45	C78SS-007-0001-SO	88
240-5886-45-MS	C78SS-007-0001-SO	50
240-5886-45-MSD	C78SS-007-0001-SO	34
LCS 240-23899/24-A	Lab Control Sample	96
LCS 240-24334/21-A	Lab Control Sample	78
MB 240-23899/23-A	Method Blank	84
MB 240-24334/20-A	Method Blank	81
LCS 240-24289/5-A	Lab Control Sample	76
MB 240-24289/4-A	Method Blank	76

Ravenna CC78 Pesticide Organic Analysis EPA 8081 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	TCX1
TestAmerica		Tetrachloro-m-xylene
240-5866-1	C78SB-021M-0101-SO	99
240-5886-3	C78SB-021M-0102-SO	91
240-5886-5	C78SB-021M-0001-SO	89
240-5886-7	C78SB-021M-0002-SO	146
240-5886-9	C78SB-021M-0003-SO	106
240-5886-12	C78SB-021M-0004-SO	144
240-5886-13	C78SB-021M-0005-SO	129
240-5886-15	C78SB-021M-0006-SO	92
240-5886-17	C78SB-022M-0101-SO	228
240-5886-19	C78SB-022M-0102-SO	106
240-5886-21	C78SB-022M-0001-SO	122
240-5886-23	C78SB-022M-0002-SO	224
240-5886-25	C78SB-022M-0003-SO	97
240-5886-27	C78SB-022M-0004-SO	117
240-5886-29	C78SB-022M-0005-SO	240
240-5886-31	C78SB-022M-0006-SO	103
240-5886-33	C78SS-013M-0001-SO	129
240-5886-35	C78SS-015M-0001-SO	184
240-5886-37	C78SS-010M-0001-SO	267
240-5886-41	C78SS-001M-0001-SO	222
240-5886-41-MS	C78SS-001M-0001-SO	322
240-5886-41-MSD	C78SS-001M-0001-SO	151
240-5886-43	C78SS-003M-0001-SO	110
240-5886-45	C78SS-007-0001-SO	203
240-5886-45-MS	C78SS-007-0001-SO	194
240-5886-45-MSD	C78SS-007-0001-SO	293
LCS 240-23899/24-A	Lab Control Sample	88
LCS 240-24334/21-A	Lab Control Sample	115
MB 240-23899/23-A	Method Blank	74
MB 240-24334/20-A	Method Blank	89
LCS 240-24289/5-A	Lab Control Sample	93
MB 240-24289/4-A	Method Blank	64

Ravenna CC78 Pesticide Organic Analysis EPA 8081 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	DCB2
TestAmerica		Decachlorobiphenyl
240-5866-1	C78SB-021M-0101-SO	124
240-5886-3	C78SB-021M-0102-SO	98
240-5886-5	C78SB-021M-0001-SO	87
240-5886-7	C78SB-021M-0002-SO	419
240-5886-9	C78SB-021M-0003-SO	105
240-5886-12	C78SB-021M-0004-SO	86
240-5886-13	C78SB-021M-0005-SO	154
240-5886-15	C78SB-021M-0006-SO	121
240-5886-17	C78SB-022M-0101-SO	305
240-5886-19	C78SB-022M-0102-SO	88
240-5886-21	C78SB-022M-0001-SO	99
240-5886-23	C78SB-022M-0002-SO	487
240-5886-25	C78SB-022M-0003-SO	82
240-5886-27	C78SB-022M-0004-SO	131
240-5886-29	C78SB-022M-0005-SO	235
240-5886-31	C78SB-022M-0006-SO	103
240-5886-33	C78SS-013M-0001-SO	436
240-5886-35	C78SS-015M-0001-SO	181
240-5886-37	C78SS-010M-0001-SO	201
240-5886-41	C78SS-001M-0001-SO	139
240-5886-41-MS	C78SS-001M-0001-SO	134
240-5886-41-MSD	C78SS-001M-0001-SO	41
240-5886-43	C78SS-003M-0001-SO	100
240-5886-45	C78SS-007-0001-SO	135
240-5886-45-MS	C78SS-007-0001-SO	134
240-5886-45-MSD	C78SS-007-0001-SO	215
LCS 240-23899/24-A	Lab Control Sample	95
LCS 240-24334/21-A	Lab Control Sample	78
MB 240-23899/23-A	Method Blank	84
MB 240-24334/20-A	Method Blank	81
LCS 240-24289/5-A	Lab Control Sample	76
MB 240-24289/4-A	Method Blank	75

Ravenna CC78 Pesticide Organic Analysis EPA 8081 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	TCX2
TestAmerica		Tetrachloro-m-xylene
240-5866-1	C78SB-021M-0101-SO	82
240-5886-3	C78SB-021M-0102-SO	78
240-5886-5	C78SB-021M-0001-SO	62
240-5886-7	C78SB-021M-0002-SO	81
240-5886-9	C78SB-021M-0003-SO	93
240-5886-12	C78SB-021M-0004-SO	73
240-5886-13	C78SB-021M-0005-SO	106
240-5886-15	C78SB-021M-0006-SO	89
240-5886-17	C78SB-022M-0101-SO	87
240-5886-19	C78SB-022M-0102-SO	80
240-5886-21	C78SB-022M-0001-SO	83
240-5886-23	C78SB-022M-0002-SO	88
240-5886-25	C78SB-022M-0003-SO	77
240-5886-27	C78SB-022M-0004-SO	97
240-5886-29	C78SB-022M-0005-SO	94
240-5886-31	C78SB-022M-0006-SO	87
240-5886-33	C78SS-013M-0001-SO	100
240-5886-35	C78SS-015M-0001-SO	128
240-5886-37	C78SS-010M-0001-SO	91
240-5886-41	C78SS-001M-0001-SO	88
240-5886-41-MS	C78SS-001M-0001-SO	101
240-5886-41-MSD	C78SS-001M-0001-SO	96
240-5886-43	C78SS-003M-0001-SO	69
240-5886-45	C78SS-007-0001-SO	86
240-5886-45-MS	C78SS-007-0001-SO	86
240-5886-45-MSD	C78SS-007-0001-SO	109
LCS 240-23899/24-A	Lab Control Sample	80
LCS 240-24334/21-A	Lab Control Sample	69
MB 240-23899/23-A	Method Blank	67
MB 240-24334/20-A	Method Blank	63
LCS 240-24289/5-A	Lab Control Sample	77
MB 240-24289/4-A	Method Blank	64

Ravenna CC78 Explosive Residues Analysis EPA 8330 Surrogate Recoveries

ID	ID	%Recovery
Lab Sample	Clent Sample	DNT
TestAmerica		3,4-Dinitrotoluene
240-5866-1	C78SB-021M-0101-SO	92
240-5886-3	C78SB-021M-0102-SO	92
240-5886-5	C78SB-021M-0001-SO	92
240-5886-7	C78SB-021M-0002-SO	89
240-5886-9	C78SB-021M-0003-SO	93
240-5886-12	C78SB-021M-0004-SO	91
240-5886-13	C78SB-021M-0005-SO	91
240-5886-15	C78SB-021M-0006-SO	91
240-5886-17	C78SB-022M-0101-SO	92
240-5886-19	C78SB-022M-0102-SO	92
240-5886-21	C78SB-022M-0001-SO	93
240-5886-23	C78SB-022M-0002-SO	91
240-5886-25	C78SB-022M-0003-SO	97
240-5886-27	C78SB-022M-0004-SO	93
240-5886-29	C78SB-022M-0005-SO	92
240-5886-31	C78SB-022M-0006-SO	91
240-5886-33	C78SS-013M-0001-SO	92
240-5886-35	C78SS-015M-0001-SO	93
240-5886-37	C78SS-010M-0001-SO	100
240-5886-41	C78SS-001M-0001-SO	123
240-5886-43	C78SS-003M-0001-SO	102
240-5886-45	C78SS-007-0001-SO	143
240-5886-45-MS	C78SS-007-0001-SO	117
240-5886-45-MSD	C78SS-007-0001-SO	118
G1K190408001D	C78SB-021M-0101-SO	91
G1K190408001S	C78SB-021M-0101-SO	95
G1K210000203B	Method Blank	91
G1K210000203C	Lab Control Sample	88
G1K210000204B	Method Blank	93
G1K210000203C	Lab Control Sample	88

SECTION III

QA/QC Comparison Tables

Table 1
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022V-0101-SO QA-SAMPLE NO.: C78SB-023V-0101-SO

Date Analyzed 11/22/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**

Matrix: Soil

Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1000	140		
	Ethylbenzene	15	14	6.90	
	m & p-Xylene		36		
	o-Xylene		34		
	Toluene	38	32	17.1	
	Methylene Chloride	83			
	Xylene (Total)	61	70	13.7	*

*=Total QA-Xylene calcualated by adding its isomrs concentrations (36+34)

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Table 2

Volatile Organic Analysis

QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022V-0102-SO QA-SAMPLE NO.: C78SB-023V-0102-SO

Date Analyzed 11/22/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**

Matrix: Soil

Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1000	120		
	Ethylbenzene	<250	<18		
	m & p-Xylene		<7.8		
	o-Xylene		<18		
	Toluene	<250	<6.8		
	Xylene (Total)	<490			
	Methylene Chloride	94			

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Table 3
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78CC-022V-0001-SO QA-SAMPLE NO.: C78SB-023V-0001-SO

Date Analyzed: 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: Soil

Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1000	160		
	Ethylbenzene	<250	<9.2		
	m & p-Xylene		<21		
	o-Xylene		<9.2		
	Toluene	<250	<8.0		
	Xylene (Total)	<500			
	Methylene Chloride	220			

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Table 4
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022V-0002-SO QA-SAMPLE NO: C78SB-023V-0002-SO

Date Analyzed 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1300	190		
	Benzene	<320	35		
	Ethylbenzene	50	61	**19.8**	
	m & p-Xylene		170		
	o-Xylene		150		
	Toluene	130	150	**14.3**	
	Xylene (Total)	270	320	**16.9**	*
	Methylene Chloride	250			

*=Total Xylene calculated by adding its isomers concentrations(170+150)

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Table 5
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78-SB-022V-0003-SO QA-SAMPLE NO.: C78SB-023V-0003-SO

Date Analyzed 11/23/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**
DF=1

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1400	160		
	Benzene	<340	<5.4		
	Ethylbenzene	<340	<8.7		
	m & p-Xylene		<20		
	o-Xylene		<8.7		
	Toluene	<340	<7.6		
	Xylene (Total)	<690			
	Methylene Chloride	330			

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Table 6
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022V-0004-SO QA-SAMPLE NO.: C78SB-023V-0004-SO

Date Analyzed 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1100	100		
	Benzene	<280	<4.9		
	Ethylbenzene	<280	<7.9		
	m & p-Xylene		<18		
	o-Xylene		<7.9		
	Toluene	<280	<6.9		
	Xylene (Total)	<570			
	Methylene Chloride	260			

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Table 7
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-22V-0005-SO QA-SAMPLE NO.: C78SB-023V-0005-SO

Date Analyzed 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**
DF=1

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1300	140		
	Benzene	<330	<5.7		
	Ethylbenzene	<330	<9.1		
	m & p-Xylene		<20		
	o-Xylene		<9.1		
	Toluene	<330	<8.0		
	Xylene (Total)	<670			
	Methylene Chloride	260			

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Table 8
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022V-0006-SO QA-SAMPLE NO.: C78SB-023V-0006-SO

Date Analyzed 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica-** Lab Nam **CT Laboratories**
DF=1

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<1200	160		
	Benzene	<310	<5.7		
	Ethylbenzene	<310	<9.0		
	m & p-Xylene		<20		
	o-Xylene		<9.0		
	Toluene	<310	<7.9		
	Xylene (Total)	26			
	Methylene Chloride	230			

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Table 9
Volatile Organic Analysis
QA/QC COMPARISON TABLE

Method No: EPA 8260B

Project: Ravenna CC78

Date Sampled: 11/10/2011

QC-SAMPLE NO: C78SS-004-0001-SO QA-SAMPLE NO: C78SS-006V-0001-SO

Date Analyzed 11/21/2011 Date Analyzed: 11/17/11

Lab Name: **TestAmerica** Lab Nam **CT Laboratories**
DF=1

Matrix: Soil
Concentration Units: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	Acetone	<980	84		
	Benzene	<240	<5.3		
	Ethylbenzene	<240	<8.5		
	m & p-Xylene		<19		
	o-Xylene		<8.5		
	Toluene	<240	<7.5		
	Xylen (Total)	<490			
	Methylene Chloride	190			

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Table 10

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78-022M-0101-SO

QA-
SAMPLE NO: C78SB-023M-0101-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratories**

DF=10

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	Q
	2-Methylnaphthalene	110	230		
91-20-3	Naphthalene	75	180	**82.4**	O
208-96-8	Acenaphthylene	48	350	**152**	O
83-32-9	Acenaphthene	<68	120		
	Carbazole	<510	390		
86-73-7	Fluorene	41	430	**165**	O
85-01-8	Phenanthrene	590	4500	**154**	O
120-12-7	Anthracene	150	740	**133**	O
84-74-2	Di-n-butylphthalate	<510	<80		
206-44-0	Fluoranthene	1500	<0.37		
129-00-0	Pyrene	1100	4500	**121**	O
85-68-7	Butylbenzylphthalate	<510	<74		
56-55-3	Benzo(a)anthracene	630	2500	**119**	O
218-01-9	Chrysene	760	2000	**89.9**	O
117-81-7	bis(2-Ethylhexyl)phthalate	<510			
205-99-2	Benzo(b)fluoranthene	970	2300	**81.3**	O
207-08-9	Benzo(k)fluoranthene	480	840	**54.5**	O
50-32-8	Benzo(a)pyrene	650	1400	**73.2**	O
193-39-5	Indeno(1,2,3-cd)pyrene	420	1000	**81.7**	O
53-70-3	Dibenz(a,h)anthracene	<68	240		
191-24-2	Benzo(g,h,i)perylene	450	710	**44.8**	
	Dibenzofuran	<510	340		

O = OUT

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Table 11

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0102-SO

QA-
SAMPLE NO: C78SB-023M-0102-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011
Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011
Lab Name: **CT Laboratorires**

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	<6.7	36		
91-20-3	Naphthalene	7.4	51	**149**	O
208-96-8	Acenaphthylene	<6.7	87		
83-32-9	Acenaphthene	<6.7	20		
	Carbazole	<6.7	60		
86-73-7	Fluorene	<6.7	120		
85-01-8	Phenanthrene	9.5	850	**196**	O
120-12-7	Anthracene	<6.7	170		
84-74-2	Di-n-butylphthalate	15	80	**137**	O
206-44-0	Fluoranthene	8.9	1100	**197**	O
129-00-0	Pyrene	6.8	750	**196**	O
85-68-7	Butylbenzylphthalate	50	<74		
56-55-3	Benzo(a)anthracene	<6.7	420		
218-01-9	Chrysene	<6.7	360		
117-81-7	bis(2-Ethylhexyl)phthalate	41			
205-99-2	Benzo(b)fluoranthene	<6.7	410		
207-08-9	Benzo(k)fluoranthene	6.6	150	**183**	O
50-32-8	Benzo(a)pyrene	<6.7	240		
193-39-5	Indeno(1,2,3-cd)pyrene	<6.7	180		
53-70-3	Dibenz(a,h)anthracene	<6.7	42		
191-24-2	Benzo(g,h,i)perylene	<6.7	130		
	Dibenzofuran	<50	80		

O = OUT

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Table 12

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0001-SO

QA-
SAMPLE NO: C78SB-023M-0001-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratories**

DF=20

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	<130	160		
91-20-3	Naphthalene	<130	220		
208-96-8	Acenaphthylene	100	760	**153**	O
83-32-9	Acenaphthene	<130	150		
	Carbazole	<1000	510		
86-73-7	Fluorene	<130	860		
85-01-8	Phenanthrene	250	<0.45		
120-12-7	Anthracene	69	1200	**178**	O
84-74-2	Di-n-butylphthalate	<1000	130		
206-44-0	Fluoranthene	620	<0.36		
129-00-0	Pyrene	450	<0.41		
85-68-7	Butylbenzylphthalate	<1000	<73		
56-55-3	Benzo(a)anthracene	280	5000	**179**	O
218-01-9	Chrysene	340	3900	**168**	O
117-81-7	bis(2-Ethylhexyl)phthalate	<1000			
205-99-2	Benzo(b)fluoranthene	350	3900	**167**	O
207-08-9	Benzo(k)fluoranthene	250	1300	**135**	O
50-32-8	Benzo(a)pyrene	270	2300	**158**	O
193-39-5	Indeno(1,2,3-cd)pyrene	170	1500	**159**	O
53-70-3	Dibenz(a,h)anthracene	<130	380		
191-24-2	Benzo(g,h,i)perylene	190	970	**134**	O
	Dibenzofuran	<1000	610		

O = OUT

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Table 13

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0002-SO

QA-
SAMPLE NO: C78SB-023M-0002-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratorie**

DF=10

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	340	940		
91-20-3	Naphthalene	240	610	87.1	O
208-96-8	Acenaphthylene	64	36	56.0	O
83-32-9	Acenaphthene	<68	100		
	Carbazole	<510	280		
86-73-7	Fluorene	69	110	45.8	
85-01-8	Phenanthrene	1100	1600	37.0	
120-12-7	Anthracene	250	400	46.2	
84-74-2	Di-n-butylphthalate	<510	130		
206-44-0	Fluoranthene	3200	3400	6.1	
129-00-0	Pyrene	2400	2500	4.1	
85-68-7	Butylbenzylphthalate	<510	<74		
56-55-3	Benzo(a)anthracene	1300	1100	16.7	
218-01-9	Chrysene	1500	1300	14.3	
117-81-7	bis(2-Ethylhexyl)phthalate	<510			
205-99-2	Benzo(b)fluoranthene	2000	1700	16.2	
207-08-9	Benzo(k)fluoranthene	820	520	44.8	
50-32-8	Benzo(a)pyrene	1300	840	43.0	
193-39-5	Indeno(1,2,3-cd)pyrene	850	450	61.5	O
53-70-3	Dibenz(a,h)anthracene	<68	100		
191-24-2	Benzo(g,h,i)perylene	950	340	94.6	O
	Dibenzofuran	99	200	67.6	O

O = OUT

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Table 14

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0003-SO

QA-
SAMPLE NO: C78SB-023M-0003-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: TestAmerica

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratorie**

DF=1

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	5.6	14		
91-20-3	Naphthalene	6.3	11	54.3	O
208-96-8	Acenaphthylene	<6.8	3.1		
83-32-9	Acenaphthene	<6.8	1.6		
	Carbazole	<51	<28		
86-73-7	Fluorene	5.6	3.6	43.5	
85-01-8	Phenanthrene	28	43	42.3	
120-12-7	Anthracene	3.9	6.1	44.0	
84-74-2	Di-n-butylphthalate	15	120	156	O
206-44-0	Fluoranthene	32	66	69.4	O
129-00-0	Pyrene	22	51	79.5	O
85-68-7	Butylbenzylphthalate	<51	<74		
56-55-3	Benzo(a)anthracene	12	33	93.3	O
218-01-9	Chrysene	14	30	72.7	O
117-81-7	bis(2-Ethylhexyl)phthalate	22			
205-99-2	Benzo(b)fluoranthene	15	40	90.9	O
207-08-9	Benzo(k)fluoranthene	7.5	14	60.5	O
50-32-8	Benzo(a)pyrene	10	23	78.8	O
193-39-5	Indeno(1,2,3-cd)pyrene	6.7	19	95.7	O
53-70-3	Dibenz(a,h)anthracene	<6.8	42		
191-24-2	Benzo(g,h,i)perylene	8.7	13	39.6	
	Dibenzofuran	<51	<24		

O = OUT

S. Mansy 9/17/2011

Table 15

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0004

QA-
SAMPLE NO: C78SB-023M-0004-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratories**

DF=1

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	7.5	10		
91-20-3	Naphthalene	6.3	11	**54.3**	O
208-96-8	Acenaphthylene	29	5.9	**132**	O
83-32-9	Acenaphthene	<6.8	<0.33		
	Carbazole	<51	<28		
86-73-7	Fluorene	13	0.7	**180**	O
85-01-8	Phenanthrene	190	59	**105**	O
120-12-7	Anthracene	42	2.1	**181**	O
84-74-2	Di-n-butylphthalate	20	91	**128**	O
206-44-0	Fluoranthene	390	59	**147**	O
129-00-0	Pyrene	260	47	**139**	O
85-68-7	Butylbenzylphthalate	<51	<73		
56-55-3	Benzo(a)anthracene	160	43	**115**	O
218-01-9	Chrysene	170	37	**129**	O
117-81-7	bis(2-Ethylhexyl)phthalate	<51			
205-99-2	Benzo(b)fluoranthene	190	59	**105**	O
207-08-9	Benzo(k)fluoranthene	81	18	**127**	O
50-32-8	Benzo(a)pyrene	120	34	**112**	O
193-39-5	Indeno(1,2,3-cd)pyrene	72	27	**90.9**	O
53-70-3	Dibenz(a,h)anthracene	<6.8	63		
191-24-2	Benzo(g,h,i)perylene	74	24	**102**	O
	Dibenzofuran	5.8	<24		

O = OUT

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Table 16

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0005-SO

QA-:
SAMPLE NO: C78SB-023M-0005-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratories**

DF=10

Matrix: soil Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	<67	21		
91-20-3	Naphthalene	<67	22		
208-96-8	Acenaphthylene	84	11	154	O
83-32-9	Acenaphthene	<67	51		
	Carbazole	<500	220		
86-73-7	Fluorene	<67	88		
85-01-8	Phenanthrene	290	1100	117	O
120-12-7	Anthracene	110	220	66.7	O
84-74-2	Di-n-butylphthalate	<500	<79		
206-44-0	Fluoranthene	690	1800	89.2	O
129-00-0	Pyrene	540	1300	82.6	O
85-68-7	Butylbenzylphthalate	<500	<73		
56-55-3	Benzo(a)anthracene	450	780	53.7	O
218-01-9	Chrysene	440	740	50.8	O
117-81-7	bis(2-Ethylhexyl)phthalate	<500			
205-99-2	Benzo(b)fluoranthene	640	960	40.0	
207-08-9	Benzo(k)fluoranthene	340	310	9.23	
50-32-8	Benzo(a)pyrene	430	560	26.3	
193-39-5	Indeno(1,2,3-cd)pyrene	250	390	43.8	
53-70-3	Dibenz(a,h)anthracene	<67	89		
191-24-2	Benzo(g,h,i)perylene	270	960	112	O
	Dibenzofuran	<500	57		

O = OUT

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Table 17

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8270C

QC-
SAMPLE NO: C78SB-022M-0006-SO

QA-
SAMPLE NO: C78SB-023M-0006-SO

Date Prepared: 11/21/2011
Date Analyzed: 12/5/2011

Lab Name: **TestAmerica**
DF=20

Date Prepared: 11/21/2011
Date Analyzed: 11/28/2011

Lab Name: **CT Laboratories**

Matrix: soil Concentration: µg/Kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	<130	81		
91-20-3	Naphthalene	<130	55		
208-96-8	Acenaphthylene	<130	24		
83-32-9	Acenaphthene	<130	7.1		
	Carbazole	<1000	<28		
86-73-7	Fluorene	<130	7.1		
85-01-8	Phenanthrene	<130	110		
120-12-7	Anthracene	<130	16		
84-74-2	Di-n-butylphthalate	<1000	<79		
206-44-0	Fluoranthene	88	180	68.7	O
129-00-0	Pyrene	<130	150		
85-68-7	Butylbenzylphthalate	<1000	<73		
56-55-3	Benzo(a)anthracene	<130	110		
218-01-9	Chrysene	<130	100		
117-81-7	bis(2-Ethylhexyl)phthalate	<1000			
205-99-2	Benzo(b)fluoranthene	<130	150		
207-08-9	Benzo(k)fluoranthene	<130	46		
50-32-8	Benzo(a)pyrene	<130	80		
193-39-5	Indeno(1,2,3-cd)pyrene	<130	56		
53-70-3	Dibenz(a,h)anthracene	<130	13		
191-24-2	Benzo(g,h,i)perylene	<130	44		
	Dibenzofuran	<1000	26		

O = OUT

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Table 18

POLYAROMATIC HYDROCARBON ANALYSIS DATA SHEET

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/10/2011 Method No EPA 8270C

QC-: QA-

SAMPLE NO: C78SS-003M-0001-SO SAMPLE NO: C78SS-005M-0001-SO

Repoerted C78SS-0005-0001-SO

Date Prepared: 11/23/2011 Date Prepared: 11/21/2011

Date Analyzed: 12/7/2011 Date Analyzed: 11/28/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: soil Concentration: µk/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
	2-Methylnaphthalene	27	38		
91-20-3	Naphthalene	24	41	52.3	O
208-96-8	Acenaphthylene	11	10	9.52	
83-32-9	Acenaphthene	5.6	53	162	O
	Carbazole	<51	70		
86-73-7	Fluorene	10	62	144	O
85-01-8	Phenanthrene	92	500	138	O
120-12-7	Anthracene	23	120	136	O
84-74-2	Di-n-butylphthalate	-	<82		
206-44-0	Fluoranthene	180	720	120	O
129-00-0	Pyrene	120	540	127	O
85-68-7	Butylbenzylphthalate	<51	<76		
56-55-3	Benzo(a)anthracene	92	280	101	O
218-01-9	Chrysene	99	310	103	O
117-81-7	bis(2-Ethylhexyl)phthalate	<51			
205-99-2	Benzo(b)fluoranthene	140	410	98.2	O
207-08-9	Benzo(k)fluoranthene	85	130	41.9	
50-32-8	Benzo(a)pyrene	88	240	92.7	O
193-39-5	Indeno(1,2,3-cd)pyrene	58	120	69.7	O
53-70-3	Dibenz(a,h)anthracene	<6.8	27		
191-24-2	Benzo(g,h,i)perylene	87	80	8.38	
	Phenol	120	<		
	Dibenzofuran	10	34	109	O

O = OUT

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Table 19

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC- SAMPLE NO: C78SB-022M-0101

QA- SAMPLE NO: C78SB-023M-0101-SO

Date Analyzed: 11/21/2011 te Analyze 11/21/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	**RPD**	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<51	<20		
11141-16-5	Aroclor 1232	<46	<27		
53469-21-9	Aroclor 1242	<41	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	<56	<23		
11096-82-5	Aroclor 1260	<56	<12		

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Table 20

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC-
SAMPLE NO: C78SB-022M-0102-SO

QA-
SAMPLE NO: C78SB-023M-0102-SO

Date Analyzed: 11/21/2011 te Analyze 11/21/2011

Lab Name: **TestAemrica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<51	<20		
11141-16-5	Aroclor 1232	<46	<27		
53469-21-9	Aroclor 1242	<41	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	**22.0**	**250**	**168**	O
11096-82-5	Aroclor 1260	<56	<12		

O = OUT

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Table 21

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No: EPA 8082

QC- SAMPLE NO: C78SB-022M-0001-SO

QA- SAMPLE NO: C78SB-023M-0001-SO

Date Analyzed:

Date Analyzed: 11/21/2011

Lab Name: **TestAmerica**

Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	**RPD Limits=50**	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<51	<20		
11141-16-5	Aroclor 1232	<46	<27		
53469-21-9	Aroclor 1242	<41	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	37	420	**168**	O
11096-82-5	Aroclor 1260	<56	<12		

O = OUT

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Table 22

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC- SAMPLE NO: C78SB-022M-0002-SO

QA- SAMPLE NO: C78SB-023M-0002-SO

Date Analyzed: 11/21/2011 Date Analyzed: 11/21/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<50	<20		
11141-16-5	Aroclor 1232	<45	<27		
53469-21-9	Aroclor 1242	<40	<29		
12672-29-6	Aroclor 1248	<55	<29		
11097-69-1	Aroclor 1254	<55	<23		
11096-82-5	Aroclor 1260	<55	<12		

O = OUT

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Table 23

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC-
SAMPLE NO: C78SB-022M00003-SO

QA-
SAMPLE NO: C78SB-023M-0003-SO

Date Analyzed: 11/21/2011

Date Analyzed: 11/21/2011

Lab Name: **TestAmerica**

Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<51	<20		
11141-16-5	Aroclor 1232	<45	<27		
53469-21-9	Aroclor 1242	<40	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	<56	<23		
11096-82-5	Aroclor 1260	<56	<12		

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Table 24

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC- SAMPLE NO: C78SB-022M-0004-SO

QA- SAMPLE NO: C78SB-023M-0004-SO

Date Analyzed: 11/21/2011 Date Analyzed: 11/21/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µ/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<51	<20		
11141-16-5	Aroclor 1232	<46	<27		
53469-21-9	Aroclor 1242	<41	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	<56	<23		
11096-82-5	Aroclor 1260	<56	<12		

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Table 25

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC- SAMPLE NO: C78SB-022M-0005-SO

QA- SAMPLE NO: C78SB-023M-0005-SO

Date Analyzed: 11/21/2011 te Analyze 11/21/2011

Lab Name: **TestAemrica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<50	<20		
11141-16-5	Aroclor 1232	<45	<27		
53469-21-9	Aroclor 1242	<40	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	<56	<23		
11096-82-5	Aroclor 1260	<56	<12		

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Table 26

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/9/2011 Method No EPA 8082

QC- SAMPLE NO: C78SB-022M-0006-SO

QA- SAMPLE NO: C78SB-023M-0006-SO

Date Analyzed: 11/21/2011 te Analyze 11/21/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

DF=1

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Samole	QA Sample	RPD	Q
12674-11-2	Aroclor 1016	<66	<10		
11104-28-2	Aroclor 1221	<50	<20		
11141-16-5	Aroclor 1232	<45	<27		
53469-21-9	Aroclor 1242	<40	<29		
12672-29-6	Aroclor 1248	<56	<29		
11097-69-1	Aroclor 1254	<56	<23		
11096-82-5	Aroclor 1260	<56	<12		

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Table 27

POLYCHLORINATED BIPHENYL (PCB) ANALYSIS

QA/QC COMPARISON TABLE

Customer Sample ID

Project: Ravenna CC78

Date Sampled: 11/10/2011 Method No EPA 8082

QC-
SAMPLE NO: C78SS-003M-0001-SO

QA-
SAMPLE NO: C78SS-005M-0001-SO

Date Analyzed: 11/29/2011 te Analyze 11/21/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: µg/kg

CAS NO	COMPOUND	QC Sample		RPD	Q
12674-11-2	Aroclor 1016	<66	<11		
11104-28-2	Aroclor 1221	<51	<21		
11141-16-5	Aroclor 1232	<46	<29		
53469-21-9	Aroclor 1242	<41	<31		
12672-29-6	Aroclor 1248	<56	<31		
11097-69-1	Aroclor 1254	200	1100	**138**	O
11096-82-5	Aroclor 1260	<56	<13		

O = OUT

S. Mansy 9/18/2011

Table 28

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0101 SAMPLE NO: C78SB-023M-0101-SO

Date Analyzed 12/5/2011 Date Analyzed: 11/30/2011

Lab Name: **TestAemrica** **Lab Name: CT Laboratories**

DF=10 DF=1

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<41	<0.50		
319-84-6	α-BHC	<25	<0.60		
319-85-7	β-BHC	<35	40.0		
58-89-9	γ-BHC (Lindane)	<25	<0.50		
319-86-8	δ-BHC	<41	0.40		
5103-71-9	α-Chlordane	<30	<0.30		
5103-74-2	γ-Chlordane	<17	<0.30		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane (DBC)				
72-54-8	4,4'-DDD	<20	3.0		
72-55-9	4,4'-DDE	<17	2.3		
50-29-3	4,4'-DDT	<20	12.0		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<17	<0.30		
959-98-8	Endosulfan I	<17	<0.70		
33213-65-9	Endosulfane II	<25	0.30		
1031-07-8	Endosulfane-sulfate	<30	<0.91		
72-20-8	Endrin	<17	<0.4		
7421-93-4	Endrin aldehyde	<30	3.8		
53494-70-5	Endrin ketone	<20	3.6		
76-44-8	Heptachlor	<35	3.2		
1024-57-3	Heptachlor epoxide	<25	<0.50		
465-73-6	Isodrin				
72-43-5	Methoxychlor	33	9.1	114	O
8001-35-2	Toxaphene	<680	<5.0		

O = OUT

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Table 29

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0102-SO SAMPLE NO: C78SB-023M-0102-SO

Date Analyzed 11/20/2011 Date Analyzed: 11/29/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=1 DF+1

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	Q
309-00-2	Aldrin	<4.0	<0.50		
319-84-6	α-BHC	<2.5	<0.60		
319-85-7	β-BHC	<3.5	<0.60		
58-89-9	γ-BHC (Lindane)	<2.5	1.4		
319-86-8	δ-BHC	<4.1	<0.30		
5103-71-9	α-Chlordane	<3.0	<0.30		
5103-74-2	γ-Chlordane	<1.7	<0.30		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane(DBC)				
72-54-8	4,4'-DDD	<2.0	<0.30		
72-55-9	4,4'-DDE	<1.7	<0.30		
50-29-3	4,4'-DDT	**0.7**	<0.50		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<1.7	5.8		
959-98-8	Endosulfan I	<1.7	<0.70		
33213-65-9	Endosulfane II	<2.5	0.70		
1031-07-8	Endosulfane-sulfate	<3.0	<0.91		
72-20-8	Endrin	<1.7	3.7		
7421-93-4	Endrin aldehyde	<3.0	<1.1		
53494-70-5	Endrin ketone	<2.0	<0.80		
76-44-8	Heptachlor	<3.5	<0.40		
1024-57-3	Heptachlor epoxide	<2.5	1.6		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<5.0	24.0		
8001-35-2	Toxaphene	<67	<5.0		

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Table 30

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0001-SO SAMPLE NO: C78SB-023M-0001-SO

Date Analyz 11/20/2011 Date Analyzed: 11/30/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=5 DF=1

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<20	<0.50		
319-84-6	α-BHC	<13	<0.60		
319-85-7	β-BHC	<18	<0.60		
58-89-9	γ-BHC (Lindane)	<13	1.4		
319-86-8	δ-BHC	<20	1.00		
5103-71-9	α-Chlordane	<15	<0.30		
5103-74-2	γ-Chlordane	<8.6	8		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane (DBC)				
72-54-8	4,4'-DDD	<10	<0.30		
72-55-9	4,4'-DDE	<8.6	15		
50-29-3	4,4'-DDT	<10	22.0		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<8.6	8.2		
959-98-8	Endosulfan I	<8.6	6.1		
33213-65-9	Endosulfane II	<13	<3.0		
1031-07-8	Endosulfane-sulfate	<15	0.91		
72-20-8	Endrin	<8.6	<0.40		
7421-93-4	Endrin aldehyde	<15	<1.1		
53494-70-5	Endrin ketone	<10	<0.81		
76-44-8	Heptachlor	<18	4.7		
1024-57-3	Heptachlor epoxide	<13	2.2		
465-73-6	Isodrin				
72-43-5	Methoxychlor	13	17.0	26.7	
8001-35-2	Toxaphene	<340	<5.0		

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Table 31

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0002-SO SAMPLE NO: C78SB-023M-0002-SO

Date Analyz 11/20/2011 Date Analyzed: 11/30/2011

Lab Name: **TestAmerica** **Lab Name:** CT Laboratories

DF=10 DF=1

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<40	<0.50		
319-84-6	α-BHC	<25	<0.60		
319-85-7	β-BHC	<35	17.0		
58-89-9	γ-BHC (Lindane)	<25	1.4		
319-86-8	δ-BHC	<40	<0.30		
5103-71-9	α-Chlordane	<30	<0.30		
5103-74-2	γ-Chlordane	<17	8		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane (DBC)				
72-54-8	4,4'-DDD	<20	2.9		
72-55-9	4,4'-DDE	<17	6.3		
50-29-3	4,4'-DDT	**6.8**	**23.0**	109	O
2303-16-4	Dialliate				
60-57-1	Dieldrin	<17	<0.30		
959-98-8	Endosulfan I	<17	<0.70		
33213-65-9	Endosulfane II	<25	0.40		
1031-07-8	Endosulfane-sulfate	<30	<0.90		
72-20-8	Endrin	<17	8.2		
7421-93-4	Endrin aldehyde	<30	<1.1		
53494-70-5	Endrin ketone	<20	<0.80		
76-44-8	Heptachlor	<35	<0.40		
1024-57-3	Heptachlor epoxide	<25	<0.50		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<50	7.4		
8001-35-2	Toxaphene	<670	<5.0		

O = OUT

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Table 32

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

	QC-	QA-
SAMPLE NO:	C78SB-022M-0003-SO	C78SB-023M-0003-SO
Date Analyzed	11/20/2011	11/29/2011
Lab Name:	**TestAmerica**	**CT Laboratories**
	DF=1	DF=1
Matrix:	SOIL	Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<4.0	<0.51		
319-84-6	α-BHC	<2.5	<0.61		
319-85-7	β-BHC	<3.5	<0.61		
58-89-9	γ-BHC (Lindane)	<2.5	<0.51		
319-86-8	δ-BHC	<4.0	<0.30		
5103-71-9	α-Chlordane	<3.0	<0.30		
5103-74-2	γ-Chlordane	<1.7	<0.30		
57-74-9	Chlordane		<4.1		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane(DBC)				
72-54-8	4,4'-DDD	<2.0	<0.30		
72-55-9	4,4'-DDE	<1.7	2.6		
50-29-3	4,4'-DDT	<2.0	1.8		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<1.7	<0.30		
959-98-8	Endosulfan I	<1.7	<0.71		
33213-65-9	Endosulfane II	<2.5	<0.30		
1031-07-8	Endosulfane-sulfate	<3.0	<0.91		
72-20-8	Endrin	<1.7	<0.41		
7421-93-4	Endrin aldehyde	<3.0	1.6		
53494-70-5	Endrin ketone	<2.0	<0.81		
76-44-8	Heptachlor	<3.5	<0.41		
1024-57-3	Heptachlor epoxide	<2.5	<0.51		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<5.1	<0.71		
8001-35-2	Toxaphene	<68	<5.1		

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Table 33

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0004-SO SAMPLE NO: C78SB-023M-0004-SO

Date Analyzed 11/20/2011 Date Analyzed: 11/29/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=2 DF=1

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<8.1	<0.51		
319-84-6	α-BHC	<5.1	<0.61		
319-85-7	β-BHC	<7.1	<0.61		
58-89-9	γ-BHC (Lindane)		<0.51		
319-86-8	δ-BHC	<8.1	<0.30		
5103-71-9	α-Chlordane	<6.1	<0.30		
5103-74-2	γ-Chlordane	<3.4	4.7		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane(DBC)				
72-54-8	4,4'-DDD	<4.1	2.5		
72-55-9	4,4'-DDE	<3.4	3.2		
50-29-3	4,4'-DDT	<4.1	2.8		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<3.4	<0.30		
959-98-8	Endosulfan I	<3.4	<0.71		
33213-65-9	Endosulfane II	<5.1	<0.30		
1031-07-8	Endosulfane-sulfate	<6.1	<0.91		
72-20-8	Endrin	<3.4	0.71		
7421-93-4	Endrin aldehyde	<6.1	<1.1		
53494-70-5	Endrin ketone	<4.1	<0.81		
76-44-8	Heptachlor	<7.1	<0.40		
1024-57-3	Heptachlor epoxide	<5.1	<0.50		
465-73-6	Isodrin				
72-43-5	Methoxychlor	**9.6**	1.3	152	O
8001-35-2	Toxaphene	<140	<5.0		

O = OUT

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Table 34

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0005-SO SAMPLE NO: C78SB-023M-0005-SO

Date Analyzed: 11/20/2011 Date Analyzed: 11/30/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=10

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<40	<0.50		
319-84-6	α-BHC	<25	<0.60		
319-85-7	β-BHC	<35	<0.60		
58-89-9	γ-BHC (Lindane)	<25	<0.51		
319-86-8	δ-BHC	<40	0.50		
5103-71-9	α-Chlordane	<30	<0.30		
5103-74-2	γ-Chlordane	<17	<0.30		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane(DBC)				
72-54-8	4,4'-DDD	<20	2.6		
72-55-9	4,4'-DDE	<17	0.91		
50-29-3	4,4'-DDT	<20	4.9		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<17	<0.30		
959-98-8	Endosulfan I	<17	<0.70		
33213-65-9	Endosulfane II	<25	<0.30		
1031-07-8	Endosulfane-sulfate	<30	<0.91		
72-20-8	Endrin	<17	<0.40		
7421-93-4	Endrin aldehyde	<30	<1.1		
53494-70-5	Endrin ketone	<20	<0.80		
76-44-8	Heptachlor	<35	<0.40		
1024-57-3	Heptachlor epoxide	<25	<0.50		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<50	4.9		
8001-35-2	Toxaphene	<670	<5.0		

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Table 35

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

Method No: EPA 8081

QC- QA-

SAMPLE NO: C78SB-022M-0006-SO SAMPLE NO: C78SB-023M-0006-SO

Date Analyzed: 11/20/2011 Date Analyzed: 11/29/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=2

Matrix: SOIL Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD Limits=50	Q
309-00-2	Aldrin	<8.1	<0.50		
319-84-6	α-BHC	<5.0	<0.61		
319-85-7	β-BHC	<7.1	<0.61		
58-89-9	γ-BHC (Lindane)		<0.50		
319-86-8	δ-BHC	<8.1	<0.30		
5103-71-9	α-Chlordane	<6.1	<0.30		
5103-74-2	γ-Chlordane	<3.4	3.5		
57-74-9	Chlordane		<4.0		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane (DBC)				
72-54-8	4,4'-DDD	<4.0	<0.30		
72-55-9	4,4'-DDE	<3.4	3		
50-29-3	4,4'-DDT	<4.1	4.2		
2303-16-4	Dialliate				
60-57-1	Dieldrin	<3.4	<0.30		
959-98-8	Endosulfan I	<3.4	<0.71		
33213-65-9	Endosulfane II	<5.0	<0.30		
1031-07-8	Endosulfane-sulfate	<6.1	<0.91		
72-20-8	Endrin	<3.4	1.3		
7421-93-4	Endrin aldehyde	<6.1	<1.1		
53494-70-5	Endrin ketone	<4.1	<0.81		
76-44-8	Heptachlor	<7.1	<0.40		
1024-57-3	Heptachlor epoxide	<5.0	<0.50		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<10	<0.71		
8001-35-2	Toxaphene	<140	<5.0		

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Table 36

ORGANOCHLORINE PESTICIDES ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/10/2011

Method No: EPA 8081B

QA- QC-

SAMPLE NO: C78SS-003M-0001-SO SAMPLE NO: C78SS-005M-0001-SO

Date Analyzed 11/24/2011 Date Analyzed: 11/30/2011

Lab Name: **TestAmerica** **Lab Name: CT Laboratories**

DF=10 DF=5

Matrix: Concentration: ug/kg

CAS NO	COMPOUND	QC Sample	QA Sample	RPD	DF
309-00-2	Aldrin	<41	<2.6		
319-84-6	α-BHC	<25	<3.2		
319-85-7	β-BHC	<36	<3.2		
58-89-9	γ-BHC (Lindane)	<25	<2.6		
319-86-8	δ-BHC	<41	1.60		
5103-71-9	α-Chlordane	<31	<1.6		
5103-74-2	γ-Chlordane	<17	<1.6		
57-74-9	Chlordane		<21		
510-15-6	Chlorobenzilate				
96-12-8	1,2-Dibromo-3-chloropropane(DBC)				
72-54-8	4,4'-DDD	<20	<1.6		
72-55-9	4,4'-DDE	7	<1.6		
50-29-3	4,4'-DDT	7.1	29.0	121	O
2303-16-4	Dialliate				
60-57-1	Dieldrin	<17	29		
959-98-8	Endosulfan I	<17	170		
33213-65-9	Endosulfane II	<25	2.60		
1031-07-8	Endosulfane-sulfate	<31	<4.8		
72-20-8	Endrin	<17	7.9		
7421-93-4	Endrin aldehyde	<31	<5.8		
53494-70-5	Endrin ketone	<20	<4.2		
76-44-8	Heptachlor	<36	<21		
1024-57-3	Heptachlor epoxide	<25	<2.6		
465-73-6	Isodrin				
72-43-5	Methoxychlor	<51	50.0		
8001-35-2	Toxaphene	<680	<26		

O = OUT

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Table 37

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0101-SO QA-SAMPLE NO: C78SB-023M-0101-SO

Date Analyzed: 11/27/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.097	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.097	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.097	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.097	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.097	<0.090		
Nitrobenzene	NB	<0.097	<0.10		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.097	<0.090		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.097	<0.080		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.097	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.097	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.097	<0.070		
2-Nitrotoluene	2-NT	<0.097	<0.090		
3-Nitrotoluene	3-NT	<0.097	<0.11		
4-Nitrotoluene	4-NT	<0.097	<0.10		
Nitroglycerin	NG	<0.24	<0.50		
Pentaerythritol tetranitrat	PETN	<0.24	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 38

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0102-SO QA-SAMPLE NO: C78SB-023M-0102-SO

Date Analyzed: 11/27/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.10	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.10	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.10	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.10	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.10	<0.090		
Nitrobenzene	NB	<0.10	<0.10		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.10	<0.090		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.10	<0.080		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.10	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.10	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.10	<0.070		
2-Nitrotoluene	2-NT	<0.10	<0.090		
3-Nitrotoluene	3-NT	<0.10	<0.11		
4-Nitrotoluene	4-NT	<0.10	<0.10		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 39

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0001-SO QA-SAMPLE C78SB-023-M0001-SO

Date Analyzed: 11/27/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.099	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.099	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.099	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.099	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.099	<0.090		
Nitrobenzene	NB	<0.099	<0.10		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.099	<0.090		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.099	<0.080		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.099	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.099	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.099	<0.070		
2-Nitrotoluene	2-NT	<0.099	<0.090		
3-Nitrotoluene	3-NT	<0.099	<0.11		
4-Nitrotoluene	4-NT	<0.099	<0.10		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 40

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78AB-022M-0002-SO QA-SAMPLE NO.: C78SB-023M-0002-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.098	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.098	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.098	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.098	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.098	<0.090		
Nitrobenzene	NB	<0.098	<0.10		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.098	<0.090		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.098	<0.080		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.098	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.098	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.098	<0.070		
2-Nitrotoluene	2-NT	<0.098	<0.090		
3-Nitrotoluene	3-NT	<0.098	<0.11		
4-Nitrotoluene	4-NT	<0.098	<0.10		
Nitroglycerin	NG	<0.28	<0.50		
Pentaerythritol tetranitrat	PETN	<024	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 41

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0003-SO QA-SAMPLE NO: C78SB-023M-0003-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.097	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.097	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.097	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.097	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.097	<0.090		
Nitrobenzene	NB	<0.097	<0.10		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.097	<0.090		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.097	<0.080		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.097	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.097	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.097	<0.070		
2-Nitrotoluene	2-NT	<0.097	<0.090		
3-Nitrotoluene	3-NT	<0.097	<0.11		
4-Nitrotoluene	4-NT	<0.097	<0.10		
Nitroglycerin	NG	<0.24	<0.50		
Pentaerythritol tetranitrat	PETN	<0.24	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 42

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78-022M-0004-SO QA-SAMPLE NO: C78SB-023M-0004-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.099	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.099	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.099	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.099	<0.079		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.099	<0.090		
Nitrobenzene	NB	<0.099	<0.099		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.099	<0.089		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.099	<0.079		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.099	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.099	<0.079		
2,6-Dinitrotoluene	2,6-DNT	<0.099	<0.069		
2-Nitrotoluene	2-NT	<0.099	<0.089		
3-Nitrotoluene	3-NT	<0.099	<0.11		
4-Nitrotoluene	4-NT	<0.099	<0.099		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.59		
3,5-Dinitroaniline	3,5-DNA				

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Table 43

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0005-SO QA-SAMPLE NO: C78SB-023M-0005-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.10	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.10	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.10	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.10	<0.079		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.10	<0.090		
Nitrobenzene	NB	<0.10	<0.099		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.10	<0.089		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.10	<0.079		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.10	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.10	<0.079		
2,6-Dinitrotoluene	2,6-DNT	<0.10	<0.069		
2-Nitrotoluene	2-NT	<0.10	<0.089		
3-Nitrotoluene	3-NT	<0.10	<0.11		
4-Nitrotoluene	4-NT	<0.10	<0.099		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.59		
3,5-Dinitroaniline	3,5-DNA				

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Table 44

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/9/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SB-022M-0006-SO QA-SAMPLE NO: C78SB-023M-0006-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration:: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.099	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.099	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	<0.099	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.099	<0.079		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.099	<0.089		
Nitrobenzene	NB	<0.099	<0.099		
2,4,6-Trinitrotoluene	2,4,6-TNT	<0.099	<0.089		
4-Amino-2,6-dinitrotoluen	4-Am-DNT	<0.099	<0.079		
2-Amino-4,6-dinitrotoluen	2-Am-DNT	<0.099	<0.090		
2,4-Dinitrotoluene	2,4-DNT	<0.099	<0.079		
2,6-Dinitrotoluene	2,6-DNT	<0.099	<0.069		
2-Nitrotoluene	2-NT	<0.099	<0.089		
3-Nitrotoluene	3-NT	<0.099	<0.11		
4-Nitrotoluene	4-NT	<0.099	<0.099		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.60		
3,5-Dinitroaniline	3,5-DNA				

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Table 45

NITROAROMATICS, NITAMINES, NITRATE ESTERS

QA/QC COMPARISON TABLE Customer Sample ID

Project: Ravenna C78SB

Date Sampled: 11/10/2011 Method No. EPA8330B

QC-SAMPLE NO: C78SS-003M-0001-SO QA-SAMPLE NO: C78SS-005M-0001-SO

Reported C78SS-0005-0001-SO

Date Analyzed: 11/28/2011 Date Analyze 11/17/2011

Lab Name: **TestAmerica** Lab Name: **CT laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	Abbeviation	QC sample	QA Sample	RPD Limits=50	Q
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	HMX	<0.099	<0.12		
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	<0.099	<0.14		
1,3,5-Trinitrobenzene	1,3,5-TNB	0.047	<0.13		
1,3-Dinitrobenzene	1,3-DNB	<0.099	<0.080		
Methyl-2,4,6-trinitrophenylnitramine	TETRYL	<0.099	<0.089		
Nitrobenzene	NB	<0.099	<0.099		
2,4,6-Trinitrotoluene	2,4,6-TNT	1.2	4.5	116	O
4-Amino-2,6-dinitrotoluen	4-Am-DNT	0.77	0.74	3.97	
2-Amino-4,6-dinitrotoluen	2-Am-DNT	0.22	0.44	66.7	O
2,4-Dinitrotoluene	2,4-DNT	0.039	<0.080		
2,6-Dinitrotoluene	2,6-DNT	<0.099	<0.070		
2-Nitrotoluene	2-NT	<0.099	<0.089		
3-Nitrotoluene	3-NT	<0.099	<0.11		
4-Nitrotoluene	4-NT	<0.099	<0.10		
Nitroglycerin	NG	<0.25	<0.50		
Pentaerythritol tetranitrat	PETN	<0.25	<0.60		

O = OUT

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Table 46

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C-78 Date Sampled: 11/9/2011

QC-SAMPLE NO C78SB-022M-0101-SO QA-SAMPLE NO: C78SB-023M-0101-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/22/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	7200	1200	143	O
Antimony	0.140	0.740	136	O
Arsenic	11.0	14.6	28.1	
Barium	64.0	101	44.8	O
Beryllium	0.570	0.750	27.3	
Cadmium	0.310	0.130	81.8	O
Calcium	7900	16200	68.9	O
Chromium	14.0	351	185	O
Cobalt	7.20	9.90	31.6	
Copper	12.0	22.8	62.1	O
Iron	18000	32100	56.3	O
Lead	30.0	22.3	29.4	
Magnesium	2000	3320	49.6	O
Manganese	560	853	41.5	O
Mercury	0.0260	0.0190	31.1	
Nickel	16.0	20.0	22.2	
Potassium	570	1490	89.3	O
Selenium	0.880	0.970	9.73	
Silver	0.0320	<0.017		
Sodium	37.0000	<4.0		
Thallium	0.110	0.750	149	O
Vanadium	12.0	19.7	48.6	O
Zinc	120	138	14.0	

O = OUT

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Table 47

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna CC78 Date Sampled: 11/9/2011

QC-SAMPLE NO C78SB-022M-0102-SO QA-SAMPLE NO: C78SB-023M-0102-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration : mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	7200	5530		
Antimony	0.140	3.80	186	O
Arsenic	11.0	12.5	12.8	
Barium	64.0	207	106	O
Beryllium	0.570	0.560	1.77	
Cadmium	0.310	1.20	118	O
Calcium	7900	2980	90.4	O
Chromium	14.0	361	185	O
Cobalt	7.20	7.10	1.4	
Copper	12.0	243	181	O
Iron	18000	38000	71.4	O
Lead	30.0	569	180	O
Magnesium	2000	1080	59.7	O
Manganese	560	391	35.5	
Mercury	0.0260	0.0230	12.2	
Nickel	16.0	34.9	74.3	
Potassium	570.0	777	30.7	
Selenium	0.880	0.200	126	O
Silver	0.032	0.440	173	O
Sodium	37.0	<4.0		
Thallium	0.110	0.530	131	O
Vanadium	12.0	10.7	11.5	
Zinc	120	870	152	O

O = OUT

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Table 48

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78 Date Sampled: 11/9/2011

QC-SAMPLE NC C78SB-022M-0001-SO QA-SAMPLE NO: C78SB-023M-0001-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAemerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	**RPD** Limits=40	Q
Aluminum	5600	12300	74.9	O
Antimony	2.50	7.20	96.9	O
Arsenic	14.0	20.8	39.1	
Barium	160	740	129	O
Beryllium	3.50	1.40	85.7	O
Cadmium	8.60	2.80	102	O
Calcium	1900	5140	92.0	O
Chromium	1200	524	78.4	O
Cobalt	19.0	10.8	55.0	O
Copper	6800	725	161	O
Iron	59000	106000	57.0	O
Lead	490	1970	120	O
Magnesium	1300	1740	28.9	
Manganese	780	801	2.66	
Mercury	0.041	0.045	9.30	
Nickel	800	66.5	169	O
Potassium	440	1900	125	O
Selenium	0.870	0.930	6.67	
Silver	5.00	1.20	123	O
Sodium	<760	<4.0		
Thallium	<1.5	1.20		
Vanadium	<3.8	18.5		
Zinc	4400	1620	92.4	O

O = OUT S. Mansy 9/1/2011

Table 49

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78SB Date Sampled: 11/9/2011

QC-SAMPLE NC C78SB-022M-0002-SO QA-SAMPLE NO: C78SB-023M-0002-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	5500	13400	83.6	O
Antimony	<1.9	0.94		
Arsenic	14.0	18.0	25.0	
Barium	55.0	146	90.5	O
Beryllium	0.580	1.10	61.9	O
Cadmium	0.430	0.380	12.3	
Calcium	12000	28100	80.3	O
Chromium	12.0	467	190	O
Cobalt	5.20	7.00	29.5	
Copper	12.0	26.4	75.0	O
Iron	15000	27500	58.8	O
Lead	34.0	46.3	30.6	
Magnesium	1600	3800	81.5	O
Manganese	500	1210	83.0	O
Mercury	<0.072	0.047		
Nickel	12.0	16.2	29.8	
Potassium	530	1570.00	99.0	
Selenium	0.800	1.30	47.6	O
Silver	0.043	0.046	6.74	
Sodium	47.0	<4.0		
Thallium	0.096	1.10	168	O
Vanadium	9.00	17.0	61.5	O
Zinc	170	256	40.4	O

O = OUT S. Mansy 9/11/2011

Table 50
METAL ANALYSIS
QA/QC COMPARISON TABLE

Project: Ravenna C78SB Date Sampled: 11/9/2011

QC-SAMPLE NO C78SB-022M-0003-SO QA-SAMPLE NO: C78SB-023M-0003-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratories**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	6300	12600	**66.7**	O
Antimony	<2.0	0.530		
Arsenic	11.0	14.3	**26.1**	
Barium	42.0	86.7	**69.5**	O
Beryllium	0.420	0.630	**40.0**	
Cadmium	0.087	0.250	**96.7**	O
Calcium	1500	2080	**32.4**	
Chromium	13.0	229	**179**	O
Cobalt	6.70	9.70	**36.6**	
Copper	16.0	20.1	**22.7**	
Iron	19000	31700	**50.1**	O
Lead	15.0	18.4	**20.4**	
Magnesium	1700	2260	**28.3**	
Manganese	220	600	**92.7**	O
Mercury	<0.068	0.016		
Nickel	17.0	19.3	**12.7**	
Potassium	710	1630	**78.6**	
Selenium	0.970	0.540	**57.0**	O
Silver	0.018	<0.017		
Sodium	25.0	<4.0		
Thallium	0.100	0.450	**127**	O
Vanadium	11.0	21.9	**66.3**	O
Zinc	60.0	133	**75.6**	O

O =OUT S. Mansy 9/11/2011

Table 51

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78SB Date Sampled: 11/9/2011

QC-SAMPLE NO C78SB-022M-0004-SO QA-SAMPLE NO: C78SB-023M-0004-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratory**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	6400	9710	41.1	O
Antimony	<1.7	0.650		
Arsenic	7.70	9.00	15.6	
Barium	39.0	82.5	71.6	O
Beryllium	0.410	0.510	21.7	
Cadmium	0.220	0.260	16.7	
Calcium	1100	1730	44.5	O
Chromium	13.0	238	179	O
Cobalt	6.90	7.50	8.3	
Copper	11.0	17.7	46.7	O
Iron	16000	25900	47.3	O
Lead	11.0	19.6	56.2	O
Magnesium	1400	1730	21.1	
Manganese	270	450	50.0	O
Mercury	0.018	0.014	25.0	
Nickel	15.0	15.1	0.7	
Potassium	590	1510	87.6	O
Selenium	0.820	0.260	104	O
Silver	0.028	<0.017		
Sodium	20.0	<4.0		
Thallium	0.091	0.410	127	O
Vanadium	12.0	16.8	33.3	
Zinc	80.0	270	109	O

O = OUT

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Table 52

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78SB Date Sampled: 11/9/2011

QC-SAMPLE NO C78SB-022M-0005-SO QA-SAMPLE NO: C78SB-023M-0005-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratory**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	3400	6220	58.6	O
Antimony	<1.8	0.550		
Arsenic	5.10	5.60	9.3	
Barium	27.0	49.0	57.9	O
Beryllium	0.310	0.380	20.3	
Cadmium	0.066	0.026	87.0	O
Calcium	4400	9780	75.9	O
Chromium	8.10	291	189	O
Cobalt	4.60	5.10	10.3	
Copper	6.10	10.3	51.2	O
Iron	13000	20200	43.4	O
Lead	8.70	12.5	35.8	
Magnesium	950	1080	12.8	
Manganese	210	361	52.9	O
Mercury	<0.068			
Nickel	9.70	10.8	10.7	
Potassium	410	1120	92.8	O
Selenium	0.560	0.340	48.9	O
Silver	0.012	<0.017		
Sodium	19.0	<4.0		
Thallium	0.065	0.290	127	O
Vanadium	7.20	11.2	43.5	O
Zinc	43.0	44.3	3.0	

O = OUT

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Table 53

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78SB Date Sampled: 11/9/2011

QC-SAMPLE NO: C78SB-022M-0006-SO QA-SAMPLE NO: C78SB-023M-0006-SO

Date Analyzed: 12/22/2011 Date Analyzed: 11/21/11

Lab Name: **TestAemrica** Lab Name: **CT Laboratory**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	5400	10700	65.8	O
Antimony	<1.9	0.480		
Arsenic	7.20	9.60	28.6	
Barium	37.0	76.1	69.1	O
Beryllium	0.420	0.550	26.8	
Cadmium	0.130	0.160	20.7	
Calcium	7400	10200	31.8	
Chromium	11.0	165	175	O
Cobalt	7.50	8.00	6.5	
Copper	7.70	14.5	61.3	O
Iron	17000	24300	35.4	
Lead	11.0	16.8	41.7	O
Magnesium	1800	2990	49.7	O
Manganese	270	509	61.4	O
Mercury	<0.072	0.014		
Nickel	13.0	16.1	21.3	
Potassium	610	1780	97.9	O
Selenium	0.750	0.890	17.1	
Silver	0.022	<0.017		
Sodium	27.0	<4.0		
Thallium	0.100	0.370	115	O
Vanadium	10.0	17.1	52.4	O
Zinc	64.0	73.1	13.3	

O = OUT

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Table 54

METAL ANALYSIS

QA/QC COMPARISON TABLE

Project: Ravenna C78SS Date Sampled: 11/10/2011

QC-SAMPLE NO C78SS-003M-0001-SO QA-SAMPLE NO: C78SS-005M-0001-SO

Reported C78SS-0005-0001-SO

Date Analyzed: 11/29/2011 Date Analyzed: 11/21/11

Lab Name: **TestAmerica** Lab Name: **CT Laboratory**

Matrix: SOIL Concentration: mg/kg

Analyte	QC-Sample (S)	QA-Sample (S)	RPD Limits=40	Q
Aluminum	4500	5830	25.8	
Antimony	1.90	2.40	23.3	
Arsenic	6.90	7.60	9.7	
Barium	65.0	73.0	11.6	
Beryllium	0.620	0.590	5.0	
Cadmium	0.520	0.520	0.0	
Calcium	2700	3030	11.5	
Chromium	21.0	70.9	108.6	O
Cobalt	7.60	7.00	8.2	
Copper	37.0	37.2	0.5	
Iron	31000	31400	1.3	
Lead	110	145	27.5	
Magnesium	1600	1600	0.0	
Manganese	580	604	4.1	
Mercury	0.0430	0.0430	0.0	
Nickel	21.0	17.7	17.1	
Potassium	590	733	21.6	
Selenium	0.960	0.440	74.3	O
Silver	0.120	0.085	34.1	
Sodium	16.0	<4.2		
Thallium	0.095	0.500	136.1	O
Vanadium	12.0	12.9	7.2	
Zinc	150	131	13.5	

O - OUT

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Review of Internal Standards

Laboratory Name: TestAmerica North Canton, Ohio
Project: Ravenna 240-5866-1

I. ***Volatile Organic*** *Analysis*								*Method*: EPA8260B
IC			*ICV*			*CCV*			*Instr.*
Date	*Time*	*RRF*	*Date*	*Time*	*%D*	*Date*	*Time*	*%D*	*ID*
10/28/2011	13:39	☑	10/28/2011	19:22	☑	11/21/2011 11/22/2011 11/22/2011	11:21 14:58 21:01	☑ ☑ ☑	A3UX14
6/19/2011	1:46	☑	6/19/2011	7:04	☑	11/22/2011	14:58	☑	A3ux8
10/31/2011	17:54	☑	10/31/2011	22:56	☑	11/29/2011 11/22/2011	17:03 18:07	☑ ☑	A3ux9

II. *Semi-Volatile Organic Analysis*								*Method: EPA8270C*
IC			*ICV*			*CCV*			*Instr.*
Date	*Time*	*RRF*	*Date*	*Time*	*%D*	*Date*	*Time*	*%D*	*ID*
12/2/2011	12:12		12/2/2011	14:59		12/05/2011 12/06/2011 12/07/2011	10:45 9:20 8:20		AUAG2

☑ = Levels of all compounds were within the acceptable QC Limits specified by the method.

Appendix H – Laboratory Data

(Provided in the attached CD)

Appendix I – Data Validation Report

U.S. Army Corps of Engineers
Louisville District

Ravenna Army Ammunition Plant
Compliance Restoration Site
CC RVAAP-78 Quarry Pond Surface Dump
2011 Preliminary Assessment Sampling
Ravenna, Ohio

Final Data Validation Report
Sample Delivery Group:
240-5866-1

March 2013

Prepared for:
U.S. Army Corps of Engineers
Louisville District
Contract No. W912QR-08-D-0001
Delivery Order 0032

Prepared by:
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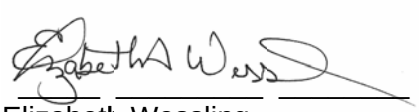
CONTRACTOR STATEMENT OF INDEPENDANT TECHNICAL REVIEW

MEC^X, LP (MEC^X) has completed the Data Validation Report for Sample Delivery Group 240-5866-1 from the Ravenna Army Ammunition Plant Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump 2011 Preliminary Assessment Sampling. Notice is hereby given that an independent technical review has been conducted to determine the usability and bias of the analytical data.

Significant concerns and the resolution are as follows:

None

As noted above, all concerns resulting from this independent technical review have been considered.



Elizabeth Wessling
Senior Environmental Chemist
MEC^X Independent Technical Review Team Leader



Patti Meeks, Ph.D.
Senior Environmental Chemist
MEC^X Independent Technical Review Team Member

EXECUTIVE SUMMARY

The overall objective of the project described in this document was to confirm the presence or absence of contamination at the Quarry Pond Surface Dump site. Sampling was conducted by Prudent Environmental Services (Prudent) in November 2011. A total of 11 primary multi-incremental (MI) samples, 7 MI field duplicate samples, 10 primary discrete samples, and 7 discrete field duplicate samples were collected.

The primary samples were analyzed by one or more of the following methods by TestAmerica-North Canton (TA-North Canton) located in North Canton, Ohio:

- United States Environmental Protection Agency (USEPA) SW-846 Method 6020 for metals
- USEPA SW-846 Methods 7471A for mercury
- USEPA SW-846 Method 8260B for volatile organic compounds (VOCs)
- USEPA SW-846 Method 8270C for semivolatile compounds (SVOCs)
- USEPA SW-846 Method 8081A for pesticides
- USEPA SW-846 Method 8082 for polychlorinated biphenyls (PCBs)

TA-North Canton subcontracted the samples to TestAmerica-West Sacramento, in West Sacramento, California, for the following analyses:

- USEPA SW-846 Method 8330B for explosive compounds
- USEPA SW-846 8330 Modified for nitroguanidine
- Laboratory procedure WS-WC-0050 for nitrocellulose, which is based on the United States Cold Regions Research and Engineering Laboratory (CRREL) method for nitrocellulose

This report details the findings of the primary sample data validation, analysis of field duplicate results, and the determination of data usability performed by MEC^X, LP (MEC^X) on the samples described above.

Additionally, 2 quality assurance soil samples were collected and submitted to CT Laboratories (CT) in Baraboo, Wisconsin. The samples were analyzed for the one or more of aforementioned analyses and the results are discussed in a separate report, *Ravenna Army Ammunition Plant Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump 2011 Preliminary Assessment Sampling Chemical Quality Assurance Report.*

Specific concerns regarding the data are noted below:

- No MRL standards were analyzed in association with the organic methods and nitrocellulose

- 1 LOD for dibenzo(a,h)anthracene exceeded the FWCUG (it should be noted that the laboratory reported estimated values to the DL)
- 1 LOD for nitroso-di-n-propylamine exceeded the FWCUG (it should be noted that the laboratory reported estimated values to the DL)
- Corrections made to the chain-of-custody by the sampler were overwritten or obliterated and none were initialed or dated
- Insufficient sample volume was provided for the VOC MS/MSDs

Some data were rejected due to matrix spike/matrix spike duplicate and laboratory control sample recovery outliers. Rejected data are not usable. Results with LODs that exceed project criteria may be usable for their intended purposes; however, it is dependent on the final data user to make this determination on a case-by-case basis. All remaining results are usable for their intended purposes as qualified by MEC^{X}.

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARNGD	Army National Guard
°C	Degrees Celsius
CCB	Continuing Calibration Blank
CCC	Calibration Check Compounds
CCV	Continuing Calibration Verification
CRREL	Cold Regions Research Environmental Laboratory
CT	CT Laboratories
%D	Percent Difference
DL	Detection Limit
DoD	Department of Defense
EDD	Electronic Data Deliverable
FWCUG	Facility-Wide Cleanup Goals
FWQAPP	Facility-Wide Quality Assurance Project Plan
GC/MS	Gas Chromatography/Mass Spectrometry
ICSA	Interference Check Sample A
ICSAB	Interference Check Sample AB
ICV	Initial Calibration Verification
ICP	Inductively Coupled Plasma
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MEC^X	MEC^X, LP
MI	Multi-incremental
MRL	Method Reporting Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PCB	Polychlorinated Biphenyl
Prudent	Prudent Environmental Services
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
RSL	Regional Screening Level
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SDG	Sample Delivery Group
SPCC	System Performance Check Compound
SVOC	Semivolatile Organic Compounds
TA-North Canton	TestAmerica – North Canton, Ohio
USACE	United State Army Corps of Engineers
USEPA	United State Environmental Protection Agency
VOC	Volatile Organic Compounds

1. INTRODUCTION

1.1 PROJECT OVERVIEW

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The primary samples were analyzed by one or more of the following methods by TestAmerica-North Canton (TA-North Canton) located in North Canton, Ohio:

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Additionally, 2 quality assurance soil samples were collected and submitted to CT Laboratories (CT) in Baraboo, Wisconsin. The samples were analyzed for the one or more of aforementioned analyses and the results are discussed in a separate report, *Ravenna Army Ammunition Plant Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump 2011 Preliminary Assessment Sampling Chemical Quality Assurance Report.*

This report describes findings of the primary sample data validation, analysis of primary/field duplicate results, and the determination of data usability performed by MEC^X, LP (MEC^X) on the site samples reported in sample delivery group (SDG) 240-5866-1 from TA-North Canton.

1.2 PREVIOUS ACTIVITIES AND DATA

The following summary was adapted from the *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*

(FWQAPP) prepared by Science Applications International Corporation (SAIC), March 2001 and text provided by the United States Corps of Engineers-Louisville District.

Located in northeastern Ohio on approximately 21,000 acres, Ravenna Army Ammunitions Plant (RVAAP) was established in 1940 to load, store, and demilitarize conventional artillery ammunition, bombs, mines, fuses and boosters, primers and percussion elements. Originally RVAAP operated as two separate units, the Portage Ordnance Depot and the Ravenna Ordnance Plant. During World War II, a contractor operated the Ravenna Ordnance Depot and the government operated the Portage Ordnance Depot. Ordnance production and storage for World War II continued until August 1945, at which time the facility was renamed the Ravenna Arsenal, and the government assumed control of all operations. Then, from 1951 to 1999, the entire facility was operated by contractors. Ordnance production at the facility was phased out and sent to Plum Brook Ordnance Works in Sandusky, Ohio and Keystone Ordnance Works in Meadville, Pennsylvania. All production at the facility had ceased by 1957 and the plant was placed on standby. In 1961, the plant was operational for seven months, processing and performing explosive melt-out of bombs. After deactivation late in 1961, the facility was renamed RVAAP. From mid-1968 until 1971, the plant was reactivated to load, assemble, and pack munitions on three load lines and two component lines. Operations ceased at Load Lines 1, 2, 3, and 4 in 1971; however, the Lines were reactivated to perform demilitarization operations for several months in 1973 and 1974. In 1992, RVAAP was again placed on "Inactive" status. Salvage and demolition operations started in 1998 and administrative control of the facility was transferred to the Army National Guard (ARNGD) in 1999.

The Quarry Pond Surface Dump, CC RVAAP-78, is located in the southwestern portion of RVAAP, just north of the Fuze and Booster Quarry Landfill/Ponds area of concern. The site consists of three areas of former dumping. Two separate debris dumps, Debris Piles A and B, which comprise the Quarry Pond Surface Dump, and an additional debris pile, Debris Pile C, found at the northwest end of the northern-most pond. Debris Pile A contains transite materials, which may contain asbestos. No transite or other possible asbestos containing materials was observed in Debris Pile B or C. One rusted 55-gallon drum with unknown contents and a former burn pile are situated within Debris Pile B. A second rusted 55-gallon drum with unknown contents is present in Debris Pile C. It is possible a larger amount of construction debris and material excavated from the quarry is located between Debris Piles A and B, and may extend westward to the road along the east side of the northern-most pond.

Samples collected in association with the project described in this document were to confirm the presence or absence of contamination at the Quarry Pond Surface Dump site.

2. DESCRIPTION OF WORK PERFORMED

This section describes the data verification and data validation procedures used during the evaluation of the site samples reported in SDG 240-5866-1 from TA-North Canton.

2.1 DATA VALIDATION PROCESS

A total of 11 primary MI samples, 7 MI field duplicate samples, 10 primary discrete samples, and 7 discrete field duplicate samples were collected. Level IV validation was performed on 10% of the total number of primary samples collected. Primary samples with associated QA and field duplicate samples were prioritized for Level IV validation.

Table 1. Validated sample identification table

Sample	SDG	Collected	Target Analyte List Metals & Mercury	Semivolatile Organic Compounds	Volatile Organic Compounds	Pesticides	Polychlorinated Biphenyls	Explosives	Propellants*
C78SS-001M-0001-SO	94472	11/10/2011	x	x	--	x	x	x	x
C78SS-002-0001-SO	94472	11/10/2011	--	--	x	--	--	--	--
C78SB-021M-0002-SO	94472	11/9/2011	x	x	--	x	x	x	x
C78SB-021V-0002-SO	94472	11/9/2011	--	--	x	--	--	--	--

*Propellants: nitroguanidine and nitrocellulose

Table 2. Duplicate identification table

Duplicate Sample ID	Parent Sample
C78SS-003M-0001-SO	C78SS-001M-0001-SO
C78SS-004-0001-SO	C78SS-002-0001-SO
C78SB-022M-0002-SO	C78SB-021M-0002-SO
C78SB-022V-0002-SO	C78SB-021V-0002-SO

Data validators assessed results based on the *Department of Defense Quality Systems Manual for Environmental Laboratories Version 4.1* (DoD QSM), FWQAPP, the specific EPA methods, the *National Functional Guidelines for Superfund Organic Methods Data Review* (2008), and the *National Functional Guidelines for Inorganic Data Review* (2004). The following were reviewed for Level IV validation:

- Sample management (collection techniques, sample containers, preservation, handling, transport, chain-of-custody, holding times),
- Calibration data summary forms (initial and continuing),
- Method blank sample results,
- Laboratory control sample (LCS) or LCS/LCS duplicate (LCS/LCSD) recoveries and/or precision,
- Laboratory duplicate precision,

- Surrogate recoveries (if applicable),
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision,
- Field QA/QC sample results,
- Inductively coupled plasma (ICP) interference check sample (ICS) recoveries,
- Serial dilution precision,
- Gas Chromatography/Mass Spectrometry (GC/MS) tuning, if a GC/MS is used,
- Internal standards performance (if applicable),
- Sample results verification,
- Target compound identification,
- Raw data.

Blanks – method, calibration, trip, field and equipment – were assessed using the National Functional Guidelines 5× and 10× rules. Target compound detects less than or equal to 5× a blank detect and common laboratory contaminant compound detects less than or equal to 10× a blank detect were qualified as nondetected. Nondetected results were reported at the limit of detection (LOD) if the original detect was less than or equal to the LOD or reported at the level of contamination if the original detect was greater than the LOD.

2.2 DATA VALIDATION QUALIFIERS

Data qualifiers, as defined below, were applied following the FWQAPP and the DoD QSM:

U Nondetected at the limit of detection
The analyte was analyzed for but not definitively detected.

J Estimated
The identification of the analyte is acceptable but the quality assurance criteria indicate that the quantitative values may be outside the normal expected range of precision. Additionally used to identify detects reported below the limit of quantitation (LOQ).

N Identity Presumptive and Tentative
There is presumptive evidence that the analyte is present but it has not been confirmed. There is an indication that the reported analyte is present; however, all quality control requirements necessary for confirmation were not met.

R Rejected
Data are considered to be rejected and shall not be used for environmental decisions.

2.3 DATA VALIDATION FLAGGING CODES

The qualification codes in the following table may have been used to flag the data described in this document: Sample qualifications are summarized in Appendix B. All qualifications and associated qualification codes have been entered into the electronic data deliverables (EDD) received from the laboratories and may be reviewed in the Appendix A of this report.

Table 3. Qualification code reference table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect.
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient was noncompliant.
R	Calibration RRF was noncompliant.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tuning was noncompliant
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	A deficiency was found that has been described in the "Sample Management," section (*II) or the "Method Analyses" section (*III).	A deficiency was found that has been described in the "Sample Management," section (*II) or the "Method Analyses" section (*III).

3. DATA ACQUISITION ACTIVITIES

3.1 SAMPLE COLLECTION

Soil samples were collected in November 2011. The samples were submitted under chain-of-custody to the primary laboratory, TA-North Canton.

Unless otherwise noted below, the chains-of-custody associated with the samples validated at Level IV were appropriately signed by both field and/or laboratory personnel with all samples and analyses accounted for, cooler custody seals intact, and within the temperature limits of 4±2°C. All documentation regarding sample handling as presented in the case narratives, chains of custody, correspondence, and sample condition upon receipt forms was evaluated with the following remaining deficiencies. No further requests were made to the primary contractor or the laboratories, and no data were qualified.

SDG	Issue
All	Corrections made to the chain-of-custody by the sampler were overwritten or obliterated and none were initialed or dated.

3.2 SAMPLE ANALYSIS

TA-North Canton, the primary laboratory, analyzed total of 11 primary MI samples, 7 MI field duplicate samples, 10 primary discrete samples, and 7 discrete field duplicate samples for one or more of the following methods.

Table 4. Analytical and preparation methods

Parameter	**Preparation Method**	**Method**
Explosives	8330B	8330B
Metals	3050B	6020
Mercury	7471A	7471A
Nitroguanidine	8330	8330M
PCBs	3540C	8082
Pesticides	3520C/3540C	8081A
Semivolatiles	3520C/3540C	8270C
Volatiles	5035	8260B
Nitrocellulose	None	WC-WS-0050

3.3 DATA COMPLETENESS

Data completeness for the project described in this report was found to be generally acceptable as no deliverables were missing.

3.4 SAMPLE PRESERVATION AND HOLDING TIME REQUIREMENTS

All method preservation requirements were met. The extraction and analytical holding times for the analyses reviewed in this document are as follows:

Table 5. Holding Times

Method	Analysis	Holding Time			
		Extraction		Analysis	
		Water	Soil	Water	Soil
6020	Metals	N/A	N/A	180 days	180 days
7471A	Mercury	N/A	N/A	28 days	28 days
8260B	VOCs	N/A	N/A	14 days	14 days
8270C	SVOCs	7 days	14 days	40 days	40 days
8081A	Pesticides	7 days	14 days	40 days	40 days
8082	PCBs	7 days	14 days	40 days	40 days
8330B	Explosives	7 days	14 days	40 days	40 days
8330 M	Nitroguanidine	7 days	14 days	40 days	40 days
WC-WS-0050	Nitrocellulose	N/A	N/A	28 days	28 days

All holding times were met.

3.6 DETECTION LIMIT REQUIREMENTS

The site specific cleanup goals (FWCUGs) for the National Guard Trainee, the Resident Adult Farmer, and the Resident Child Farmer presented in the *Final Facility-Wide Human Health Remediation Goals at the RVAAP* (2010) were compared to the limit of detection (LOD) for the nondetected analytes. As per the *Final Work Plan Addendum for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump*, if no FWCUG was listed, the USEPA most stringent USEPA Region 9 Regional Screening Levels (RSL) was utilized. It should be noted that the laboratory reported estimated values to the DL.

These LODs exceeded the FWCUGs:

- 1 dibenzo(a,h)anthracene LOD
- 1 nitroso-di-n-propylamine LOD

No LODs exceeded the Residential RSL.

The following had no FWCUG or RSL:

- 1 metal: potassium (nutrient)
- 8 pesticide compounds: alpha-chlordane, endosulfan I, endosulfan II, endosulfan sulfate, delta-BHC, endrin aldehyde, endrin ketone, and gamma-chlordane
- 2 VOCs: cis-1,3-dichloropropene, trans-1,3-dichloropropene
- 8 SVOC compounds: acenaphthylene, dimethyl phthalate, 1,3-dichlorobenzene, 2-nitrophenol, 3-nitroaniline, 3/4-methylphenol, , 4-bromophenyl phenyl ether, 4-chlorophenyl phenyl ether

Results with LODs that exceed project criteria may be usable for their intended purposes; it is dependent on the final data user to make this determination on a case-by-case basis. It should be noted that the laboratory reported estimated values to the DL.

4. DATA QUALITY EVALUATION

4.1 EXPLOSIVES

TA-West Sacramento analyzed 11 primary MI samples and 7 MI field duplicate samples for explosive compounds by USEPA SW-846 Method 8330B. MEC^X validated 2 soil samples at Level IV.

- Detection Limit (DL) studies were not evaluated as part of this project.
- Calibration
    - Initial calibration average percent relative standard deviations (%RSDs) were within the control limits listed in DoD QSM Table F-3 of ≤20%, or the linear regression r^2 values were ≥0.990.
    - The second source initial calibration verification standard (ICV) recoveries for both the primary and confirmation calibrations were within the control limits listed in DoD QSM Table F-3 of ±20%.
    - The continuing calibration verification (CCV) standard recoveries were within the control limits listed in DoD QSM Table F-3 of ±20%.
    - As per FWQAPP Section 8.3.2.1.2, low-level check standards (MRLs) are to analyzed. As no MRLs were analyzed with the samples, results less than 10× the LOQ were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code. Results higher than 10× the LOQ were not qualified as it was the reviewer's professional opinion that at those concentrations, the CCVs were indicative of instrument performance.
- Blanks: The method blanks associated with the validated samples had no target compound detects above the control limits listed in DoD QSM Table F-3 of one-half the LOQ or one-tenth the amount detected in a sample.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the control limits listed in DoD QSM Tables G-2 (poor performers) and G-13 for the listed compounds and within the reasonable laboratory control limits for nitroglycerin (84-114%) and PETN (85-115%).
- Surrogate Recovery: As no surrogate control limit was listed in the DoD QSM, surrogate recoveries were assessed against the reasonable laboratory-established control limits of 78-108%. The surrogate was recovered above the control limit at 123% in C78SS-001M-0001-SO; therefore, detects in this sample were qualified as estimated with a potential positive bias, "J+." The qualified results were coded with an "S" qualification code. All remaining surrogate recoveries were within the control limits.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the validated samples. Method accuracy was evaluated based on LCS results.

- Triplicates: No triplicate analyses were performed on the validated samples.

- Compound Identification: Compound identification was verified for those samples validated at a Level IV. Review of the sample chromatograms, standards, and retention times indicated no problems with target compound identification. Target compounds detected on the primary column were confirmed on a second column.

  The intercolumn RPDs for 4-amino-2,6-dinitrotoluene and 2,4-dinitrotoluene in sample C78SS-001M-0001-SO were 164% and 146%, respectively. Due to the size of the intercolumn RPDs, it was the reviewer's professional opinion the results should be qualified as tentatively identified, "N." The qualified results were coded with an "*III" qualification code.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for those samples validated at a Level IV. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

  The intercolumn RPDs for 4-amino-2,6-dinitrotoluene and 2,4-dinitrotoluene exceeded the control limit listed in DoD QSM Table F-3 of 40%, at 164% and 146%, respectively. These results were qualified as estimated, "J," and were coded with an "*III" qualification code.

- System Performance: Review of the raw data indicated no problems with system performance.

- Manual integrations: Some manual integrations were performed to separate incompletely resolved peaks and were deemed acceptable by the reviewer.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

  - Field Blanks and Equipment Rinsates: There were no equipment rinsate or field blanks collected in association with these samples.

  - Field Duplicates: There were 7 field duplicate samples analyzed for explosive compounds. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. Except as noted below, the results were within the control limits.

Table 6. Explosive field duplicate outliers

PCB field duplicate outliers				
Primary Sample	**Field Duplicate**	**Analyte**	**RPD**	**W/In LOQ**
C78SS-001M-0001-SO	C78SS-003M-0001-SO	2,4,6-Trinitrotoluene	N/A	No
		4-Amino-2,6-dinitrotoluene	N/A	No

4.2 PROPELLANTS

TA-West Sacrament analyzed 11 primary MI samples and 7 MI field duplicate samples for nitroguanidine by USEPA SW-846 Method 8330 and for nitrocellulose as nitrate/nitrite by laboratory procedure WC-WS-0050, which is based on the USCRREL method for nitrocellulose. MEC^X validated 2 soil samples at Level IV.

- DL studies were not evaluated as part of this project.
- Calibration
    - Nitroguanidine initial calibration %RSDs were within the control limits listed in DoD QSM Table F-2 of ≤20%, or the linear regression r^2 values were ≥0.990. Nitrocellulose linear regression r values were within the control limit listed in the DoD QSM Table F-11 of ≥0.995.
    - The nitroguanidine second source ICV for both the primary and confirmation calibrations were within the control limits listed in DoD QSM Table F-2 of 85-115%. The nitrocellulose ICV recoveries were within the control limits listed in DoD QSM Table F-11 of 90-110%.
    - The nitroguanidine CCV standard %Ds were within the control limits listed in DoD QSM Table F-2 of ≤15%. The nitrocellulose CCV recoveries were within the control limits listed in DoD QSM Table F-11 of 90-110%.
    - As per FWQAPP Section 8.3.2.1.2, MRLs are to analyzed. As no MRLs were analyzed with the samples, the results were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code.
- Blanks: The method blanks associated with the validated samples had no target compound detects above the control limits listed in DoD QSM Tables F-2 and F-11 of one-half the LOQ or one-tenth the amount detected in a sample.
- Blank Spikes and Laboratory Control Samples: No nitroguanidine LCS control limits are listed in the DoD QSM. All nitroguanidine recoveries were within the laboratory-established control limits of 72-121%. The nitrocellulose recoveries were within the control limits listed in DoD QSM Table F-11 of 80-120%.
- Surrogate Recovery: A surrogate is not required for the analyses of nitroguanidine or nitrocellulose.

- Triplicates: No triplicate analyses were performed on a validated sample.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a validated sample. Method accuracy was evaluated based on LCS results.

- Compound Identification: Compound identification was verified for those samples validated at a Level IV. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification. As there were no primary column detects, no confirmation column analyses were performed.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for those samples validated at a Level IV. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

- System Performance: Review of the raw data indicated no problems with system performance.

- Manual Integrations: No manual integrations were performed for the samples or QC reviewed at Level IV.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: There were no equipment rinsates or field blanks collected in association with these samples.

    - Field Duplicates: There were 7 field duplicate samples collected and analyzed for nitroguanidine and nitrocellulose. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. The results were within the control limits.

4.3 POLYCHLORINATED BIPHENYLS (PCBS)

TA-North Canton analyzed 11 primary MI samples and 7 MI field duplicate samples for PCBs by USEPA SW-846 Method 8082. MEC^X validated 2 soil samples at Level IV.

- DL studies were not evaluated as part of this project.

- Calibration: Calibration criteria listed in the DoD QSM Table F-2 were met.

    - Initial calibration average %RSDs were within the control limits of ≤20% or r^2 values ≥0.990.

- The second source ICV was within the control limit of ±20% of the true value for all applicable Aroclors.

- The CCV standard %Ds were within the control limits of ±20%.

- As per FWQAPP Section 8.3.2.1.2, MRL standards are required. As no MRLs were analyzed, results less than 10× the LOQ were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code. Results greater than 10× the LOQ were not qualified as it was the reviewer's professional opinion that at those concentrations, the CCVs were indicative of instrument performance.

- Blanks: The method blanks had no target compound detects above the control limits listed in the DoD QSM Table F-2, of one-half the LOQ for target compounds or one-tenth the amount detected in a sample.

- Blank Spikes and Laboratory Control Samples: LCS recoveries were within the control limits listed in DoD QSM Table G-17 for soils, of 40-140% and 60-130% for Aroclors 1016 and 1260, respectively.

- Surrogate Recovery: Recoveries were within the control limits listed in DoD QSM Table G-3 of 60-125% for soils.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on soil sample C78SS-001M-0001-SO. Recoveries affecting sample data were within the control limits listed in DoD QSM Table G-17 for soils, of 40-140% and 60-130% for Aroclors 1016 and 1260, respectively. The RPDs were within the control limit listed in the DoD QSM Table F-2 of ≤30%.

- Compound Identification: Compound identification was verified for the validated samples. Review of the sample chromatograms, standards, and retention times indicated no problems with target compound identification. The samples were analyzed on two analytical columns for target compound confirmation.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for the samples validated at a Level IV. Sample C78SS-001M-0001-SO was analyzed at a 5× dilution for a high concentration of Aroclor 1254. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

  The samples were analyzed on two analytical columns for target compound confirmation. The intercolumn RPD for Aroclor 1254 in sample C78SS-001M-0001-SO was within the control limit listed in DoD QSM table F2 of ≤40%.

- System Performance: Review of the raw data indicated no problems with system performance.

- Manual integrations were performed for some calibration and QC data associated with the sample data, primarily to correct baseline integration.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    o Field Blanks and Equipment Rinsates: The site samples in this SDG had no associated field blank or equipment rinsate samples.

    o Field Duplicates: There were 7 soil field duplicate pairs collected and analyzed for PCBs. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. Except as noted below, the results were within the control limits.

Table 7. PCB field duplicate outliers

PCB field duplicate outliers				
Primary Sample	**Field Duplicate**	**Analyte**	**RPD**	**W/In LOQ**
C78SS-001M-0001-SO	C78SS-003M-0001-SO	Aroclor-1254	N/A	No

4.4 PESTICIDES

TA-North Canton analyzed 11 primary MI samples and 7 MI field duplicate samples for pesticides by USEPA SW-846 Method 8081. MEC^X validated 2 soil samples at Level IV.

- DL studies were not evaluated as part of this project.

- Calibration: Calibration criteria listed in the DoD QSM Table F-2 were met.

    o Initial calibration %RSDs were within the control limit of ≤20%, or r^2 values ≥0.990.

    o The ICV recoveries for all target analytes were within the control limit of ±20% of the true value.

    o The DDT/Endrin breakdown standards were within the control limit listed in the DoD QSM Table F-2 of ≤15%.

    o The %Ds exceeded 20% for methoxychlor on both columns in one CCV bracketing the samples, at 28.2% and 42.9%. The detect for methoxychlor in sample C78SB-021M-0002-SO was qualified as estimated, "J," and coded with a "C" qualification code. The nondetected result in the remaining sample did not require qualification,

as the CCV responses were high. All remaining bracketing CCV %Ds affecting sample data were within the control limit of ≤20%.

- o As per FWQAPP Section 8.3.2.1.2, MRL standards are required. As no MRLs were analyzed, results less than 10× the LOQ were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code. Results higher than 10× the LOQ were not qualified as it was the reviewer's professional opinion that at those concentrations, the CCVs were indicative of instrument performance.

- Blanks: The method blanks had no target compound detects above the control limits listed in the DoD QSM Table F-2, of one-half the LOQ or one-tenth the amount detected in a site sample.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the control limits listed in the DoD QSM Table G-15.

- Surrogate Recovery: Sample C78SB-023M-0002-SO had recoveries above the control limits for TCX (70-125%) on the primary column, and DCB (55-130%) on the confirmation column, at 146% and 419%, respectively. The sample detect for methoxychlor was qualified as estimated with a potential positive bias, "J+." Remaining recoveries were within the control limits listed in the DoD QSM Table G-3.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on soil sample C78SS-001M-0001-SO. Five target compounds, 4,4'-DDE, 4,4'-DDT, endrin aldehyde, gamma chlordane, and methoxychlor, were recovered above the control limits in both the MS and MSD; however, none of the outliers were detected in the parent sample and no qualifications were required. Remaining recoveries were within the control limits listed in DoD QSM Table G-15 and all RPDs were within the control limit of ≤30% listed in the DoD QSM Table F-2.

- Compound Identification: Compound identification was verified for the samples validated at Level IV. Review of the sample chromatograms, standards, and retention times indicated no problems with target compound identification. The samples were analyzed on two analytical columns for target compound confirmation. The detect for methoxychlor in sample C78SB-021M-0002-SO was confirmed; however, the intercolumn RPD exceeded 100%, at 102%; therefore, the result was qualified as tentatively identified, "N," and coded with an "*III" qualification code.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for the validated samples. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

The samples were analyzed on two analytical columns for target compound confirmation. The detect for methoxychlor in sample C78SB-021M-0002-SO was confirmed; however, the intercolumn RPD exceeded the control limit listed in DoD QSM table F2 of ≤40%, at 102%; therefore, the result was qualified as estimated, "J," and coded with an "*III" qualification code.

- System Performance: Review of the raw data indicated no problems with system performance.

- Manual integrations were performed for the sample and some calibration and QC data associated with the sample data, primarily to correct baseline integration.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: The site samples in this SDG had no associated field blank or equipment rinsate samples.

    - Field Duplicates: There were 7 soil field duplicate pairs collected and analyzed for pesticides. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. The results were within the control limits.

4.5 SEMIVOLATILE ORGANIC COMPOUNDS (SVOCS)

TA-North Canton analyzed 11 primary MI samples and 7 MI field duplicate samples for SVOCs by USEPA Method 8270C. MEC^X validated 2 soil samples at Level IV.

- DL studies were not evaluated as part of this project.

- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The samples were analyzed within 12 hours of the DFTPP injection time.

- Calibration: Calibration criteria listed in the DoD QSM Table F-4 were met for all target compounds of interest, with exceptions affecting sample data listed below.

    - Initial calibration average RRFs and ICV and CCV RRFs were within method control limits of ≥0.050 for system performance check compounds (SPCCs). All initial calibration %RSDs were within the method control limits listed in the DoD QSM Table F-4 of ≤30% for calibration check compounds (CCCs) and ≤15% for remaining compounds, or r^2 values ≥0.990.

    - The ICV recovery for 2,4-dinitrophenol was 23%; therefore, the retained result for this compound in C78SB-021M-0002-SO was qualified as estimated, "UJ." The

qualified result was coded with a "C" qualification code. All remaining second source ICV standard recoveries were within the control limit of ±20%.

- All continuing calibration %Ds affecting sample data were within the control limit of ≤20%.

- As per FWQAPP Section 8.3.2.1.2, MRL standards are required. As no MRLs were analyzed, retained results less than 10× the LOQ were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code. Results higher than 10× the LOQ were not qualified as it was the reviewer's professional opinion that at those concentrations, the CCVs were indicative of instrument performance.

- Blanks: The method blanks had no target compound detects above the control limits listed in DoD QSM Table F-4 of one-half the LOQ for target compounds or one-tenth the amount detected in any sample, and no common laboratory contaminants.

- Blank Spikes and Laboratory Control Samples: Benzoic acid was not recovered in the LCS; therefore, results for benzoic acid in the samples were rejected, "R." The rejected results were coded with an "L" qualification code. All remaining recoveries were within the control limits listed in the DoD QSM Tables G-2 (poor performers) and G-7, or within the laboratory-established control limits when no QSM limit was prescribed.

- Surrogate Recovery: All but one surrogate was recovered below the control limit in C78SB-021M-0002-SO; therefore, all retained results were qualified as estimated, "UJ," for nondetects or, estimated with a potential negative bias, "J-" for detects. The qualified results were coded with an "S" qualification code. The surrogate recoveries for C78SS-001M-0001-SO were within the control limits listed in the DoD QSM Table G-3.

Samples qualified for surrogate recovery outliers			
Parent Sample	**Surrogate**	**%R**	**Limits**
C78SD-021M-0002-SO	2-Fluorophenol	31%	35-105
	Phenol-d5	31%	40-100
	Nitrobenzene-d5	29%	35-100
	2-Fluorobiphenyl	33%	45-105
	2,4,6-Tribromophenol	33%	35-125

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on C78SS-001M-0001-SO. Except as noted below, the recoveries were within the control limits listed in the DoD QSM Tables G-2 (poor performers) and G-7, or within the laboratory-established control limits when no QSM limit was prescribed. All RPDs were within the control limit listed in DoD QSM Table F-4 of ≤30%.

  The parent sample result for fluoranthene was qualified as estimated with a potential negative bias, "J-." The remaining results listed in the table below were rejected, "R," as

the MS/MSD spikes were not recovered. All qualified results were coded with a "Q" qualification code.

Samples qualified for MS/MSD recovery outliers		
Parent Sample	**Analyte**	**%Rs**
C78SS-001M-0001-SO	Benzoic acid	0%, 0%
	4,6-Dinitro-2-methylphenol	0%, 0%
	2,4-Dinitrophenol	0%, 0%
	Fluoranthene	48%, 44%
	Hexachlorocyclopentadiene	0%, 0%
	3,3'-Dichlorobenzidine	0%, 0%
	2-Methylphenol	0%, 0%
	4-Nitrophenol	0%, 0%
	Pentachlorophenol	0%, 0%
	2,4,6-Trichlorophenol	0%, 0%
	4-Chloroaniline	0%, 0%

- Internal Standards Performance: The internal standard area counts and retention times were within the DoD QSM Table F-4 control limits established by the initial calibration midpoint standard: ±30 seconds for retention times and -50% / +100% for internal standard areas.

- Compound Identification: Compound identification was verified for the samples validated at Level IV. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for the samples validated at Level IV. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J," by the laboratory. Reported nondetects are valid to the LOD.

  C78SS-001M-0001-SO was analyzed at a 10× dilution and C78SB-021M-0002-SO was analyzed at a 4× dilution in order to report one or more analytes within the linear range of the calibration.

  Target compounds nitrobenzene, 2,4-dinitrotoluene and 2,6-dinitrotoluene were reported by both 8330B and 8270C. As the 8330B LOQs were lower than the 8270C LOQs, the results for these compounds were rejected, "R," in the 8270C analyses in favor of the 8330B results, for the samples validated at Level IV. All rejected analytes were coded with a "D" qualification code.

- System Performance: Review of the raw data indicated no problems with system performance.

- Some routine manual integrations were performed for the samples and calibration and QC data associated with the sample data. All manual integrations reviewed at Level IV were considered appropriate.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

  - Field Blanks and Equipment Rinsates: There were no equipment rinsates or field blanks collected in association with these samples.

  - Field Duplicate Samples: There were 7 field duplicate samples collected and analyzed for SVOCs. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. Except as noted below, the results were within the control limits.

Table 8. SVOC field duplicate outliers

SVOC field duplicate outliers				
Primary Sample	**Field Duplicate**	**Analyte**	**RPD**	**W/In LOQ**
C78SB-021M-0002-SO	C78SB-022M-0002-SO	2-Methylnaphthalene	N/A	No
		Naphthalene	N/A	No
		Benzo(a)anthracene	59%	N/A
		Benzo(a)pyrene	71%	N/A
		Benzo(b)fluoranthene	79%	N/A
		Benzo(g,h,i)perylene	77%	N/A
		Benzo(k)fluoranthene	76%	N/A
		Chrysene	70%	N/A
		Fluoranthene	67%	N/A
		Indeno(1,2,3-cd)pyrene	79%	N/A
		Pyrene	67%	N/A
C78SS-001M-0001-SO	C78SS-003M-0001-SO	Benzo(a)anthracene	N/A	No
		Benzo(a)pyrene	N/A	No
		Benzo(b)fluoranthene	N/A	No
		Chrysene	N/A	No
		Phenanthrene	N/A	No
		Pyrene	N/A	No
		Fluoranthene	86%	N/A

4.6 VOLATILE ORGANIC COMPOUNDS (VOCS)

TA-North Canton analyzed 10 primary discrete samples and 7 discrete field duplicate samples for volatile compounds by USEPA SW-846 Method 8260B. MEC^X validated 2 primary soil samples at Level IV.

- DL studies were not evaluated as part of this project.

- GC/MS Tuning: The BFB tunes met the method abundance criteria. Samples were analyzed within 12 hours of the BFB injection time.

- Calibration: Calibration criteria listed in the DoD QSM Table F-4 were met for all target compounds of interest.

    - Initial calibration average RRFs were within the control limit of ≥0.05, and the %RSDs were within the control limit of ≤15%, or r values ≥0.995.

    - The ICV RRFs were within the control limit of ≥0.05. Recoveries for all target analytes were within the control limits of ±20% of the true value.

    - Continuing calibration RRFs were within the control limit of ≥0.05 for all target compounds, and %Ds were within the control limit of ≤20.

    - As per FWQAPP Section 8.3.2.1.2, MRL standards are required. As no MRLs were analyzed, results less than 10× the LOQ were qualified as estimated, "J," for detects and, "UJ," for nondetects, and coded with a "C" qualification code. Results higher than 10× the LOQ were not qualified as it was the reviewer's professional opinion that at those concentrations, the CCVs were indicative of instrument performance.

- Blanks: The method blanks associated with the validated samples had detects below the LOQ for methylene chloride at 239(J) µg/Kg and 182(J) µg/Kg. As results for methylene chloride in both samples were below the LOQ but above the LOD, the results were qualified as nondetected, "U," at the level of contamination, and coded with a "B" qualification code. The method blanks had no other target compound detects above the control limits listed in DoD QSM Table F-4 of one-half the LOQ for target compounds and no common laboratory contaminant detects above the LOQ.

- Blank Spikes and Laboratory Control Samples: The recovery for cis-1,3-dichloropropene was below the control limits of 70-125%, at 68% in the LCS associated with sample C78SB-021V-0002-SO. The nondetected sample result for cis-1,3-dichloropropene was qualified as estimated, "UJ," and coded with an "L" qualification code. Remaining recoveries were within the control limits listed in DoD QSM Table G-5.

- Surrogate Recovery: The surrogate 4-bromofluorobenznee was recovered below the control limits of 85-120% in both samples C78SB-021V-0002-SO and C78SS-002-0001-SO, at 80% and 67%, respectively. D8-toluene was also recovered below the control limits of 85-115% in sample C78SS-002-0001-SO, at 72%. Separate analyses for 2-butanone and 2-hexanone also had recoveries below the control limits for both BFB and d8-toluene in sample C78SS-002-0001-SO, indicating a matrix effect on the surrogates. The reanalysis of sample C78SB-021V-0002-SO for 2-butanone and 2-hexanone had acceptable surrogate recoveries; therefore, those compounds required no qualification in that sample. All other results were qualified as estimated, "J," for detects and "UJ,"

for nondetects in both samples. Qualified results were coded with an "S" qualification code. Remaining recoveries were within the control limits listed in DoD QSM Table G-3 or within laboratory-established control limits for those not listed in Table G-3.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on a validated sample in this SDG, due to insufficient sample volume. Evaluation of method accuracy was based on LCS results.

- Internal Standards Performance: The internal standard area counts and retention times were within the DoD QSM Table F-4 control limits established by the initial calibration midpoint standard: ±30 seconds for retention times and -50%/+100% for internal standard areas.

- Compound Identification: Compound identification was verified for the samples validated at Level IV. Review of the sample chromatograms, retention times, and spectra indicated no problems with target compound identification.

- Compound Quantification and Reported Detection Limits: Compound quantification was verified for the samples validated at Level IV. The LOQs were supported by the low point of the initial calibration and the laboratory DLs. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

- System Performance: Review of the raw data indicated no problems with system performance.

- Manual integrations were not performed for the samples validated at Level IV or the associated calibration or QC.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Trip Blanks: Trip blanks are not required to accompany soil samples.

    - Field Blanks and Equipment Rinsates: The site samples in this SDG had no associated field blank or equipment rinsate samples.

    - Field Duplicates and Field Split Samples: There were 7 soil field duplicate pairs collected and analyzed for VOCs. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. The results were within the control limits.

4.7 METALS

TA-North Canton analyzed 11 primary MI samples and 7 MI field duplicate samples for metals by USEPA Methods 6020 and 7471A. MEC^X validated 2 primary soil samples at Level IV.

- DL studies were not evaluated as part of this project.
- Calibration: Except as noted below, calibration criteria were met.
    - Initial calibration: Linear regression r-values were within the control limit listed in the DoD QSM Tables F-7 and F-8 of ≥0.995.
    - The ICV recoveries were within the control limits listed in DoD QSM Table F-8 of 90-110%. The mercury ICV and CCV recoveries were within the control limits listed in DoD QSM Table F-7 of 90-110% and 80-120%, respectively.
    - The laboratory analyzed CRDL standards that were at the LOQ. The recoveries were within the control limits listed in DoD QSM Tables F-7 and F-8 of 80-120%.
- Blanks: The method blanks and CCBs had no applicable detects above the control limit listed in DoD QSM Tables F-7 and F-8 of one-half the LOQ or one-tenth the amount detected in a sample.
- Interference Check Samples: ICP and ICPMS interference check sample A (ICSA) and AB (ICSAB) recoveries were within the control limits listed in DoD QSM Table F-8 of 80-120%. No analytes were detected in the ICSA above the control limit listed in DoD QSM Table F-8 of <LOD.
- Blank Spikes and Laboratory Control Samples: The recoveries were within the control limits listed in DoD QSM Table G-19 of 80-120%.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on C78SS-007M-0001-SO. Except for antimony, the laboratory duplicate RPDs were within the control limits listed in DoD QSM Tables F-7 and F-8 of ≤20%. The duplicate criterion was only applied when the original sample result was nominally ≥5× the LOQ. In cases where the original sample result was <5× the LOQ, the reasonable control limit of ± the LOQ was applied. The antimony results were outside of the ±LOQ control limit; therefore, both sample results for antimony were qualified as estimated, "J," and were coded with an "E" qualification code.
- Matrix Spike/Matrix Spike Duplicate: A matrix spike analysis was performed on C78SS-007M-0001-SO. Except as noted below, recoveries were within the control limits listed in DoD QSM Table G-19 of 80-120%. Matrix spike control limits were not applied when the native sample concentration exceeded the spiked amount by a factor of four or more.

The results noted in the table below, all detects, were qualified as estimated with a potential negative bias, "J-," for detects. All qualified results were coded with a "Q" qualification code. As per the National Functional Guidelines, all samples of the same matrix in an SDG were qualified for a matrix spike recovery outlier.

Samples qualified for matrix spike recovery outliers			
Parent Sample	**Analyte**	**%R**	**Qualified Samples**
C78SS-007M-0001-SO	Antimony	20%	C78SS-001M-0001-SO, C78SB-021M-0002-SO
	Calcium	41%	
	Copper	57%	
	Selenium	74%	

- Serial Dilution: Serial dilution analyses were performed on C78SS-007M-0001-SO. The %Ds for barium and lead exceeded the control limit at 11% and 19%, respectively; therefore the results for these analytes were qualified as estimated with a potential negative bias, "J-." The qualified results were coded with an "A" qualification code. The remaining serial dilution %Ds were within the control limit listed in DoD QSM Table F-8 of ≤10%. The serial dilution control limit is only applicable when the original sample concentration is minimally ≥50× the DL for ICP analytes and ≥25× the DL for mercury.

- Sample Result Verification: For Level IV validation, calculations were verified and the sample results reported on the sample result summary were verified against the raw data. Any result reported between the DL and the LOQ was qualified as estimated, "J." Reported nondetects are valid to the LOD.

- Manual Integrations: No manual integrations were noted in the mercury analyses.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: There were no equipment rinsates or field blanks collected in association with these samples.

    - Field Duplicate Samples: There were 7 field duplicate samples collected and analyzed for metals. The control limit listed in FWQAPP Table 3-1 of ≤50% was only applied when both sample results were ≥5× the LOQ. In cases where results were <5× the LOQ, the reasonable control limit of ± the LOQ was applied. Except as noted below, the results were within the control limits.

Table 9. Metals field duplicate outliers

Metals field duplicate outliers				
Primary Sample	**Field Duplicate**	**Analyte**	**RPD**	**W/In LOQ**
C78SB-021M-0002-SO	C78SB-022M-0002-SO	Calcium	64%	N/A
		Chromium	55%	N/A
		Lead	55%	N/A
		Potassium	N/A	No

5. DATA USABILITY

5.1 DATA USABILITY

Table 10, below, lists the number of analytes qualified for quality control outliers. A summary of the qualifications applied to the data can be found in Appendix B.

Some data were rejected for MS/MSD and LCS recovery outliers. These data are not usable. In instances where a data point had multiple results, the reviewer chose the most technically sound result to report and rejected the remaining data points. These data points rejected for multiple results do not affect data quality or usability and are not included in Table 10.

5.2 DATA COMPLETENESS

According to information provided by the USACE, all planned soil samples were collected. The field completeness for this field effort was 100%.

The analytical completeness goal established in the FWQAPP was 90% for each method. The completeness goal was met for all analyses. Data with LODs that exceeded criteria and data estimated for quality control outliers or for detects between the DL and the LOQ were included in Table 10 for informational purposes only.

Table 10. Analytical completeness for primary data

			Number of Results					
Analysis	**Samples Analyzed**	**Analytes per Sample**	**Total**	**Rejected**	**LOQs Exceeding Criteria**	**Estimated for QC Outliers**	**Estimated for Detects <LOQ**	**Percent Complete**
Explosives	2	16	32	0	0	32	2	100%
PCBs	2	7	14	0	0	14	0	100%
Pesticides	2	21	42	0	0	42	1	100%
SVOCs[1]	2	66	126	11	2	126	4	91.3%
VOCs	2	37	74	0	0	74	4	100%
Metals	2	23	46	0	0	12	9	100%
Nitroguanidine	2	1	2	0	0	2	0	100%
Nitrocellulose	2	1	2	0	0	2	1	100%
Totals			**338**	**11**	**2**	**304**	**21**	**96.7%**

[1]Results rejected as duplicate data do not appear in the total analyte count

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 PRIMARY AND FIELD DUPLICATE SAMPLE COMPARISON SUMMARY

Primary and field duplicate sample comparisons were considered to be in good agreement as only 7.6% of the data had field duplicate results exceeding the criteria listed in the FWQAPP of 50% or +/- the LOQ for results below the 5× the LOQ. Most outliers were for SVOCs. For both sets of SVOC field duplicate pairs, the samples were analyzed at different dilutions. The increased variability in diluted sample results and soil heterogeneity may be partially responsible for the outliers.

Table 11. Primary/field duplicate sample comparison summary

Method	Number of Analytes	Primary/Field Duplicate Pairs	Total Analyte	Number of results within control limits	Number of results above control limit
Explosives	16	2	32	30	2
PCBs	7	2	14	13	1
Pesticides	21	2	42	42	0
SVOCs[1]	66	2	115	97	18
VOCs	37	2	74	74	0
Metals	23	2	46	42	4
Nitroguanidine	1	2	2	2	0
Nitrocellulose	1	2	2	2	0

[1]Results rejected as duplicate data do not appear in the total analyte count

6.2 SPECIFIC DATA CONCERNS

Specific concerns regarding the data are noted below:

- No MRL standards were analyzed in association with the organic methods and nitrocellulose
- 1 LOD for dibenzo(a,h)anthracene exceeded the FWCUG (it should be noted that the laboratory reported estimated values to the DL)
- 1 LOD for nitroso-di-n-propylamine exceeded the FWCUG (it should be noted that the laboratory reported estimated values to the DL)
- Corrections made to the chain-of-custody by the sampler were overwritten or obliterated and none were initialed or dated.
- Insufficient sample volume was provided for the VOC MS/MSDs

In order to avoid repetition of the issues noted above, the following actions should be taken:

- MEC^X recommends the contractor be requested to review their chain-of-custody procedures.

- MEC^X recommends that the MRL standard requirement be listed in the laboratory's statement of work.

- MEC^X recommends the sampler collect sufficient volume for all requested analyses, including MS/MSD.

7. REFERENCES

Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review. United States Environmental Protection Agency Contract Laboratory Program (CLP). June 2008.

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Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.1. DoD Data Quality Workgroup. April 2009.

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

Final Work Plan Addendum for 2010 Preliminary Assessment Compliance Restoration Site CC RVAAP-78 Quarry Pond Surface Dump. Prudent Environmental Services. October 2011.

Quality Assurance Project Plan for Environmental Investigations at the Ravenna Army Ammunition Plant. SAIC. March 2001.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Revision 6. United States Environmental Protection Agency. February 2007.

APPENDIX A

Qualified Sample Result Forms

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect.
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient was noncompliant.
R	Calibration RRF was noncompliant.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tuning was noncompliant
T	Presumed contamination as indicated by the trip blank results.	Not applicable
+	False positive – reported compound was not present.	False positive – reported compound was not present.
-	False negative – compound was present but not reported.	False negative – compound was present but not reported.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	A deficiency was found that has been described in the "Sample Management," section (*II) or the "Method Analyses" section (*III).	A deficiency was found that has been described in the "Sample Management," section (*II) or the "Method Analyses" section (*III).

Validated Sample Result Forms: 240-5866-1

Analysis Method 6020

Sample Name C78SB-021M-0002-SO **AnalysisType:** RE3/TOT

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
ALUMINUM	7429-90-5	3800	7.9	2	mg/Kg			
ANTIMONY	7440-36-0	0.37	0.16	0.049	mg/Kg		J-	E, Q
ARSENIC	7440-38-2	15	0.39	0.041	mg/Kg			
BARIUM	7440-39-3	48	0.39	0.1	mg/Kg		J-	A
BERYLLIUM	7440-41-7	0.57	0.079	0.0028	mg/Kg			
CADMIUM	7440-43-9	0.48	0.16	0.0024	mg/Kg			
CALCIUM	7440-70-2	6200	160	32	mg/Kg		J-	Q
CHROMIUM	7440-47-3	21	0.39	0.13	mg/Kg			
COBALT	7440-48-4	4.5	0.079	0.0035	mg/Kg	Q		
COPPER	7440-50-8	11	0.32	0.087	mg/Kg		J-	Q
IRON	7439-89-6	15000	39	8.6	mg/Kg			
LEAD	7439-92-1	60	1.2	0.28	mg/Kg	D	J-	A
MAGNESIUM	7439-95-4	1200	79	7	mg/Kg			
MANGANESE	7439-96-5	450	2	0.63	mg/Kg	D		
NICKEL	7440-02-0	15	0.39	0.068	mg/Kg			
POTASSIUM	7440-09-7	390	79	3	mg/Kg			
SELENIUM	7782-49-2	0.7	0.39	0.016	mg/Kg		J-	Q
SILVER	7440-22-4	0.064	0.093	0.015	mg/Kg	J	J	
SODIUM	7440-23-5	45	79	11	mg/Kg	J	J	
THALLIUM	7440-28-0	0.085	0.16	0.044	mg/Kg	J	J	
VANADIUM	7440-62-2	6.4	0.39	0.034	mg/Kg			
ZINC	7440-66-6	140	3.2	0.79	mg/Kg			

Analysis Method 6020

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES/TOT

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
ALUMINUM	7429-90-5	4400	8.2	2	mg/Kg			
ANTIMONY	7440-36-0	1.3	0.82	0.25	mg/Kg	D	J-	E, Q
ARSENIC	7440-38-2	8.4	0.41	0.043	mg/Kg			
BARIUM	7440-39-3	82	0.41	0.11	mg/Kg		J-	A
BERYLLIUM	7440-41-7	0.64	0.082	0.0029	mg/Kg			
CADMIUM	7440-43-9	0.57	0.82	0.013	mg/Kg	J D	J	
CALCIUM	7440-70-2	3900	160	33	mg/Kg		J-	Q
CHROMIUM	7440-47-3	28	0.41	0.13	mg/Kg			
COBALT	7440-48-4	8.2	0.082	0.0037	mg/Kg			
COPPER	7440-50-8	34	0.33	0.09	mg/Kg		J-	Q
IRON	7439-89-6	35000	200	45	mg/Kg	D		
LEAD	7439-92-1	120	1.2	0.29	mg/Kg	D	J-	A
MAGNESIUM	7439-95-4	1600	82	7.3	mg/Kg			
MANGANESE	7439-96-5	650	2	0.65	mg/Kg	D		
NICKEL	7440-02-0	25	0.41	0.071	mg/Kg			
POTASSIUM	7440-09-7	550	82	3.1	mg/Kg			
SELENIUM	7782-49-2	0.91	0.41	0.017	mg/Kg		J-	Q
SILVER	7440-22-4	0.15	0.41	0.065	mg/Kg	J D	J	
SODIUM	7440-23-5	18	82	11	mg/Kg	J	J	
THALLIUM	7440-28-0	0.1	0.16	0.046	mg/Kg	J	J	
VANADIUM	7440-62-2	11	0.41	0.035	mg/Kg			
ZINC	7440-66-6	150	3.3	0.82	mg/Kg			

Analysis Method 7471A

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES/TOT

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
MERCURY	7439-97-6	0.032	0.063	0.0088	mg/Kg	J	J	

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES/TOT

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
MERCURY	7439-97-6	0.064	0.084	0.012	mg/Kg	J	J	

Analysis Method 8081A

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
4,4'-DDD	72-54-8	6.8	20	6.2	ug/Kg	U	UJ	C
4,4'-DDE	72-55-9	6.8	17	3.9	ug/Kg	U	UJ	C
4,4'-DDT	50-29-3	6.8	20	6.3	ug/Kg	U	UJ	C
ALDRIN	309-00-2	13	40	12	ug/Kg	U	UJ	C
ALPHA-BHC	319-84-6	13	25	7.4	ug/Kg	U	UJ	C
ALPHA-CHLORDANE	5103-71-9	13	30	9.5	ug/Kg	U	UJ	C
BETA-BHC	319-85-7	13	35	11	ug/Kg	U	UJ	C
DELTA-BHC	319-86-8	13	40	12	ug/Kg	U	UJ	C
DIELDRIN	60-57-1	6.8	17	4.7	ug/Kg	U	UJ	C
ENDOSULFAN I	959-98-8	6.8	17	5.2	ug/Kg	U	UJ	C
ENDOSULFAN II	33213-65-9	13	25	8.3	ug/Kg	U	UJ	C
ENDOSULFAN SULFATE	1031-07-8	13	30	8.8	ug/Kg	U	UJ	C
ENDRIN	72-20-8	6.8	17	5	ug/Kg	U	UJ	C
ENDRIN ALDEHYDE	7421-93-4	13	30	10	ug/Kg	U	UJ	C
ENDRIN KETONE	53494-70-5	6.8	20	6.3	ug/Kg	U	UJ	C
GAMMA-BHC	58-89-9	13	25	7.5	ug/Kg	U	UJ	C
GAMMA-CHLORDANE	5103-74-2	6.8	17	4.2	ug/Kg	U	UJ	C
HEPTACHLOR	76-44-8	13	35	11	ug/Kg	U	UJ	C
HEPTACHLOR EPOXIDE	1024-57-3	13	25	8.1	ug/Kg	U	UJ	C
METHOXYCHLOR	72-43-5	17	50	15	ug/Kg	J D	NJ+	C, S
TOXAPHENE	8001-35-2	200	680	190	ug/Kg	U	UJ	C

Analysis Method 8081A

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
4,4'-DDD	72-54-8	6.8	20	6.3	ug/Kg	U	UJ	C
4,4'-DDE	72-55-9	6.8	17	4	ug/Kg	U J	UJ	C
4,4'-DDT	50-29-3	6.8	20	6.4	ug/Kg	U J	UJ	C
ALDRIN	309-00-2	14	41	12	ug/Kg	U	UJ	C
ALPHA-BHC	319-84-6	14	25	7.4	ug/Kg	U	UJ	C
ALPHA-CHLORDANE	5103-71-9	14	31	9.6	ug/Kg	U	UJ	C
BETA-BHC	319-85-7	14	36	11	ug/Kg	U	UJ	C
DELTA-BHC	319-86-8	14	41	12	ug/Kg	U	UJ	C
DIELDRIN	60-57-1	6.8	17	4.8	ug/Kg	U	UJ	C
ENDOSULFAN I	959-98-8	6.8	17	5.3	ug/Kg	U	UJ	C
ENDOSULFAN II	33213-65-9	14	25	8.4	ug/Kg	U	UJ	C
ENDOSULFAN SULFATE	1031-07-8	14	31	8.9	ug/Kg	U	UJ	C
ENDRIN	72-20-8	6.8	17	5.1	ug/Kg	U	UJ	C
ENDRIN ALDEHYDE	7421-93-4	14	31	10	ug/Kg	U J	UJ	C
ENDRIN KETONE	53494-70-5	6.8	20	6.4	ug/Kg	U	UJ	C
GAMMA-BHC	58-89-9	14	25	7.5	ug/Kg	U	UJ	C
GAMMA-CHLORDANE	5103-74-2	6.8	17	4.3	ug/Kg	U J	UJ	C
HEPTACHLOR	76-44-8	14	36	11	ug/Kg	U	UJ	C
HEPTACHLOR EPOXIDE	1024-57-3	14	25	8.2	ug/Kg	U	UJ	C
METHOXYCHLOR	72-43-5	34	51	15	ug/Kg	U J	UJ	C
TOXAPHENE	8001-35-2	200	680	190	ug/Kg	U	UJ	C

Analysis Method 8082

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
AROCLOR 1016	12674-11-2	25	66	21	ug/Kg	U	UJ	C
AROCLOR 1221	11104-28-2	25	50	16	ug/Kg	U	UJ	C
AROCLOR 1232	11141-16-5	25	45	14	ug/Kg	U	UJ	C
AROCLOR 1242	53469-21-9	25	40	13	ug/Kg	U	UJ	C
AROCLOR 1248	12672-29-6	25	55	17	ug/Kg	U	UJ	C
AROCLOR 1254	11097-69-1	25	55	17	ug/Kg	U	UJ	C
AROCLOR 1260	11096-82-5	25	55	17	ug/Kg	U	UJ	C

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
AROCLOR 1016	12674-11-2	130	330	110	ug/Kg	U	UJ	C
AROCLOR 1221	11104-28-2	130	250	82	ug/Kg	U	UJ	C
AROCLOR 1232	11141-16-5	130	230	71	ug/Kg	U	UJ	C
AROCLOR 1242	53469-21-9	130	200	66	ug/Kg	U	UJ	C
AROCLOR 1248	12672-29-6	130	280	87	ug/Kg	U	UJ	C
AROCLOR 1254	11097-69-1	550	280	87	ug/Kg	D	J	C
AROCLOR 1260	11096-82-5	130	280	87	ug/Kg	U J	UJ	C

Analysis Method 8260B

Sample Name C78SB-021V-0002-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-8 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,1,1-TRICHLOROETHANE	71-55-6	27	320	27	ug/Kg	U	UJ	C, S
1,1,2,2-TETRACHLOROETHANE	79-34-5	32	320	12	ug/Kg	U	UJ	C, S
1,1,2-TRICHLOROETHANE	79-00-5	32	320	16	ug/Kg	U	UJ	C, S
1,1-DICHLOROETHANE	75-34-3	32	320	22	ug/Kg	U	UJ	C, S
1,1-DICHLOROETHENE	75-35-4	32	320	23	ug/Kg	U	UJ	C, S
1,2-DIBROMOETHANE	106-93-4	32	320	13	ug/Kg	U	UJ	C, S
1,2-DICHLOROETHANE	107-06-2	32	320	13	ug/Kg	U	UJ	C, S
1,2-DICHLOROETHENE (TOTAL)	540-59-0	11	650	11	ug/Kg	U	UJ	C, S
1,2-DICHLOROPROPANE	78-87-5	13	320	11	ug/Kg	U	UJ	C, S
2-BUTANONE	78-93-3	130	1300	56	ug/Kg	U	UJ	C
2-HEXANONE	591-78-6	65	1300	26	ug/Kg	U	UJ	C
4-METHYL-2-PENTANONE	108-10-1	130	1300	62	ug/Kg	U	UJ	C, S
ACETONE	67-64-1	260	1300	220	ug/Kg	U	UJ	C, S
BENZENE	71-43-2	32	320	16	ug/Kg	U	UJ	C, S
BROMOCHLOROMETHANE	74-97-5	32	320	17	ug/Kg	U	UJ	C, S
BROMODICHLOROMETHANE	75-27-4	32	320	13	ug/Kg	U	UJ	C, S
BROMOFORM	75-25-2	32	320	25	ug/Kg	U	UJ	C, S
BROMOMETHANE	74-83-9	65	320	38	ug/Kg	U	UJ	C, S
CARBON DISULFIDE	75-15-0	57	320	16	ug/Kg	J	J	C, S
CARBON TETRACHLORIDE	56-23-5	13	320	8.3	ug/Kg	U	UJ	C, S
CHLOROBENZENE	108-90-7	13	320	8.3	ug/Kg	U	UJ	C, S
CHLOROETHANE	75-00-3	130	320	79	ug/Kg	U	UJ	C, S
CHLOROFORM	67-66-3	32	320	11	ug/Kg	U	UJ	C, S
CHLOROMETHANE	74-87-3	32	320	18	ug/Kg	U	UJ	C, S
CIS-1,2-DICHLOROETHENE	156-59-2	13	320	8.9	ug/Kg	U	UJ	C, S
CIS-1,3-DICHLOROPROPENE	10061-01-5	13	320	10	ug/Kg	U Q	UJ	C, L, S
DIBROMOCHLOROMETHANE	124-48-1	32	320	16	ug/Kg	U	UJ	C, S
ETHYL BENZENE	100-41-4	42	320	7	ug/Kg	J	J	C, S

Analysis Method 8260B

METHYLENE CHLORIDE	75-09-2	270	320	100	ug/Kg	J B	UJ	B, C, S
STYRENE	100-42-5	13	320	7.2	ug/Kg	U	UJ	C, S
TETRACHLOROETHENE	127-18-4	32	320	16	ug/Kg	U	UJ	C, S
TOLUENE	108-88-3	96	320	22	ug/Kg	J	J	C, S
TOTAL XYLENES	1330-20-7	240	650	10	ug/Kg	J	J	C, S
TRANS-1,2-DICHLOROETHENE	156-60-5	32	320	12	ug/Kg	U	UJ	C, S
TRANS-1,3-DICHLOROPROPENE	10061-02-6	32	320	26	ug/Kg	U	UJ	C, S
TRICHLOROETHENE	79-01-6	32	320	13	ug/Kg	U	UJ	C, S
VINYL CHLORIDE	75-01-4	32	320	23	ug/Kg	U	UJ	C, S

Analysis Method 8260B

Sample Name C78SS-002-0001-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-42 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,1,1-TRICHLOROETHANE	71-55-6	20	240	20	ug/Kg	U	UJ	C, S
1,1,2,2-TETRACHLOROETHANE	79-34-5	24	240	8.6	ug/Kg	U	UJ	C, S
1,1,2-TRICHLOROETHANE	79-00-5	24	240	12	ug/Kg	U	UJ	C, S
1,1-DICHLOROETHANE	75-34-3	24	240	16	ug/Kg	U	UJ	C, S
1,1-DICHLOROETHENE	75-35-4	24	240	17	ug/Kg	U	UJ	C, S
1,2-DIBROMOETHANE	106-93-4	24	240	9.6	ug/Kg	U	UJ	C, S
1,2-DICHLOROETHANE	107-06-2	24	240	9.6	ug/Kg	U	UJ	C, S
1,2-DICHLOROETHENE (TOTAL)	540-59-0	7.9	480	7.9	ug/Kg	U	UJ	C, S
1,2-DICHLOROPROPANE	78-87-5	9.6	240	7.9	ug/Kg	U	UJ	C, S
2-BUTANONE	78-93-3	96	960	41	ug/Kg	U	UJ	C, S
2-HEXANONE	591-78-6	48	960	19	ug/Kg	U	UJ	C, S
4-METHYL-2-PENTANONE	108-10-1	96	960	46	ug/Kg	U	UJ	C, S
ACETONE	67-64-1	190	960	160	ug/Kg	U	UJ	C, S
BENZENE	71-43-2	24	240	12	ug/Kg	U	UJ	C, S
BROMOCHLOROMETHANE	74-97-5	24	240	13	ug/Kg	U	UJ	C, S
BROMODICHLOROMETHANE	75-27-4	24	240	9.5	ug/Kg	U	UJ	C, S
BROMOFORM	75-25-2	24	240	18	ug/Kg	U	UJ	C, S
BROMOMETHANE	74-83-9	48	240	28	ug/Kg	U	UJ	C, S
CARBON DISULFIDE	75-15-0	24	240	12	ug/Kg	U	UJ	C, S
CARBON TETRACHLORIDE	56-23-5	9.6	240	6.2	ug/Kg	U	UJ	C, S
CHLOROBENZENE	108-90-7	9.6	240	6.2	ug/Kg	U	UJ	C, S
CHLOROETHANE	75-00-3	96	240	59	ug/Kg	U	UJ	C, S
CHLOROFORM	67-66-3	24	240	8.5	ug/Kg	U	UJ	C, S
CHLOROMETHANE	74-87-3	24	240	13	ug/Kg	U	UJ	C, S
CIS-1,2-DICHLOROETHENE	156-59-2	9.6	240	6.6	ug/Kg	U	UJ	C, S
CIS-1,3-DICHLOROPROPENE	10061-01-5	9.6	240	7.6	ug/Kg	U	UJ	C, S
DIBROMOCHLOROMETHANE	124-48-1	24	240	12	ug/Kg	U	UJ	C, S
ETHYL BENZENE	100-41-4	9.6	240	5.2	ug/Kg	U	UJ	C, S

Analysis Method 8260B

METHYLENE CHLORIDE	75-09-2	170	240	74	ug/Kg	J B	UJ	B, C, S
STYRENE	100-42-5	9.6	240	5.4	ug/Kg	U	UJ	C, S
TETRACHLOROETHENE	127-18-4	24	240	12	ug/Kg	U	UJ	C, S
TOLUENE	108-88-3	24	240	16	ug/Kg	U	UJ	C, S
TOTAL XYLENES	1330-20-7	29	480	7.8	ug/Kg	U	UJ	C, S
TRANS-1,2-DICHLOROETHENE	156-60-5	24	240	8.9	ug/Kg	U	UJ	C, S
TRANS-1,3-DICHLOROPROPENE	10061-02-6	24	240	19	ug/Kg	U	UJ	C, S
TRICHLOROETHENE	79-01-6	24	240	9.3	ug/Kg	U	UJ	C, S
VINYL CHLORIDE	75-01-4	24	240	17	ug/Kg	U	UJ	C, S

Analysis Method 8270C

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,2,4-TRICHLOROBENZENE	120-82-1	110	200	110	ug/Kg	U	UJ	S, C
1,2-DICHLOROBENZENE	95-50-1	110	200	39	ug/Kg	U	UJ	S, C
1,3-DICHLOROBENZENE	541-73-1	110	200	44	ug/Kg	U	UJ	S, C
1,4-DICHLOROBENZENE	106-46-7	110	200	81	ug/Kg	U	UJ	S, C
2,4,5-TRICHLOROPHENOL	95-95-4	110	610	100	ug/Kg	U	UJ	S, C
2,4,6-TRICHLOROPHENOL	88-06-2	320	610	320	ug/Kg	U	UJ	S, C
2,4-DICHLOROPHENOL	120-83-2	110	610	81	ug/Kg	U	UJ	S, C
2,4-DIMETHYLPHENOL	105-67-9	320	610	81	ug/Kg	U	UJ	S, C
2,4-DINITROPHENOL	51-28-5	320	1300	320	ug/Kg	U	UJ	S, C
2,4-DINITROTOLUENE	121-14-2	110	810	110	ug/Kg	U	R	D
2,6-DINITROTOLUENE	606-20-2	110	810	85	ug/Kg	U	R	D
2-CHLORONAPHTHALENE	91-58-7	13	200	13	ug/Kg	U	UJ	S, C
2-CHLOROPHENOL	95-57-8	110	200	110	ug/Kg	U	UJ	S, C
2-METHYLNAPHTHALENE	91-57-6	200	27	13	ug/Kg		J-	S, C
2-METHYLPHENOL	95-48-7	320	810	320	ug/Kg	U	UJ	S, C
2-NITROANILINE	88-74-4	110	810	37	ug/Kg	U	UJ	S, C
2-NITROPHENOL	88-75-5	110	200	110	ug/Kg	U	UJ	S, C
3,3'-DICHLOROBENZIDINE	91-94-1	320	400	73	ug/Kg	U	UJ	S, C
3-METHYLPHENOL & 4-METHYL	65794-96-9	320	1600	81	ug/Kg	U	UJ	S, C
3-NITROANILINE	99-09-2	320	810	65	ug/Kg	U	UJ	S, C
4,6-DINITRO-2-METHYLPHENOL	534-52-1	320	610	320	ug/Kg	U	UJ	S, C
4-BROMOPHENYL-PHENYLETHE	101-55-3	110	200	53	ug/Kg	U	UJ	S, C
4-CHLORO-3-METHYLPHENOL	59-50-7	110	610	85	ug/Kg	U	UJ	S, C
4-CHLOROANILINE	106-47-8	110	610	69	ug/Kg	U	UJ	S, C
4-CHLOROPHENYL-PHENYLETH	7005-72-3	110	200	53	ug/Kg	U	UJ	S, C
4-NITROANILINE	100-01-6	110	810	110	ug/Kg	U	UJ	S, C
4-NITROPHENOL	100-02-7	320	1300	320	ug/Kg	U	UJ	S, C
ACENAPHTHENE	83-32-9	13	27	13	ug/Kg	U	UJ	S, C

Analysis Method 8270C

ACENAPHTHYLENE	208-96-8	13	27	13	ug/Kg	U	UJ	S, C
ANTHRACENE	120-12-7	270	27	13	ug/Kg		J-	S
BENZO(A)ANTHRACENE	56-55-3	710	27	13	ug/Kg		J-	S
BENZO(A)PYRENE	50-32-8	620	27	13	ug/Kg		J-	S
BENZO(B)FLUORANTHENE	205-99-2	870	27	13	ug/Kg		J-	S
BENZO(G,H,I)PERYLENE	191-24-2	420	27	13	ug/Kg		J-	S
BENZO(K)FLUORANTHENE	207-08-9	370	27	13	ug/Kg	M	J-	S
BENZOIC ACID	65-85-0	1300	2700	1300	ug/Kg	U	R	L
BENZYL ALCOHOL	100-51-6	110	1300	85	ug/Kg	U	UJ	S, C
BIS(2-CHLOROETHOXY)METHAN	111-91-1	110	400	89	ug/Kg	U	UJ	S, C
BIS(2-CHLOROETHYL) ETHER	111-44-4	13	400	8.1	ug/Kg	U	UJ	S, C
BIS(2-CHLOROISOPROPYL) ETHE	108-60-1	110	400	38	ug/Kg	U	UJ	S, C
BIS(2-ETHYLHEXYL) PHTHALAT	117-81-7	110	200	77	ug/Kg	U	UJ	S, C
BUTYLBENZYL PHTHALATE	85-68-7	110	200	40	ug/Kg	U	UJ	S, C
CARBAZOLE	86-74-8	110	200	110	ug/Kg	U	UJ	S, C
CHRYSENE	218-01-9	720	27	4.4	ug/Kg		J-	S
DIBENZO(A,H)ANTHRACENE	53-70-3	13	27	13	ug/Kg	U	UJ	S, C
DIBENZOFURAN	132-64-9	57	200	13	ug/Kg	J	J-	S, C
DIETHYL PHTHALATE	84-66-2	110	200	65	ug/Kg	U	UJ	S, C
DIMETHYL PHTHALATE	131-11-3	110	200	69	ug/Kg	U	UJ	S, C
DI-N-BUTYL PHTHALATE	84-74-2	110	200	61	ug/Kg	U	UJ	S, C
DI-N-OCTYL PHTHALATE	117-84-0	110	200	110	ug/Kg	U	UJ	S, C
FLUORANTHENE	206-44-0	1600	27	13	ug/Kg		J-	S
FLUORENE	86-73-7	45	27	13	ug/Kg		J-	S, C
HEXACHLOROBENZENE	118-74-1	13	27	8.5	ug/Kg	U	UJ	S, C
HEXACHLOROBUTADIENE	87-68-3	110	200	110	ug/Kg	U	UJ	S, C
HEXACHLOROCYCLOPENTADIE	77-47-4	110	1300	110	ug/Kg	U	UJ	S, C
HEXACHLOROETHANE	67-72-1	110	200	36	ug/Kg	U	UJ	S, C
INDENO(1,2,3-CD)PYRENE	193-39-5	370	27	13	ug/Kg		J-	S
ISOPHORONE	78-59-1	110	200	53	ug/Kg	U	UJ	S, C
NAPHTHALENE	91-20-3	130	27	13	ug/Kg		J-	S, C
NITROBENZENE	98-95-3	13	400	8.9	ug/Kg	U	R	D

Analysis Method 8270C

N-NITROSO-DI-N-PROPYLAMINE	621-64-7	110	200	110	ug/Kg	U	UJ	S, C
N-NITROSODIPHENYLAMINE	86-30-6	110	200	85	ug/Kg	U	UJ	S, C
PENTACHLOROPHENOL	87-86-5	320	610	320	ug/Kg	U	UJ	S, C
PHENANTHRENE	85-01-8	710	27	13	ug/Kg		J-	S
PHENOL	108-95-2	110	200	110	ug/Kg	U	UJ	S, C
PYRENE	129-00-0	1200	27	13	ug/Kg		J-	S

Analysis Method 8270C

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,2,4-TRICHLOROBENZENE	120-82-1	280	510	280	ug/Kg	U	UJ	C
1,2-DICHLOROBENZENE	95-50-1	280	510	99	ug/Kg	U	UJ	C
1,3-DICHLOROBENZENE	541-73-1	280	510	110	ug/Kg	U	UJ	C
1,4-DICHLOROBENZENE	106-46-7	280	510	200	ug/Kg	U	UJ	C
2,4,5-TRICHLOROPHENOL	95-95-4	280	1500	250	ug/Kg	U	UJ	C
2,4,6-TRICHLOROPHENOL	88-06-2	820	1500	820	ug/Kg	U	R	Q
2,4-DICHLOROPHENOL	120-83-2	280	1500	200	ug/Kg	U	UJ	C
2,4-DIMETHYLPHENOL	105-67-9	820	1500	200	ug/Kg	U	UJ	C
2,4-DINITROPHENOL	51-28-5	820	3400	820	ug/Kg	U	R	Q
2,4-DINITROTOLUENE	121-14-2	280	2000	280	ug/Kg	U	R	D
2,6-DINITROTOLUENE	606-20-2	280	2000	210	ug/Kg	U	R	D
2-CHLORONAPHTHALENE	91-58-7	34	510	34	ug/Kg	U	UJ	C
2-CHLOROPHENOL	95-57-8	280	510	280	ug/Kg	U	UJ	C
2-METHYLNAPHTHALENE	91-57-6	42	68	34	ug/Kg	J D	J	C
2-METHYLPHENOL	95-48-7	820	2000	820	ug/Kg	U	R	Q
2-NITROANILINE	88-74-4	280	2000	93	ug/Kg	U	UJ	C
2-NITROPHENOL	88-75-5	280	510	280	ug/Kg	U	UJ	C
3,3'-DICHLOROBENZIDINE	91-94-1	820	1000	180	ug/Kg	U J	R	Q
3-METHYLPHENOL & 4-METHYL	65794-96-9	820	4100	200	ug/Kg	U	UJ	C
3-NITROANILINE	99-09-2	820	2000	160	ug/Kg	U	UJ	C
4,6-DINITRO-2-METHYLPHENOL	534-52-1	820	1500	820	ug/Kg	U	R	Q
4-BROMOPHENYL-PHENYLETHE	101-55-3	280	510	130	ug/Kg	U	UJ	C
4-CHLORO-3-METHYLPHENOL	59-50-7	280	1500	210	ug/Kg	U	UJ	C
4-CHLOROANILINE	106-47-8	280	1500	170	ug/Kg	U J	R	Q
4-CHLOROPHENYL-PHENYLETH	7005-72-3	280	510	130	ug/Kg	U	UJ	C
4-NITROANILINE	100-01-6	280	2000	270	ug/Kg	U	UJ	C
4-NITROPHENOL	100-02-7	820	3400	820	ug/Kg	U	R	Q
ACENAPHTHENE	83-32-9	34	68	34	ug/Kg	U	UJ	C

Analysis Method 8270C

ACENAPHTHYLENE	208-96-8	34	68	34	ug/Kg	U	UJ	C
ANTHRACENE	120-12-7	56	68	34	ug/Kg	J D	J	C
BENZO(A)ANTHRACENE	56-55-3	190	68	34	ug/Kg	D	J	C
BENZO(A)PYRENE	50-32-8	170	68	34	ug/Kg	D	J	C
BENZO(B)FLUORANTHENE	205-99-2	280	68	34	ug/Kg	D	J	C
BENZO(G,H,I)PERYLENE	191-24-2	130	68	34	ug/Kg	D	J	C
BENZO(K)FLUORANTHENE	207-08-9	140	68	34	ug/Kg	D M	J	C
BENZOIC ACID	65-85-0	3400	6700	3400	ug/Kg	U M	R	Q, L
BENZYL ALCOHOL	100-51-6	280	3400	210	ug/Kg	U	UJ	C
BIS(2-CHLOROETHOXY)METHAN	111-91-1	280	1000	220	ug/Kg	U	UJ	C
BIS(2-CHLOROETHYL) ETHER	111-44-4	34	1000	20	ug/Kg	U	UJ	C
BIS(2-CHLOROISOPROPYL) ETHE	108-60-1	280	1000	97	ug/Kg	U	UJ	C
BIS(2-ETHYLHEXYL) PHTHALAT	117-81-7	280	510	190	ug/Kg	U	UJ	C
BUTYLBENZYL PHTHALATE	85-68-7	280	510	100	ug/Kg	U	UJ	C
CARBAZOLE	86-74-8	280	510	280	ug/Kg	U	UJ	C
CHRYSENE	218-01-9	210	68	11	ug/Kg	D	J	C
DIBENZO(A,H)ANTHRACENE	53-70-3	34	68	34	ug/Kg	U	UJ	C
DIBENZOFURAN	132-64-9	34	510	34	ug/Kg	U	UJ	C
DIETHYL PHTHALATE	84-66-2	280	510	160	ug/Kg	U	UJ	C
DIMETHYL PHTHALATE	131-11-3	280	510	170	ug/Kg	U	UJ	C
DI-N-BUTYL PHTHALATE	84-74-2	280	510	150	ug/Kg	U	UJ	C
DI-N-OCTYL PHTHALATE	117-84-0	280	510	280	ug/Kg	U	UJ	C
FLUORANTHENE	206-44-0	450	68	34	ug/Kg	D J	J-	C, Q
FLUORENE	86-73-7	40	68	34	ug/Kg	J D	J	C
HEXACHLOROBENZENE	118-74-1	34	68	21	ug/Kg	U	UJ	C
HEXACHLOROBUTADIENE	87-68-3	280	510	280	ug/Kg	U	UJ	C
HEXACHLOROCYCLOPENTADIE	77-47-4	280	3400	280	ug/Kg	U	R	Q
HEXACHLOROETHANE	67-72-1	280	510	92	ug/Kg	U	UJ	C
INDENO(1,2,3-CD)PYRENE	193-39-5	110	68	34	ug/Kg	D	J	C
ISOPHORONE	78-59-1	280	510	130	ug/Kg	U	UJ	C
NAPHTHALENE	91-20-3	34	68	34	ug/Kg	U	UJ	C
NITROBENZENE	98-95-3	34	1000	22	ug/Kg	U	R	D

Analysis Method 8270C

N-NITROSO-DI-N-PROPYLAMINE	621-64-7	280	510	280	ug/Kg	U	UJ	C
N-NITROSODIPHENYLAMINE	86-30-6	280	510	210	ug/Kg	U	UJ	C
PENTACHLOROPHENOL	87-86-5	820	1500	820	ug/Kg	U	R	Q
PHENANTHRENE	85-01-8	300	68	34	ug/Kg	D J	J	C
PHENOL	108-95-2	280	510	280	ug/Kg	U J	UJ	C
PYRENE	129-00-0	300	68	34	ug/Kg	D	J	C

Analysis Method 8330

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES/WET

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,3,5-TRINITROBENZENE	99-35-4	0.25	0.25	0.02	mg/kg	U	UJ	C
1,3-DINITROBENZENE	99-65-0	0.25	0.25	0.05	mg/kg	U	UJ	C
2,4,6-TRINITROTOLUENE	118-96-7	0.25	0.25	0.02	mg/kg	U	UJ	C
2,4-DINITROTOLUENE	121-14-2	0.25	0.25	0.02	mg/kg	U	UJ	C
2,6-DINITROTOLUENE	606-20-2	0.25	0.25	0.03	mg/kg	U	UJ	C
2-AMINO-4,6-DINITROTOLUENE	35572-78-2	0.25	0.25	0.1	mg/kg	U	UJ	C
2-NITROTOLUENE	88-72-2	0.25	0.25	0.08	mg/kg	U	UJ	C
3-NITROTOLUENE	99-08-1	0.25	0.25	0.07	mg/kg	U	UJ	C
4-AMINO-2,6-DINITROTOLUENE	19406-51-0	0.25	0.25	0.02	mg/kg	U	UJ	C
4-NITROTOLUENE	99-99-0	0.25	0.25	0.08	mg/kg	U	UJ	C
HEXAHYDRO-1,3,5-TRINITRO-1,3,	121-82-4	0.25	0.25	0.04	mg/kg	U	UJ	C
METHYL-2,4,6-TRINITROPHENYL	479-45-8	0.25	0.25	0.05	mg/kg	U	UJ	C
NITROBENZENE	98-95-3	0.25	0.25	0.05	mg/kg	U	UJ	C
NITROGLYCERINE	55-63-0	0.5	0.5	0.13	mg/kg	U	UJ	C
OCTAHYDRO-TETRANITRO-1,3,5,	2691-41-0	0.25	0.25	0.03	mg/kg	U	UJ	C
PETN	78-11-5	0.5	0.5	0.16	mg/kg	U	UJ	C

Analysis Method 8330

Sample Name C78SS-001M-0001-SO **AnalysisType:** DL/WET

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
1,3,5-TRINITROBENZENE	99-35-4	0.057	0.25	0.02	mg/kg	J	J+	S, C
1,3-DINITROBENZENE	99-65-0	0.25	0.25	0.05	mg/kg	U	UJ	C
2,4,6-TRINITROTOLUENE	118-96-7	2	0.25	0.02	mg/kg		J+	S, C
2,4-DINITROTOLUENE	121-14-2	0.024	0.25	0.02	mg/kg	J PG	NJ+	S, C, *III
2,6-DINITROTOLUENE	606-20-2	0.25	0.25	0.03	mg/kg	U	UJ	C
2-AMINO-4,6-DINITROTOLUENE	35572-78-2	0.3	0.25	0.099	mg/kg		J+	S, C
2-NITROTOLUENE	88-72-2	0.25	0.25	0.079	mg/kg	U	UJ	C
3-NITROTOLUENE	99-08-1	0.25	0.25	0.069	mg/kg	U	UJ	C
4-AMINO-2,6-DINITROTOLUENE	19406-51-0	2	0.25	0.02	mg/kg	PG	NJ+	S, C, *III
4-NITROTOLUENE	99-99-0	0.25	0.25	0.079	mg/kg	U	UJ	C
HEXAHYDRO-1,3,5-TRINITRO-1,3,	121-82-4	0.25	0.25	0.04	mg/kg	U	UJ	C
METHYL-2,4,6-TRINITROPHENYL	479-45-8	0.25	0.25	0.05	mg/kg	U	UJ	C
NITROBENZENE	98-95-3	0.25	0.25	0.05	mg/kg	U	UJ	C
NITROGLYCERINE	55-63-0	0.5	0.5	0.13	mg/kg	U	UJ	C
OCTAHYDRO-TETRANITRO-1,3,5,	2691-41-0	0.25	0.25	0.03	mg/kg	U	UJ	C
PETN	78-11-5	0.5	0.5	0.16	mg/kg	U	UJ	C

Analysis Method 8330 MODIFIED

Sample Name C78SB-021M-0002-SO **AnalysisType:** DL/WET

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
NITROGUANIDINE	556-88-7	0.24	0.24	0.02	mg/kg	U	UJ	C

Sample Name C78SS-001M-0001-SO **AnalysisType:** DL/WET

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
NITROGUANIDINE	556-88-7	0.24	0.24	0.02	mg/kg	U	UJ	C

Analysis Method WS-WC-0050

Sample Name C78SB-021M-0002-SO **AnalysisType:** RES/TOT

Lab Sample Name: 240-5866-7 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
NITROCELLULOSE	9004-70-0	5	5	0.78	mg/kg	U	UJ	C

Sample Name C78SS-001M-0001-SO **AnalysisType:** RES/TOT

Lab Sample Name: 240-5866-41 **Validation Level:** IV

	CAS No	Result Value	LOQ	DL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Code
NITROCELLULOSE	9004-70-0	4	5	0.78	mg/kg	J	J	C

APPENDIX B

Sample Qualification Summary

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SB-021V-0002-SO	BROMOMETHANE	65	320	38	ug/Kg	UJ	C, S
C78SB-021M-0002-SO	1,3-DINITROBENZENE	0.25	0.25	0.05	mg/kg	UJ	C
C78SB-021V-0002-SO	1,1-DICHLOROETHANE	32	320	22	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	BROMOCHLOROMETHANE	32	320	17	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	CHLOROETHANE	130	320	79	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	VINYL CHLORIDE	32	320	23	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	METHYLENE CHLORIDE	270	320	100	ug/Kg	UJ	B, C, S
C78SB-021V-0002-SO	CARBON DISULFIDE	57	320	16	ug/Kg	J	C, S
C78SB-021V-0002-SO	BROMODICHLOROMETHANE	32	320	13	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,1-DICHLOROETHENE	32	320	23	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,2-DICHLOROPROPANE	13	320	11	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,1,2-TRICHLOROETHANE	32	320	16	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	TRICHLOROETHENE	32	320	13	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,1,2,2-TETRACHLOROETHANE	32	320	12	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	BROMOFORM	32	320	25	ug/Kg	UJ	C, S
C78SB-021M-0002-SO	4-NITROTOLUENE	0.25	0.25	0.08	mg/kg	UJ	C
C78SB-021M-0002-SO	NITROGUANIDINE	0.24	0.24	0.02	mg/kg	UJ	C
C78SB-021M-0002-SO	NITROCELLULOSE	5	5	0.78	mg/kg	UJ	C
C78SB-021M-0002-SO	3-NITROTOLUENE	0.25	0.25	0.07	mg/kg	UJ	C
C78SB-021M-0002-SO	N-NITROSO-DI-N-PROPYLAMINE	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	DIETHYL PHTHALATE	110	200	65	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2,4-DINITROPHENOL	320	1300	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	4,6-DINITRO-2-METHYLPHENOL	320	610	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	DIBENZO(A,H)ANTHRACENE	13	27	13	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	1,3-DICHLOROBENZENE	110	200	44	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BENZO(A)ANTHRACENE	710	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	2,6-DINITROTOLUENE	110	810	85	ug/Kg	R	D
C78SB-021M-0002-SO	3-METHYLPHENOL & 4-	320	1600	81	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BENZOIC ACID	1300	2700	1300	ug/Kg	R	L
C78SB-021M-0002-SO	HEXACHLOROETHANE	110	200	36	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	4-CHLOROPHENYL-PHENYLETHER	110	200	53	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	HEXACHLOROCYCLOPENTADIENE	110	1300	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	ISOPHORONE	110	200	53	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	ANTHRACENE	270	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	4-CHLORO-3-METHYLPHENOL	110	610	85	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	INDENO(1,2,3-CD)PYRENE	370	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	2,4-DICHLOROPHENOL	110	610	81	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2,4-DINITROTOLUENE	110	810	110	ug/Kg	R	D
C78SB-021M-0002-SO	PYRENE	1200	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	DIMETHYL PHTHALATE	110	200	69	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	DIBENZOFURAN	57	200	13	ug/Kg	J-	S, C
C78SB-021M-0002-SO	BENZO(A)PYRENE	620	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	BENZO(G,H,I)PERYLENE	420	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	DI-N-BUTYL PHTHALATE	110	200	61	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BENZO(B)FLUORANTHENE	870	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	FLUORANTHENE	1600	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	BENZO(K)FLUORANTHENE	370	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	ACENAPHTHYLENE	13	27	13	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	CHRYSENE	720	27	4.4	ug/Kg	J-	S
C78SB-021M-0002-SO	METHYL-2,4,6-	0.25	0.25	0.05	mg/kg	UJ	C
C78SB-021M-0002-SO	ACENAPHTHENE	13	27	13	ug/Kg	UJ	S, C

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SB-021M-0002-SO	3-NITROANILINE	320	810	65	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2,4,6-TRINITROTOLUENE	0.25	0.25	0.02	mg/kg	UJ	C
C78SB-021M-0002-SO	2,4-DINITROTOLUENE	0.25	0.25	0.02	mg/kg	UJ	C
C78SB-021M-0002-SO	HEXAHYDRO-1,3,5-TRINITRO-	0.25	0.25	0.04	mg/kg	UJ	C
C78SB-021M-0002-SO	4-AMINO-2,6-DINITROTOLUENE	0.25	0.25	0.02	mg/kg	UJ	C
C78SB-021M-0002-SO	2,4,5-TRICHLOROPHENOL	110	610	100	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2-AMINO-4,6-DINITROTOLUENE	0.25	0.25	0.1	mg/kg	UJ	C
C78SB-021M-0002-SO	2-CHLOROPHENOL	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	NITROGLYCERINE	0.5	0.5	0.13	mg/kg	UJ	C
C78SB-021M-0002-SO	2,6-DINITROTOLUENE	0.25	0.25	0.03	mg/kg	UJ	C
C78SB-021M-0002-SO	PETN	0.5	0.5	0.16	mg/kg	UJ	C
C78SB-021M-0002-SO	2-NITROTOLUENE	0.25	0.25	0.08	mg/kg	UJ	C
C78SB-021M-0002-SO	NITROBENZENE	0.25	0.25	0.05	mg/kg	UJ	C
C78SB-021M-0002-SO	OCTAHYDRO-TETRANITRO-1,3,5,7-	0.25	0.25	0.03	mg/kg	UJ	C
C78SB-021M-0002-SO	2-NITROANILINE	110	810	37	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	PHENANTHRENE	710	27	13	ug/Kg	J-	S
C78SB-021M-0002-SO	BUTYLBENZYL PHTHALATE	110	200	40	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	N-NITROSODIPHENYLAMINE	110	200	85	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	FLUORENE	45	27	13	ug/Kg	J-	S, C
C78SB-021M-0002-SO	CARBAZOLE	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	HEXACHLOROBUTADIENE	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	NITROBENZENE	13	400	8.9	ug/Kg	R	D
C78SB-021M-0002-SO	2,4,6-TRICHLOROPHENOL	320	610	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2-NITROPHENOL	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	NAPHTHALENE	130	27	13	ug/Kg	J-	S, C
C78SB-021M-0002-SO	2-METHYLNAPHTHALENE	200	27	13	ug/Kg	J-	S, C
C78SB-021M-0002-SO	2-CHLORONAPHTHALENE	13	200	13	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	3,3'-DICHLOROBENZIDINE	320	400	73	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2-METHYLPHENOL	320	810	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	1,2-DICHLOROBENZENE	110	200	39	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	PENTACHLOROPHENOL	320	610	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	GAMMA-CHLORDANE	6.8	17	4.2	ug/Kg	UJ	C
C78SB-021M-0002-SO	SELENIUM	0.7	0.39	0.016	mg/Kg	J-	Q
C78SB-021M-0002-SO	LEAD	60	1.2	0.28	mg/Kg	J-	A
C78SB-021M-0002-SO	ENDOSULFAN SULFATE	13	30	8.8	ug/Kg	UJ	C
C78SB-021M-0002-SO	ALDRIN	13	40	12	ug/Kg	UJ	C
C78SB-021M-0002-SO	ALPHA-BHC	13	25	7.4	ug/Kg	UJ	C
C78SB-021M-0002-SO	BETA-BHC	13	35	11	ug/Kg	UJ	C
C78SB-021M-0002-SO	DELTA-BHC	13	40	12	ug/Kg	UJ	C
C78SB-021M-0002-SO	ENDOSULFAN II	13	25	8.3	ug/Kg	UJ	C
C78SB-021M-0002-SO	4,4'-DDT	6.8	20	6.3	ug/Kg	UJ	C
C78SB-021M-0002-SO	1,2,4-TRICHLOROBENZENE	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	HEPTACHLOR EPOXIDE	13	25	8.1	ug/Kg	UJ	C
C78SB-021M-0002-SO	CALCIUM	6200	160	32	mg/Kg	J-	Q
C78SB-021M-0002-SO	ENDRIN KETONE	6.8	20	6.3	ug/Kg	UJ	C
C78SB-021M-0002-SO	ANTIMONY	0.37	0.16	0.049	mg/Kg	J-	E, Q
C78SB-021M-0002-SO	BARIUM	48	0.39	0.1	mg/Kg	J-	A
C78SB-021M-0002-SO	COPPER	11	0.32	0.087	mg/Kg	J-	Q
C78SB-021M-0002-SO	4-CHLOROANILINE	110	610	69	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	ALPHA-CHLORDANE	13	30	9.5	ug/Kg	UJ	C
C78SB-021M-0002-SO	4-NITROANILINE	110	810	110	ug/Kg	UJ	S, C

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SB-021M-0002-SO	4-NITROPHENOL	320	1300	320	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BENZYL ALCOHOL	110	1300	85	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	4-BROMOPHENYL-PHENYLETHER	110	200	53	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	1,4-DICHLOROBENZENE	110	200	81	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	AROCLOR 1016	25	66	21	ug/Kg	UJ	C
C78SB-021M-0002-SO	BIS(2-CHLOROISOPROPYL) ETHER	110	400	38	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	PHENOL	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BIS(2-CHLOROETHYL) ETHER	13	400	8.1	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BIS(2-CHLOROETHOXY)METHANE	110	400	89	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	BIS(2-ETHYLHEXYL) PHTHALATE	110	200	77	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	DI-N-OCTYL PHTHALATE	110	200	110	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	HEXACHLOROBENZENE	13	27	8.5	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	2,4-DIMETHYLPHENOL	320	610	81	ug/Kg	UJ	S, C
C78SB-021M-0002-SO	TOXAPHENE	200	680	190	ug/Kg	UJ	C
C78SB-021M-0002-SO	GAMMA-BHC	13	25	7.5	ug/Kg	UJ	C
C78SB-021M-0002-SO	DIELDRIN	6.8	17	4.7	ug/Kg	UJ	C
C78SB-021M-0002-SO	ENDRIN	6.8	17	5	ug/Kg	UJ	C
C78SB-021M-0002-SO	METHOXYCHLOR	17	50	15	ug/Kg	NJ+	C, S, *III
C78SB-021M-0002-SO	4,4'-DDD	6.8	20	6.2	ug/Kg	UJ	C
C78SB-021M-0002-SO	4,4'-DDE	6.8	17	3.9	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1242	25	40	13	ug/Kg	UJ	C
C78SB-021M-0002-SO	HEPTACHLOR	13	35	11	ug/Kg	UJ	C
C78SB-021M-0002-SO	1,3,5-TRINITROBENZENE	0.25	0.25	0.02	mg/kg	UJ	C
C78SB-021M-0002-SO	ENDOSULFAN I	6.8	17	5.2	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1260	25	55	17	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1254	25	55	17	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1221	25	50	16	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1232	25	45	14	ug/Kg	UJ	C
C78SB-021M-0002-SO	AROCLOR 1248	25	55	17	ug/Kg	UJ	C
C78SB-021M-0002-SO	ENDRIN ALDEHYDE	13	30	10	ug/Kg	UJ	C
C78SS-002-0001-SO	TRANS-1,3-DICHLOROPROPENE	24	240	19	ug/Kg	UJ	C, S
C78SS-002-0001-SO	2-HEXANONE	48	960	19	ug/Kg	UJ	C, S
C78SS-002-0001-SO	2-BUTANONE	96	960	41	ug/Kg	UJ	C, S
C78SS-002-0001-SO	ETHYL BENZENE	9.6	240	5.2	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CIS-1,3-DICHLOROPROPENE	9.6	240	7.6	ug/Kg	UJ	C, S
C78SS-001M-0001-SO	NITROGUANIDINE	0.24	0.24	0.02	mg/kg	UJ	C
C78SS-002-0001-SO	1,2-DIBROMOETHANE	24	240	9.6	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,2-DICHLOROETHANE	24	240	9.6	ug/Kg	UJ	C, S
C78SS-002-0001-SO	4-METHYL-2-PENTANONE	96	960	46	ug/Kg	UJ	C, S
C78SS-002-0001-SO	TOLUENE	24	240	16	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CHLOROBENZENE	9.6	240	6.2	ug/Kg	UJ	C, S
C78SS-002-0001-SO	DIBROMOCHLOROMETHANE	24	240	12	ug/Kg	UJ	C, S
C78SS-002-0001-SO	STYRENE	9.6	240	5.4	ug/Kg	UJ	C, S
C78SS-001M-0001-SO	PETN	0.5	0.5	0.16	mg/kg	UJ	C
C78SS-001M-0001-SO	HEXAHYDRO-1,3,5-TRINITRO-	0.25	0.25	0.04	mg/kg	UJ	C
C78SS-001M-0001-SO	4-AMINO-2,6-DINITROTOLUENE	2	0.25	0.02	mg/kg	NJ+	S, C, *III
C78SS-001M-0001-SO	OCTAHYDRO-TETRANITRO-1,3,5,7-	0.25	0.25	0.03	mg/kg	UJ	C
C78SS-001M-0001-SO	2-AMINO-4,6-DINITROTOLUENE	0.3	0.25	0.099	mg/kg	J+	S, C
C78SS-001M-0001-SO	METHYL-2,4,6-	0.25	0.25	0.05	mg/kg	UJ	C
C78SS-001M-0001-SO	NITROGLYCERINE	0.5	0.5	0.13	mg/kg	UJ	C
C78SS-001M-0001-SO	NITROCELLULOSE	4	5	0.78	mg/kg	J	C

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SS-001M-0001-SO	2-NITROTOLUENE	0.25	0.25	0.079	mg/kg	UJ	C
C78SS-001M-0001-SO	NITROBENZENE	0.25	0.25	0.05	mg/kg	UJ	C
C78SS-001M-0001-SO	3-NITROTOLUENE	0.25	0.25	0.069	mg/kg	UJ	C
C78SS-001M-0001-SO	1,3,5-TRINITROBENZENE	0.057	0.25	0.02	mg/kg	J+	S, C
C78SS-001M-0001-SO	1,3-DINITROBENZENE	0.25	0.25	0.05	mg/kg	UJ	C
C78SS-001M-0001-SO	4-NITROTOLUENE	0.25	0.25	0.079	mg/kg	UJ	C
C78SS-002-0001-SO	CIS-1,2-DICHLOROETHENE	9.6	240	6.6	ug/Kg	UJ	C, S
C78SS-001M-0001-SO	2,6-DINITROTOLUENE	0.25	0.25	0.03	mg/kg	UJ	C
C78SS-002-0001-SO	1,1,2,2-TETRACHLOROETHANE	24	240	8.6	ug/Kg	UJ	C, S
C78SS-002-0001-SO	TETRACHLOROETHENE	24	240	12	ug/Kg	UJ	C, S
C78SS-002-0001-SO	BROMOFORM	24	240	18	ug/Kg	UJ	C, S
C78SS-002-0001-SO	BROMODICHLOROMETHANE	24	240	9.5	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,1-DICHLOROETHANE	24	240	16	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,1-DICHLOROETHENE	24	240	17	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,2-DICHLOROPROPANE	9.6	240	7.9	ug/Kg	UJ	C, S
C78SS-002-0001-SO	METHYLENE CHLORIDE	170	240	74	ug/Kg	UJ	B, C, S
C78SS-002-0001-SO	TRICHLOROETHENE	24	240	9.3	ug/Kg	UJ	C, S
C78SS-002-0001-SO	VINYL CHLORIDE	24	240	17	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,1,2-TRICHLOROETHANE	24	240	12	ug/Kg	UJ	C, S
C78SS-002-0001-SO	ACETONE	190	960	160	ug/Kg	UJ	C, S
C78SS-001M-0001-SO	3-NITROANILINE	820	2000	160	ug/Kg	UJ	C
C78SS-002-0001-SO	TRANS-1,2-DICHLOROETHENE	24	240	8.9	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CARBON DISULFIDE	24	240	12	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CARBON TETRACHLORIDE	9.6	240	6.2	ug/Kg	UJ	C, S
C78SS-002-0001-SO	TOTAL XYLENES	29	480	7.8	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CHLOROFORM	24	240	8.5	ug/Kg	UJ	C, S
C78SS-002-0001-SO	BENZENE	24	240	12	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,1,1-TRICHLOROETHANE	20	240	20	ug/Kg	UJ	C, S
C78SS-002-0001-SO	BROMOMETHANE	48	240	28	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CHLOROMETHANE	24	240	13	ug/Kg	UJ	C, S
C78SS-002-0001-SO	BROMOCHLOROMETHANE	24	240	13	ug/Kg	UJ	C, S
C78SS-002-0001-SO	CHLOROETHANE	96	240	59	ug/Kg	UJ	C, S
C78SS-002-0001-SO	1,2-DICHLOROETHENE (TOTAL)	7.9	480	7.9	ug/Kg	UJ	C, S
C78SS-001M-0001-SO	ACENAPHTHYLENE	34	68	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	4,6-DINITRO-2-METHYLPHENOL	820	1500	820	ug/Kg	R	Q
C78SS-001M-0001-SO	DIBENZOFURAN	34	510	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	BENZO(G,H,I)PERYLENE	130	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	INDENO(1,2,3-CD)PYRENE	110	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	BENZO(B)FLUORANTHENE	280	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	PYRENE	300	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	BENZO(K)FLUORANTHENE	140	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	2,4-DINITROTOLUENE	280	2000	280	ug/Kg	R	D
C78SS-001M-0001-SO	CHRYSENE	210	68	11	ug/Kg	J	C
C78SS-001M-0001-SO	BENZO(A)PYRENE	170	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	2,4-DINITROTOLUENE	0.024	0.25	0.02	mg/kg	NJ+	S, C, *III
C78SS-001M-0001-SO	FLUORANTHENE	450	68	34	ug/Kg	J-	C, Q
C78SS-001M-0001-SO	BIS(2-CHLOROETHOXY)METHANE	280	1000	220	ug/Kg	UJ	C
C78SS-001M-0001-SO	BENZYL ALCOHOL	280	3400	210	ug/Kg	UJ	C
C78SS-001M-0001-SO	4-BROMOPHENYL-PHENYLETHER	280	510	130	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,4-DIMETHYLPHENOL	820	1500	200	ug/Kg	UJ	C
C78SS-001M-0001-SO	1,4-DICHLOROBENZENE	280	510	200	ug/Kg	UJ	C

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SS-001M-0001-SO	4-CHLOROANILINE	280	1500	170	ug/Kg	R	Q
C78SS-001M-0001-SO	BIS(2-CHLOROISOPROPYL) ETHER	280	1000	97	ug/Kg	UJ	C
C78SS-001M-0001-SO	DIMETHYL PHTHALATE	280	510	170	ug/Kg	UJ	C
C78SS-001M-0001-SO	BIS(2-CHLOROETHYL) ETHER	34	1000	20	ug/Kg	UJ	C
C78SS-001M-0001-SO	DIBENZO(A,H)ANTHRACENE	34	68	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	BIS(2-ETHYLHEXYL) PHTHALATE	280	510	190	ug/Kg	UJ	C
C78SS-001M-0001-SO	DI-N-OCTYL PHTHALATE	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	HEXACHLOROBENZENE	34	68	21	ug/Kg	UJ	C
C78SS-001M-0001-SO	ANTHRACENE	56	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	1,2,4-TRICHLOROBENZENE	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,4-DICHLOROPHENOL	280	1500	200	ug/Kg	UJ	C
C78SS-001M-0001-SO	PHENOL	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	2-CHLORONAPHTHALENE	34	510	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,4-DINITROPHENOL	820	3400	820	ug/Kg	R	Q
C78SS-001M-0001-SO	HEXACHLOROBUTADIENE	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	PENTACHLOROPHENOL	820	1500	820	ug/Kg	R	Q
C78SS-001M-0001-SO	2,4,6-TRICHLOROPHENOL	820	1500	820	ug/Kg	R	Q
C78SS-001M-0001-SO	2-NITROANILINE	280	2000	93	ug/Kg	UJ	C
C78SS-001M-0001-SO	2-NITROPHENOL	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	FLUORENE	40	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	2-METHYLNAPHTHALENE	42	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	N-NITROSODIPHENYLAMINE	280	510	210	ug/Kg	UJ	C
C78SS-001M-0001-SO	3,3'-DICHLOROBENZIDINE	820	1000	180	ug/Kg	R	Q
C78SS-001M-0001-SO	2-METHYLPHENOL	820	2000	820	ug/Kg	R	Q
C78SS-001M-0001-SO	1,2-DICHLOROBENZENE	280	510	99	ug/Kg	UJ	C
C78SS-001M-0001-SO	2-CHLOROPHENOL	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,4,5-TRICHLOROPHENOL	280	1500	250	ug/Kg	UJ	C
C78SS-001M-0001-SO	NITROBENZENE	34	1000	22	ug/Kg	R	D
C78SS-001M-0001-SO	NAPHTHALENE	34	68	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	4-CHLOROPHENYL-PHENYLETHER	280	510	130	ug/Kg	UJ	C
C78SS-001M-0001-SO	1,3-DICHLOROBENZENE	280	510	110	ug/Kg	UJ	C
C78SS-001M-0001-SO	BENZO(A)ANTHRACENE	190	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	4-CHLORO-3-METHYLPHENOL	280	1500	210	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,6-DINITROTOLUENE	280	2000	210	ug/Kg	R	D
C78SS-001M-0001-SO	N-NITROSO-DI-N-PROPYLAMINE	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	3-METHYLPHENOL & 4-	820	4100	200	ug/Kg	UJ	C
C78SS-001M-0001-SO	CARBAZOLE	280	510	280	ug/Kg	UJ	C
C78SS-001M-0001-SO	HEXACHLOROETHANE	280	510	92	ug/Kg	UJ	C
C78SS-001M-0001-SO	2,4,6-TRINITROTOLUENE	2	0.25	0.02	mg/kg	J+	S, C
C78SS-001M-0001-SO	HEXACHLOROCYCLOPENTADIENE	280	3400	280	ug/Kg	R	Q
C78SS-001M-0001-SO	ISOPHORONE	280	510	130	ug/Kg	UJ	C
C78SS-001M-0001-SO	ACENAPHTHENE	34	68	34	ug/Kg	UJ	C
C78SS-001M-0001-SO	DIETHYL PHTHALATE	280	510	160	ug/Kg	UJ	C
C78SS-001M-0001-SO	DI-N-BUTYL PHTHALATE	280	510	150	ug/Kg	UJ	C
C78SS-001M-0001-SO	PHENANTHRENE	300	68	34	ug/Kg	J	C
C78SS-001M-0001-SO	BUTYLBENZYL PHTHALATE	280	510	100	ug/Kg	UJ	C
C78SS-001M-0001-SO	BENZOIC ACID	3400	6700	3400	ug/Kg	R	Q, L
C78SS-001M-0001-SO	4-NITROPHENOL	820	3400	820	ug/Kg	R	Q
C78SS-001M-0001-SO	ANTIMONY	1.3	0.82	0.25	mg/Kg	J-	E, Q
C78SS-001M-0001-SO	LEAD	120	1.2	0.29	mg/Kg	J-	A
C78SS-001M-0001-SO	BARIUM	82	0.41	0.11	mg/Kg	J-	A

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SS-001M-0001-SO	COPPER	34	0.33	0.09	mg/Kg	J-	Q
C78SS-001M-0001-SO	CALCIUM	3900	160	33	mg/Kg	J-	Q
C78SS-001M-0001-SO	AROCLOR 1254	550	280	87	ug/Kg	J	C
C78SS-001M-0001-SO	4,4'-DDE	6.8	17	4	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDRIN ALDEHYDE	14	31	10	ug/Kg	UJ	C
C78SS-001M-0001-SO	HEPTACHLOR	14	36	11	ug/Kg	UJ	C
C78SS-001M-0001-SO	TOXAPHENE	200	680	190	ug/Kg	UJ	C
C78SS-001M-0001-SO	METHOXYCHLOR	34	51	15	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1260	130	280	87	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDRIN	6.8	17	5.1	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1221	130	250	82	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1232	130	230	71	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1248	130	280	87	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1016	130	330	110	ug/Kg	UJ	C
C78SS-001M-0001-SO	AROCLOR 1242	130	200	66	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDOSULFAN I	6.8	17	5.3	ug/Kg	UJ	C
C78SS-001M-0001-SO	DELTA-BHC	14	41	12	ug/Kg	UJ	C
C78SS-001M-0001-SO	SELENIUM	0.91	0.41	0.017	mg/Kg	J-	Q
C78SS-001M-0001-SO	HEPTACHLOR EPOXIDE	14	25	8.2	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDOSULFAN SULFATE	14	31	8.9	ug/Kg	UJ	C
C78SS-001M-0001-SO	ALDRIN	14	41	12	ug/Kg	UJ	C
C78SS-001M-0001-SO	4,4'-DDD	6.8	20	6.3	ug/Kg	UJ	C
C78SS-001M-0001-SO	BETA-BHC	14	36	11	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDOSULFAN II	14	25	8.4	ug/Kg	UJ	C
C78SS-001M-0001-SO	4,4'-DDT	6.8	20	6.4	ug/Kg	UJ	C
C78SS-001M-0001-SO	ALPHA-CHLORDANE	14	31	9.6	ug/Kg	UJ	C
C78SS-001M-0001-SO	GAMMA-CHLORDANE	6.8	17	4.3	ug/Kg	UJ	C
C78SS-001M-0001-SO	ENDRIN KETONE	6.8	20	6.4	ug/Kg	UJ	C
C78SS-001M-0001-SO	GAMMA-BHC	14	25	7.5	ug/Kg	UJ	C
C78SS-001M-0001-SO	DIELDRIN	6.8	17	4.8	ug/Kg	UJ	C
C78SS-001M-0001-SO	ALPHA-BHC	14	25	7.4	ug/Kg	UJ	C
C78SS-001M-0001-SO	4-NITROANILINE	280	2000	270	ug/Kg	UJ	C
C78SB-021V-0002-SO	CHLOROBENZENE	13	320	8.3	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	DIBROMOCHLOROMETHANE	32	320	16	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	TETRACHLOROETHENE	32	320	16	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	TOTAL XYLENES	240	650	10	ug/Kg	J	C, S
C78SB-021V-0002-SO	CIS-1,2-DICHLOROETHENE	13	320	8.9	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	4-METHYL-2-PENTANONE	130	1300	62	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,2-DICHLOROETHANE	32	320	13	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,2-DICHLOROETHENE (TOTAL)	11	650	11	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	CARBON TETRACHLORIDE	13	320	8.3	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	ACETONE	260	1300	220	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	CHLOROFORM	32	320	11	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	BENZENE	32	320	16	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	TRANS-1,2-DICHLOROETHENE	32	320	12	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	TOLUENE	96	320	22	ug/Kg	J	C, S
C78SB-021V-0002-SO	2-HEXANONE	65	1300	26	ug/Kg	UJ	C
C78SB-021V-0002-SO	2-BUTANONE	130	1300	56	ug/Kg	UJ	C
C78SB-021V-0002-SO	ETHYL BENZENE	42	320	7	ug/Kg	J	C, S
C78SB-021V-0002-SO	STYRENE	13	320	7.2	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	CIS-1,3-DICHLOROPROPENE	13	320	10	ug/Kg	UJ	C, L, S

Sample	Analyte	Result	LOQ	DL	Units	Qualifier	Code
C78SB-021V-0002-SO	TRANS-1,3-DICHLOROPROPENE	32	320	26	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,2-DIBROMOETHANE	32	320	13	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	CHLOROMETHANE	32	320	18	ug/Kg	UJ	C, S
C78SB-021V-0002-SO	1,1,1-TRICHLOROETHANE	27	320	27	ug/Kg	UJ	C, S

APPENDIX C

Primary/Field Duplicate Sample Comparisons

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SB-021M-0002-SO	ALUMINUM	3800	7.9	mg/Kg		C78SB-022M-0002-SO	5500	95		37	N/A
C78SB-021M-0002-SO	ANTIMONY	0.37	0.16	mg/Kg	J-	C78SB-022M-0002-SO	1.4	1.9	U	N/A	Yes
C78SB-021M-0002-SO	ARSENIC	15	0.39	mg/Kg		C78SB-022M-0002-SO	14	0.47		7	N/A
C78SB-021M-0002-SO	BARIUM	48	0.39	mg/Kg	J-	C78SB-022M-0002-SO	55	0.47		14	N/A
C78SB-021M-0002-SO	BERYLLIUM	0.57	0.079	mg/Kg		C78SB-022M-0002-SO	0.58	0.095		2	N/A
C78SB-021M-0002-SO	CADMIUM	0.48	0.16	mg/Kg		C78SB-022M-0002-SO	0.43	0.19		N/A	Yes
C78SB-021M-0002-SO	CALCIUM	6200	160	mg/Kg	J-	C78SB-022M-0002-SO	12000	190		64	N/A
C78SB-021M-0002-SO	CHROMIUM	21	0.39	mg/Kg		C78SB-022M-0002-SO	12	0.47		55	N/A
C78SB-021M-0002-SO	COBALT	4.5	0.079	mg/Kg		C78SB-022M-0002-SO	5.2	0.095		14	N/A
C78SB-021M-0002-SO	COPPER	11	0.32	mg/Kg	J-	C78SB-022M-0002-SO	12	0.38		9	N/A
C78SB-021M-0002-SO	IRON	15000	39	mg/Kg		C78SB-022M-0002-SO	15000	47		0	N/A
C78SB-021M-0002-SO	LEAD	60	1.2	mg/Kg	J-	C78SB-022M-0002-SO	34	1.4		55	N/A
C78SB-021M-0002-SO	MAGNESIUM	1200	79	mg/Kg		C78SB-022M-0002-SO	1600	95		29	N/A
C78SB-021M-0002-SO	MANGANESE	450	2	mg/Kg		C78SB-022M-0002-SO	500	2.4		11	N/A
C78SB-021M-0002-SO	NICKEL	15	0.39	mg/Kg		C78SB-022M-0002-SO	12	0.47		22	N/A
C78SB-021M-0002-SO	POTASSIUM	390	79	mg/Kg		C78SB-022M-0002-SO	530	95		N/A	No
C78SB-021M-0002-SO	SELENIUM	0.7	0.39	mg/Kg	J-	C78SB-022M-0002-SO	0.8	0.47		N/A	Yes
C78SB-021M-0002-SO	SILVER	0.064	0.093	mg/Kg	J	C78SB-022M-0002-SO	0.043	0.096	J	N/A	Yes
C78SB-021M-0002-SO	SODIUM	45	79	mg/Kg	J	C78SB-022M-0002-SO	47	95	J	N/A	Yes
C78SB-021M-0002-SO	THALLIUM	0.085	0.16	mg/Kg	J	C78SB-022M-0002-SO	0.096	0.19	J	N/A	Yes
C78SB-021M-0002-SO	VANADIUM	6.4	0.39	mg/Kg		C78SB-022M-0002-SO	9	0.47		34	N/A
C78SB-021M-0002-SO	ZINC	140	3.2	mg/Kg		C78SB-022M-0002-SO	170	3.8		19	N/A
C78SB-021M-0002-SO	MERCURY	0.032	0.063	mg/Kg	J	C78SB-022M-0002-SO	0.053	0.07	J	N/A	Yes
C78SB-021M-0002-SO	4,4'-DDD	6.8	20	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	20	U	N/A	Yes
C78SB-021M-0002-SO	4,4'-DDE	6.8	17	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	17	U	N/A	Yes
C78SB-021M-0002-SO	4,4'-DDT	6.8	20	ug/Kg	UJ	C78SB-022M-0002-SO	6.8	20	J	N/A	Yes
C78SB-021M-0002-SO	ALDRIN	13	40	ug/Kg	UJ	C78SB-022M-0002-SO	13	40	U	N/A	Yes
C78SB-021M-0002-SO	ALPHA-BHC	13	25	ug/Kg	UJ	C78SB-022M-0002-SO	13	25	U	N/A	Yes
C78SB-021M-0002-SO	ALPHA-CHLORDANE	13	30	ug/Kg	UJ	C78SB-022M-0002-SO	13	30	U	N/A	Yes
C78SB-021M-0002-SO	BETA-BHC	13	35	ug/Kg	UJ	C78SB-022M-0002-SO	13	35	U	N/A	Yes
C78SB-021M-0002-SO	DELTA-BHC	13	40	ug/Kg	UJ	C78SB-022M-0002-SO	13	40	U	N/A	Yes
C78SB-021M-0002-SO	DIELDRIN	6.8	17	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	17	U	N/A	Yes
C78SB-021M-0002-SO	ENDOSULFAN I	6.8	17	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	17	U	N/A	Yes
C78SB-021M-0002-SO	ENDOSULFAN II	13	25	ug/Kg	UJ	C78SB-022M-0002-SO	13	25	U	N/A	Yes
C78SB-021M-0002-SO	ENDOSULFAN SULFATE	13	30	ug/Kg	UJ	C78SB-022M-0002-SO	13	30	U	N/A	Yes
C78SB-021M-0002-SO	ENDRIN	6.8	17	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	17	U	N/A	Yes
C78SB-021M-0002-SO	ENDRIN ALDEHYDE	13	30	ug/Kg	UJ	C78SB-022M-0002-SO	13	30	U	N/A	Yes
C78SB-021M-0002-SO	ENDRIN KETONE	6.8	20	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	20	U	N/A	Yes
C78SB-021M-0002-SO	GAMMA-BHC	13	25	ug/Kg	UJ	C78SB-022M-0002-SO	13	25	U	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SB-021M-0002-SO	GAMMA-CHLORDANE	6.8	17	ug/Kg	UJ	C78SB-022M-0002-SO	6.7	17	U	N/A	Yes
C78SB-021M-0002-SO	HEPTACHLOR	13	35	ug/Kg	UJ	C78SB-022M-0002-SO	13	35	U	N/A	Yes
C78SB-021M-0002-SO	HEPTACHLOR EPOXIDE	13	25	ug/Kg	UJ	C78SB-022M-0002-SO	13	25	U	N/A	Yes
C78SB-021M-0002-SO	METHOXYCHLOR	17	50	ug/Kg	NJ+	C78SB-022M-0002-SO	33	50	U	N/A	Yes
C78SB-021M-0002-SO	TOXAPHENE	200	680	ug/Kg	UJ	C78SB-022M-0002-SO	200	670	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1016	25	66	ug/Kg	UJ	C78SB-022M-0002-SO	25	65	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1221	25	50	ug/Kg	UJ	C78SB-022M-0002-SO	25	50	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1232	25	45	ug/Kg	UJ	C78SB-022M-0002-SO	25	45	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1242	25	40	ug/Kg	UJ	C78SB-022M-0002-SO	25	40	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1248	25	55	ug/Kg	UJ	C78SB-022M-0002-SO	25	55	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1254	25	55	ug/Kg	UJ	C78SB-022M-0002-SO	25	55	U	N/A	Yes
C78SB-021M-0002-SO	AROCLOR 1260	25	55	ug/Kg	UJ	C78SB-022M-0002-SO	25	55	U	N/A	Yes
C78SB-021M-0002-SO	1,2,4-TRICHLOROBENZENE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	1,2-DICHLOROBENZENE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	1,3-DICHLOROBENZENE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	1,4-DICHLOROBENZENE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	2,4,5-TRICHLOROPHENOL	110	610	ug/Kg	UJ	C78SB-022M-0002-SO	270	1500	U	N/A	Yes
C78SB-021M-0002-SO	2,4,6-TRICHLOROPHENOL	320	610	ug/Kg	UJ	C78SB-022M-0002-SO	810	1500	U	N/A	Yes
C78SB-021M-0002-SO	2,4-DICHLOROPHENOL	110	610	ug/Kg	UJ	C78SB-022M-0002-SO	270	1500	U	N/A	Yes
C78SB-021M-0002-SO	2,4-DIMETHYLPHENOL	320	610	ug/Kg	UJ	C78SB-022M-0002-SO	810	1500	U	N/A	Yes
C78SB-021M-0002-SO	2,4-DINITROPHENOL	320	1300	ug/Kg	UJ	C78SB-022M-0002-SO	810	3300	U	N/A	Yes
C78SB-021M-0002-SO	2,4-DINITROTOLUENE	110	810	ug/Kg	R	C78SB-022M-0002-SO	270	2000	U	N/A	N/A
C78SB-021M-0002-SO	2,6-DINITROTOLUENE	110	810	ug/Kg	R	C78SB-022M-0002-SO	270	2000	U	N/A	N/A
C78SB-021M-0002-SO	2-CHLORONAPHTHALENE	13	200	ug/Kg	UJ	C78SB-022M-0002-SO	33	510	U	N/A	Yes
C78SB-021M-0002-SO	2-CHLOROPHENOL	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	2-METHYLNAPHTHALENE	200	27	ug/Kg	J-	C78SB-022M-0002-SO	340	68		N/A	No
C78SB-021M-0002-SO	2-METHYLPHENOL	320	810	ug/Kg	UJ	C78SB-022M-0002-SO	810	2000	U	N/A	Yes
C78SB-021M-0002-SO	2-NITROANILINE	110	810	ug/Kg	UJ	C78SB-022M-0002-SO	270	2000	U	N/A	Yes
C78SB-021M-0002-SO	2-NITROPHENOL	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	3,3'-DICHLOROBENZIDINE	320	400	ug/Kg	UJ	C78SB-022M-0002-SO	810	1000	U	N/A	Yes
C78SB-021M-0002-SO	3/4-METHYLPHENOL	320	1600	ug/Kg	UJ	C78SB-022M-0002-SO	810	4100	U	N/A	Yes
C78SB-021M-0002-SO	3-NITROANILINE	320	810	ug/Kg	UJ	C78SB-022M-0002-SO	810	2000	U	N/A	Yes
C78SB-021M-0002-SO	4,6-DINITRO-2-METHYLPHENOL	320	610	ug/Kg	UJ	C78SB-022M-0002-SO	810	1500	U	N/A	Yes
C78SB-021M-0002-SO	4-BROMOPHENYL-PHENYLETHER	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	4-CHLORO-3-METHYLPHENOL	110	610	ug/Kg	UJ	C78SB-022M-0002-SO	270	1500	U	N/A	Yes
C78SB-021M-0002-SO	4-CHLOROANILINE	110	610	ug/Kg	UJ	C78SB-022M-0002-SO	270	1500	U	N/A	Yes
C78SB-021M-0002-SO	4-CHLOROPHENYL-PHENYLETHER	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	4-NITROANILINE	110	810	ug/Kg	UJ	C78SB-022M-0002-SO	270	2000	U	N/A	Yes
C78SB-021M-0002-SO	4-NITROPHENOL	320	1300	ug/Kg	UJ	C78SB-022M-0002-SO	810	3300	U	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SB-021M-0002-SO	ACENAPHTHENE	13	27	ug/Kg	UJ	C78SB-022M-0002-SO	33	68	U	N/A	Yes
C78SB-021M-0002-SO	ACENAPHTHYLENE	13	27	ug/Kg	UJ	C78SB-022M-0002-SO	54	68	J	N/A	Yes
C78SB-021M-0002-SO	ANTHRACENE	270	27	ug/Kg	J-	C78SB-022M-0002-SO	250	68		N/A	Yes
C78SB-021M-0002-SO	BENZO(A)ANTHRACENE	710	27	ug/Kg	J-	C78SB-022M-0002-SO	1300	68		59	N/A
C78SB-021M-0002-SO	BENZO(A)PYRENE	620	27	ug/Kg	J-	C78SB-022M-0002-SO	1300	68		71	N/A
C78SB-021M-0002-SO	BENZO(B)FLUORANTHENE	870	27	ug/Kg	J-	C78SB-022M-0002-SO	2000	68		79	N/A
C78SB-021M-0002-SO	BENZO(G,H,I)PERYLENE	420	27	ug/Kg	J-	C78SB-022M-0002-SO	950	68		77	N/A
C78SB-021M-0002-SO	BENZO(K)FLUORANTHENE	370	27	ug/Kg	J-	C78SB-022M-0002-SO	820	68		76	N/A
C78SB-021M-0002-SO	BENZOIC ACID	1300	2700	ug/Kg	R	C78SB-022M-0002-SO	3400	6700	U	N/A	N/A
C78SB-021M-0002-SO	BENZYL ALCOHOL	110	1300	ug/Kg	UJ	C78SB-022M-0002-SO	270	3300	U	N/A	Yes
C78SB-021M-0002-SO	BIS(2-CHLOROETHOXY)METHANE	110	400	ug/Kg	UJ	C78SB-022M-0002-SO	270	1000	U	N/A	Yes
C78SB-021M-0002-SO	BIS(2-CHLOROETHYL) ETHER	13	400	ug/Kg	UJ	C78SB-022M-0002-SO	33	1000	U	N/A	Yes
C78SB-021M-0002-SO	BIS(2-CHLOROISOPROPYL) ETHER	110	400	ug/Kg	UJ	C78SB-022M-0002-SO	270	1000	U	N/A	Yes
C78SB-021M-0002-SO	BIS(2-ETHYLHEXYL) PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	BUTYLBENZYL PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	CARBAZOLE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	CHRYSENE	720	27	ug/Kg	J-	C78SB-022M-0002-SO	1500	68		70	N/A
C78SB-021M-0002-SO	DIBENZO(A,H)ANTHRACENE	13	27	ug/Kg	UJ	C78SB-022M-0002-SO	33	68	U	N/A	Yes
C78SB-021M-0002-SO	DIBENZOFURAN	57	200	ug/Kg	J-	C78SB-022M-0002-SO	99	510	J	N/A	Yes
C78SB-021M-0002-SO	DIETHYL PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	DIMETHYL PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	DI-N-BUTYL PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	DI-N-OCTYL PHTHALATE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	FLUORANTHENE	1600	27	ug/Kg	J-	C78SB-022M-0002-SO	3200	68		67	N/A
C78SB-021M-0002-SO	FLUORENE	45	27	ug/Kg	J-	C78SB-022M-0002-SO	69	68		N/A	Yes
C78SB-021M-0002-SO	HEXACHLOROBENZENE	13	27	ug/Kg	UJ	C78SB-022M-0002-SO	33	68	U	N/A	Yes
C78SB-021M-0002-SO	HEXACHLOROBUTADIENE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	HEXACHLOROCYCLOPENTADIENE	110	1300	ug/Kg	UJ	C78SB-022M-0002-SO	270	3300	U	N/A	Yes
C78SB-021M-0002-SO	HEXACHLOROETHANE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	INDENO(1,2,3-CD)PYRENE	370	27	ug/Kg	J-	C78SB-022M-0002-SO	850	68		79	N/A
C78SB-021M-0002-SO	ISOPHORONE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	NAPHTHALENE	130	27	ug/Kg	J-	C78SB-022M-0002-SO	240	68		N/A	No
C78SB-021M-0002-SO	NITROBENZENE	13	400	ug/Kg	R	C78SB-022M-0002-SO	33	1000	U	N/A	N/A
C78SB-021M-0002-SO	N-NITROSO-DI-N-PROPYLAMINE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	N-NITROSODIPHENYLAMINE	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	PENTACHLOROPHENOL	320	610	ug/Kg	UJ	C78SB-022M-0002-SO	810	1500	U	N/A	Yes
C78SB-021M-0002-SO	PHENANTHRENE	710	27	ug/Kg	J-	C78SB-022M-0002-SO	1100	68		43	N/A
C78SB-021M-0002-SO	PHENOL	110	200	ug/Kg	UJ	C78SB-022M-0002-SO	270	510	U	N/A	Yes
C78SB-021M-0002-SO	PYRENE	1200	27	ug/Kg	J-	C78SB-022M-0002-SO	2400	68		67	N/A

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SB-021M-0002-SO	1,3,5-TRINITROBENZENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	1,3-DINITROBENZENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	2,4,6-TRINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	2,4-DINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	2,6-DINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	2-AMINO-4,6-DINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	2-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	3-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	4-AMINO-2,6-DINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	4-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	RDX	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	Tetryl	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	NITROBENZENE	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	NITROGLYCERINE	0.5	0.5	mg/kg	UJ	C78SB-022M-0002-SO	0.49	0.49	U	N/A	Yes
C78SB-021M-0002-SO	HMX	0.25	0.25	mg/kg	UJ	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	PETN	0.5	0.5	mg/kg	UJ	C78SB-022M-0002-SO	0.49	0.49	U	N/A	Yes
C78SB-021M-0002-SO	NITROGUANIDINE	0.24	0.24	mg/kg	U	C78SB-022M-0002-SO	0.24	0.24	U	N/A	Yes
C78SB-021M-0002-SO	NITROCELLULOSE	5	5	mg/kg	U	C78SB-022M-0002-SO	0.8	5	J	N/A	Yes
C78SB-021V-0002-SO	1,1,1-TRICHLOROETHANE	27	320	ug/Kg	UJ	C78SB-022V-0002-SO	27	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,1,2,2-TETRACHLOROETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,1,2-TRICHLOROETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,1-DICHLOROETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,1-DICHLOROETHENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,2-DIBROMOETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,2-DICHLOROETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	1,2-DICHLOROETHENE (TOTAL)	11	650	ug/Kg	UJ	C78SB-022V-0002-SO	11	650	UJ	N/A	Yes
C78SB-021V-0002-SO	1,2-DICHLOROPROPANE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes
C78SB-021V-0002-SO	2-BUTANONE	130	1300	ug/Kg	UJ	C78SB-022V-0002-SO	130	1300	U	N/A	Yes
C78SB-021V-0002-SO	2-HEXANONE	65	1300	ug/Kg	UJ	C78SB-022V-0002-SO	65	1300	U	N/A	Yes
C78SB-021V-0002-SO	4-METHYL-2-PENTANONE	130	1300	ug/Kg	UJ	C78SB-022V-0002-SO	130	1300	UJ	N/A	Yes
C78SB-021V-0002-SO	ACETONE	260	1300	ug/Kg	UJ	C78SB-022V-0002-SO	260	1300	UJ	N/A	Yes
C78SB-021V-0002-SO	BENZENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	BROMOCHLOROMETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	BROMODICHLOROMETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	BROMOFORM	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	BROMOMETHANE	65	320	ug/Kg	UJ	C78SB-022V-0002-SO	65	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CARBON DISULFIDE	57	320	ug/Kg	J	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CARBON TETRACHLORIDE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CHLOROBENZENE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SB-021V-0002-SO	CHLOROETHANE	130	320	ug/Kg	UJ	C78SB-022V-0002-SO	130	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CHLOROFORM	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CHLOROMETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CIS-1,2-DICHLOROETHENE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes
C78SB-021V-0002-SO	CIS-1,3-DICHLOROPROPENE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes
C78SB-021V-0002-SO	DIBROMOCHLOROMETHANE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	ETHYL BENZENE	42	320	ug/Kg	J	C78SB-022V-0002-SO	50	320	J	N/A	Yes
C78SB-021V-0002-SO	METHYLENE CHLORIDE	270	320	ug/Kg	UJ	C78SB-022V-0002-SO	250	320	J	N/A	Yes
C78SB-021V-0002-SO	STYRENE	13	320	ug/Kg	UJ	C78SB-022V-0002-SO	13	320	UJ	N/A	Yes
C78SB-021V-0002-SO	TETRACHLOROETHENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	TOLUENE	96	320	ug/Kg	J	C78SB-022V-0002-SO	130	320	J	N/A	Yes
C78SB-021V-0002-SO	TOTAL XYLENES	240	650	ug/Kg	J	C78SB-022V-0002-SO	270	650	J	N/A	Yes
C78SB-021V-0002-SO	TRANS-1,2-DICHLOROETHENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	TRANS-1,3-DICHLOROPROPENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	TRICHLOROETHENE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SB-021V-0002-SO	VINYL CHLORIDE	32	320	ug/Kg	UJ	C78SB-022V-0002-SO	32	320	UJ	N/A	Yes
C78SS-001M-0001-SO	ALUMINUM	4400	8.2	mg/Kg		C78SS-003M-0001-SO	4500	9.4	J+	2	N/A
C78SS-001M-0001-SO	ANTIMONY	1.3	0.82	mg/Kg	J-	C78SS-003M-0001-SO	1.9	0.94	J-	N/A	Yes
C78SS-001M-0001-SO	ARSENIC	8.4	0.41	mg/Kg		C78SS-003M-0001-SO	6.9	0.47		20	N/A
C78SS-001M-0001-SO	BARIUM	82	0.41	mg/Kg	J-	C78SS-003M-0001-SO	65	0.47	J-	23	N/A
C78SS-001M-0001-SO	BERYLLIUM	0.64	0.082	mg/Kg		C78SS-003M-0001-SO	0.62	0.094		3	N/A
C78SS-001M-0001-SO	CADMIUM	0.57	0.82	mg/Kg	J	C78SS-003M-0001-SO	0.52	0.94	J	N/A	Yes
C78SS-001M-0001-SO	CALCIUM	3900	160	mg/Kg	J-	C78SS-003M-0001-SO	2700	190	J-	36	N/A
C78SS-001M-0001-SO	CHROMIUM	28	0.41	mg/Kg		C78SS-003M-0001-SO	21	0.47		29	N/A
C78SS-001M-0001-SO	COBALT	8.2	0.082	mg/Kg		C78SS-003M-0001-SO	7.6	0.094		8	N/A
C78SS-001M-0001-SO	COPPER	34	0.33	mg/Kg	J-	C78SS-003M-0001-SO	37	0.38	J-	8	N/A
C78SS-001M-0001-SO	IRON	35000	200	mg/Kg		C78SS-003M-0001-SO	31000	240	J-	12	N/A
C78SS-001M-0001-SO	LEAD	120	1.2	mg/Kg	J-	C78SS-003M-0001-SO	110	1.4		9	N/A
C78SS-001M-0001-SO	MAGNESIUM	1600	82	mg/Kg		C78SS-003M-0001-SO	1600	94		0	N/A
C78SS-001M-0001-SO	MANGANESE	650	2	mg/Kg		C78SS-003M-0001-SO	580	2.4	J-	11	N/A
C78SS-001M-0001-SO	NICKEL	25	0.41	mg/Kg		C78SS-003M-0001-SO	21	0.47		17	N/A
C78SS-001M-0001-SO	POTASSIUM	550	82	mg/Kg		C78SS-003M-0001-SO	590	94		7	N/A
C78SS-001M-0001-SO	SELENIUM	0.91	0.41	mg/Kg	J-	C78SS-003M-0001-SO	0.96	0.47	J-	N/A	Yes
C78SS-001M-0001-SO	SILVER	0.15	0.41	mg/Kg	J	C78SS-003M-0001-SO	0.12	0.47	J	N/A	Yes
C78SS-001M-0001-SO	SODIUM	18	82	mg/Kg	J	C78SS-003M-0001-SO	16	94	J	N/A	Yes
C78SS-001M-0001-SO	THALLIUM	0.1	0.16	mg/Kg	J	C78SS-003M-0001-SO	0.095	0.19	J	N/A	Yes
C78SS-001M-0001-SO	VANADIUM	11	0.41	mg/Kg		C78SS-003M-0001-SO	12	0.47		9	N/A
C78SS-001M-0001-SO	ZINC	150	3.3	mg/Kg		C78SS-003M-0001-SO	150	3.8	J-	0	N/A
C78SS-001M-0001-SO	MERCURY	0.064	0.084	mg/Kg	J	C78SS-003M-0001-SO	0.043	0.094	J	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SS-001M-0001-SO	4,4'-DDD	6.8	20	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	20	U	N/A	Yes
C78SS-001M-0001-SO	4,4'-DDE	6.8	17	ug/Kg	UJ	C78SS-003M-0001-SO	7	17	J	N/A	Yes
C78SS-001M-0001-SO	4,4'-DDT	6.8	20	ug/Kg	UJ	C78SS-003M-0001-SO	7.1	20	J	N/A	Yes
C78SS-001M-0001-SO	ALDRIN	14	41	ug/Kg	UJ	C78SS-003M-0001-SO	14	41	U	N/A	Yes
C78SS-001M-0001-SO	ALPHA-BHC	14	25	ug/Kg	UJ	C78SS-003M-0001-SO	14	25	U	N/A	Yes
C78SS-001M-0001-SO	ALPHA-CHLORDANE	14	31	ug/Kg	UJ	C78SS-003M-0001-SO	14	31	U	N/A	Yes
C78SS-001M-0001-SO	BETA-BHC	14	36	ug/Kg	UJ	C78SS-003M-0001-SO	14	36	U	N/A	Yes
C78SS-001M-0001-SO	DELTA-BHC	14	41	ug/Kg	UJ	C78SS-003M-0001-SO	14	41	U	N/A	Yes
C78SS-001M-0001-SO	DIELDRIN	6.8	17	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	17	U	N/A	Yes
C78SS-001M-0001-SO	ENDOSULFAN I	6.8	17	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	17	U	N/A	Yes
C78SS-001M-0001-SO	ENDOSULFAN II	14	25	ug/Kg	UJ	C78SS-003M-0001-SO	14	25	U	N/A	Yes
C78SS-001M-0001-SO	ENDOSULFAN SULFATE	14	31	ug/Kg	UJ	C78SS-003M-0001-SO	14	31	U	N/A	Yes
C78SS-001M-0001-SO	ENDRIN	6.8	17	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	17	U	N/A	Yes
C78SS-001M-0001-SO	ENDRIN ALDEHYDE	14	31	ug/Kg	UJ	C78SS-003M-0001-SO	14	31	U	N/A	Yes
C78SS-001M-0001-SO	ENDRIN KETONE	6.8	20	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	20	U	N/A	Yes
C78SS-001M-0001-SO	GAMMA-BHC	14	25	ug/Kg	UJ	C78SS-003M-0001-SO	14	25	U	N/A	Yes
C78SS-001M-0001-SO	GAMMA-CHLORDANE	6.8	17	ug/Kg	UJ	C78SS-003M-0001-SO	6.8	17	U	N/A	Yes
C78SS-001M-0001-SO	HEPTACHLOR	14	36	ug/Kg	UJ	C78SS-003M-0001-SO	14	36	U	N/A	Yes
C78SS-001M-0001-SO	HEPTACHLOR EPOXIDE	14	25	ug/Kg	UJ	C78SS-003M-0001-SO	14	25	U	N/A	Yes
C78SS-001M-0001-SO	METHOXYCHLOR	34	51	ug/Kg	UJ	C78SS-003M-0001-SO	34	51	U	N/A	Yes
C78SS-001M-0001-SO	TOXAPHENE	200	680	ug/Kg	UJ	C78SS-003M-0001-SO	200	680	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1016	130	330	ug/Kg	UJ	C78SS-003M-0001-SO	25	66	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1221	130	250	ug/Kg	UJ	C78SS-003M-0001-SO	25	51	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1232	130	230	ug/Kg	UJ	C78SS-003M-0001-SO	25	46	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1242	130	200	ug/Kg	UJ	C78SS-003M-0001-SO	25	41	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1248	130	280	ug/Kg	UJ	C78SS-003M-0001-SO	25	56	U	N/A	Yes
C78SS-001M-0001-SO	AROCLOR 1254	550	280	ug/Kg	J	C78SS-003M-0001-SO	200	56		N/A	No
C78SS-001M-0001-SO	AROCLOR 1260	130	280	ug/Kg	UJ	C78SS-003M-0001-SO	25	56	U	N/A	Yes
C78SS-001M-0001-SO	1,2,4-TRICHLOROBENZENE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	1,2-DICHLOROBENZENE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	1,3-DICHLOROBENZENE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	1,4-DICHLOROBENZENE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	2,4,5-TRICHLOROPHENOL	280	1500	ug/Kg	UJ	C78SS-003M-0001-SO	28	150	U	N/A	Yes
C78SS-001M-0001-SO	2,4,6-TRICHLOROPHENOL	820	1500	ug/Kg	R	C78SS-003M-0001-SO	82	150	U	N/A	N/A
C78SS-001M-0001-SO	2,4-DICHLOROPHENOL	280	1500	ug/Kg	UJ	C78SS-003M-0001-SO	28	150	U	N/A	Yes
C78SS-001M-0001-SO	2,4-DIMETHYLPHENOL	820	1500	ug/Kg	UJ	C78SS-003M-0001-SO	82	150	U	N/A	Yes
C78SS-001M-0001-SO	2,4-DINITROPHENOL	820	3400	ug/Kg	R	C78SS-003M-0001-SO	82	340	U	N/A	N/A
C78SS-001M-0001-SO	2,4-DINITROTOLUENE	280	2000	ug/Kg	R	C78SS-003M-0001-SO	28	200	U	N/A	N/A
C78SS-001M-0001-SO	2,6-DINITROTOLUENE	280	2000	ug/Kg	R	C78SS-003M-0001-SO	28	200	U	N/A	N/A

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SS-001M-0001-SO	2-CHLORONAPHTHALENE	34	510	ug/Kg	UJ	C78SS-003M-0001-SO	3.4	51	U	N/A	Yes
C78SS-001M-0001-SO	2-CHLOROPHENOL	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	2-METHYLNAPHTHALENE	42	68	ug/Kg	J	C78SS-003M-0001-SO	27	6.8		N/A	Yes
C78SS-001M-0001-SO	2-METHYLPHENOL	820	2000	ug/Kg	R	C78SS-003M-0001-SO	82	200	U	N/A	N/A
C78SS-001M-0001-SO	2-NITROANILINE	280	2000	ug/Kg	UJ	C78SS-003M-0001-SO	28	200	U	N/A	Yes
C78SS-001M-0001-SO	2-NITROPHENOL	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	3,3'-DICHLOROBENZIDINE	820	1000	ug/Kg	R	C78SS-003M-0001-SO	82	100	U	N/A	N/A
C78SS-001M-0001-SO	3/4-METHYLPHENOL	820	4100	ug/Kg	UJ	C78SS-003M-0001-SO	82	410	U	N/A	Yes
C78SS-001M-0001-SO	3-NITROANILINE	820	2000	ug/Kg	UJ	C78SS-003M-0001-SO	82	200	U	N/A	Yes
C78SS-001M-0001-SO	4,6-DINITRO-2-METHYLPHENOL	820	1500	ug/Kg	R	C78SS-003M-0001-SO	82	150	U	N/A	N/A
C78SS-001M-0001-SO	4-BROMOPHENYL-PHENYLETHER	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	4-CHLORO-3-METHYLPHENOL	280	1500	ug/Kg	UJ	C78SS-003M-0001-SO	28	150	U	N/A	Yes
C78SS-001M-0001-SO	4-CHLOROANILINE	280	1500	ug/Kg	R	C78SS-003M-0001-SO	28	150	U	N/A	N/A
C78SS-001M-0001-SO	4-CHLOROPHENYL-PHENYLETHER	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	4-NITROANILINE	280	2000	ug/Kg	UJ	C78SS-003M-0001-SO	28	200	U	N/A	Yes
C78SS-001M-0001-SO	4-NITROPHENOL	820	3400	ug/Kg	R	C78SS-003M-0001-SO	82	340	U	N/A	N/A
C78SS-001M-0001-SO	ACENAPHTHENE	34	68	ug/Kg	UJ	C78SS-003M-0001-SO	5.6	6.8	J	N/A	Yes
C78SS-001M-0001-SO	ACENAPHTHYLENE	34	68	ug/Kg	UJ	C78SS-003M-0001-SO	11	6.8		N/A	Yes
C78SS-001M-0001-SO	ANTHRACENE	56	68	ug/Kg	J	C78SS-003M-0001-SO	23	6.8		N/A	Yes
C78SS-001M-0001-SO	BENZO(A)ANTHRACENE	190	68	ug/Kg	J	C78SS-003M-0001-SO	92	6.8		N/A	No
C78SS-001M-0001-SO	BENZO(A)PYRENE	170	68	ug/Kg	J	C78SS-003M-0001-SO	88	6.8		N/A	No
C78SS-001M-0001-SO	BENZO(B)FLUORANTHENE	280	68	ug/Kg	J	C78SS-003M-0001-SO	140	6.8		N/A	No
C78SS-001M-0001-SO	BENZO(G,H,I)PERYLENE	130	68	ug/Kg	J	C78SS-003M-0001-SO	87	6.8		N/A	Yes
C78SS-001M-0001-SO	BENZO(K)FLUORANTHENE	140	68	ug/Kg	J	C78SS-003M-0001-SO	85	6.8		N/A	Yes
C78SS-001M-0001-SO	BENZOIC ACID	3400	6700	ug/Kg	R	C78SS-003M-0001-SO	520	670	J	N/A	N/A
C78SS-001M-0001-SO	BENZYL ALCOHOL	280	3400	ug/Kg	UJ	C78SS-003M-0001-SO	28	340	U	N/A	Yes
C78SS-001M-0001-SO	BIS(2-CHLOROETHOXY)METHANE	280	1000	ug/Kg	UJ	C78SS-003M-0001-SO	28	100	U	N/A	Yes
C78SS-001M-0001-SO	BIS(2-CHLOROETHYL) ETHER	34	1000	ug/Kg	UJ	C78SS-003M-0001-SO	3.4	100	U	N/A	Yes
C78SS-001M-0001-SO	BIS(2-CHLOROISOPROPYL) ETHER	280	1000	ug/Kg	UJ	C78SS-003M-0001-SO	28	100	U	N/A	Yes
C78SS-001M-0001-SO	BIS(2-ETHYLHEXYL) PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	BUTYLBENZYL PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	CARBAZOLE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	CHRYSENE	210	68	ug/Kg	J	C78SS-003M-0001-SO	99	6.8		N/A	No
C78SS-001M-0001-SO	DIBENZO(A,H)ANTHRACENE	34	68	ug/Kg	UJ	C78SS-003M-0001-SO	3.4	6.8	U	N/A	Yes
C78SS-001M-0001-SO	DIBENZOFURAN	34	510	ug/Kg	UJ	C78SS-003M-0001-SO	10	51	J	N/A	Yes
C78SS-001M-0001-SO	DIETHYL PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	19	51	J	N/A	Yes
C78SS-001M-0001-SO	DIMETHYL PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	DI-N-BUTYL PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	DI-N-OCTYL PHTHALATE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SS-001M-0001-SO	FLUORANTHENE	450	68	ug/Kg	J-	C78SS-003M-0001-SO	180	6.8		86	N/A
C78SS-001M-0001-SO	FLUORENE	40	68	ug/Kg	J	C78SS-003M-0001-SO	10	6.8		N/A	Yes
C78SS-001M-0001-SO	HEXACHLOROBENZENE	34	68	ug/Kg	UJ	C78SS-003M-0001-SO	3.4	6.8	U	N/A	Yes
C78SS-001M-0001-SO	HEXACHLOROBUTADIENE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	HEXACHLOROCYCLOPENTADIENE	280	3400	ug/Kg	R	C78SS-003M-0001-SO	28	340	U	N/A	N/A
C78SS-001M-0001-SO	HEXACHLOROETHANE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	INDENO(1,2,3-CD)PYRENE	110	68	ug/Kg	J	C78SS-003M-0001-SO	58	6.8		N/A	Yes
C78SS-001M-0001-SO	ISOPHORONE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	NAPHTHALENE	34	68	ug/Kg	UJ	C78SS-003M-0001-SO	24	6.8		N/A	Yes
C78SS-001M-0001-SO	NITROBENZENE	34	1000	ug/Kg	R	C78SS-003M-0001-SO	3.4	100	U	N/A	N/A
C78SS-001M-0001-SO	N-NITROSO-DI-N-PROPYLAMINE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	N-NITROSODIPHENYLAMINE	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	28	51	U	N/A	Yes
C78SS-001M-0001-SO	PENTACHLOROPHENOL	820	1500	ug/Kg	R	C78SS-003M-0001-SO	82	150	U	N/A	N/A
C78SS-001M-0001-SO	PHENANTHRENE	300	68	ug/Kg	J	C78SS-003M-0001-SO	92	6.8		N/A	No
C78SS-001M-0001-SO	PHENOL	280	510	ug/Kg	UJ	C78SS-003M-0001-SO	120	51		N/A	Yes
C78SS-001M-0001-SO	PYRENE	300	68	ug/Kg	J	C78SS-003M-0001-SO	120	6.8		N/A	No
C78SS-001M-0001-SO	1,3,5-TRINITROBENZENE	0.057	0.25	mg/kg	J+	C78SS-003M-0001-SO	0.047	0.25	J	N/A	Yes
C78SS-001M-0001-SO	1,3-DINITROBENZENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	2,4,6-TRINITROTOLUENE	2	0.25	mg/kg	J+	C78SS-003M-0001-SO	1.2	0.25		N/A	No
C78SS-001M-0001-SO	2,4-DINITROTOLUENE	0.024	0.25	mg/kg	NJ+	C78SS-003M-0001-SO	0.039	0.25	J	N/A	Yes
C78SS-001M-0001-SO	2,6-DINITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	2-AMINO-4,6-DINITROTOLUENE	0.3	0.25	mg/kg	J+	C78SS-003M-0001-SO	0.22	0.25	J	N/A	Yes
C78SS-001M-0001-SO	2-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	3-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	4-AMINO-2,6-DINITROTOLUENE	2	0.25	mg/kg	NJ+	C78SS-003M-0001-SO	0.77	0.25		N/A	No
C78SS-001M-0001-SO	4-NITROTOLUENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	RDX	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	Tetryl	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	NITROBENZENE	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	NITROGLYCERINE	0.5	0.5	mg/kg	UJ	C78SS-003M-0001-SO	0.5	0.5	U	N/A	Yes
C78SS-001M-0001-SO	HMX	0.25	0.25	mg/kg	UJ	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	PETN	0.5	0.5	mg/kg	UJ	C78SS-003M-0001-SO	0.5	0.5	U	N/A	Yes
C78SS-001M-0001-SO	NITROGUANIDINE	0.24	0.24	mg/kg	U	C78SS-003M-0001-SO	0.25	0.25	U	N/A	Yes
C78SS-001M-0001-SO	NITROCELLULOSE	4	5	mg/kg	J	C78SS-003M-0001-SO	2	5	J	N/A	Yes
C78SS-002-0001-SO	1,1,1-TRICHLOROETHANE	20	240	ug/Kg	UJ	C78SS-004-0001-SO	21	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,1,2,2-TETRACHLOROETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,1,2-TRICHLOROETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,1-DICHLOROETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,1-DICHLOROETHENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes

Sample	Analyte	Result	LOQ	Units	Qualifier	Sample	Result	LOQ	Qualifier	RPD	W/In LOQ
C78SS-002-0001-SO	1,2-DIBROMOETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,2-DICHLOROETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	1,2-DICHLOROETHENE (TOTAL)	7.9	480	ug/Kg	UJ	C78SS-004-0001-SO	8	490	UJ	N/A	Yes
C78SS-002-0001-SO	1,2-DICHLOROPROPANE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	2-BUTANONE	96	960	ug/Kg	UJ	C78SS-004-0001-SO	98	980	UJ	N/A	Yes
C78SS-002-0001-SO	2-HEXANONE	48	960	ug/Kg	UJ	C78SS-004-0001-SO	49	980	UJ	N/A	Yes
C78SS-002-0001-SO	4-METHYL-2-PENTANONE	96	960	ug/Kg	UJ	C78SS-004-0001-SO	98	980	UJ	N/A	Yes
C78SS-002-0001-SO	ACETONE	190	960	ug/Kg	UJ	C78SS-004-0001-SO	200	980	UJ	N/A	Yes
C78SS-002-0001-SO	BENZENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	BROMOCHLOROMETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	BROMODICHLOROMETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	BROMOFORM	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	BROMOMETHANE	48	240	ug/Kg	UJ	C78SS-004-0001-SO	49	240	UJ	N/A	Yes
C78SS-002-0001-SO	CARBON DISULFIDE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	CARBON TETRACHLORIDE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	CHLOROBENZENE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	CHLOROETHANE	96	240	ug/Kg	UJ	C78SS-004-0001-SO	98	240	UJ	N/A	Yes
C78SS-002-0001-SO	CHLOROFORM	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	CHLOROMETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	CIS-1,2-DICHLOROETHENE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	CIS-1,3-DICHLOROPROPENE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	DIBROMOCHLOROMETHANE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	ETHYL BENZENE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	METHYLENE CHLORIDE	170	240	ug/Kg	UJ	C78SS-004-0001-SO	190	240	J	N/A	Yes
C78SS-002-0001-SO	STYRENE	9.6	240	ug/Kg	UJ	C78SS-004-0001-SO	9.8	240	UJ	N/A	Yes
C78SS-002-0001-SO	TETRACHLOROETHENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	TOLUENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	TOTAL XYLENES	29	480	ug/Kg	UJ	C78SS-004-0001-SO	29	490	UJ	N/A	Yes
C78SS-002-0001-SO	TRANS-1,2-DICHLOROETHENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	TRANS-1,3-DICHLOROPROPENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	TRICHLOROETHENE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes
C78SS-002-0001-SO	VINYL CHLORIDE	24	240	ug/Kg	UJ	C78SS-004-0001-SO	24	240	UJ	N/A	Yes

APPENDIX D

Validator Checklists

POLY CHLORINATED BIPHENYLS (PCB/AROCLORS) CHECKLIST

Project Name: Ravenna/Quarry Pond

Laboratory: TA-N. Canton

Batch Number(s): 23899

Sample Delivery Group: 240-58666-1

	Yes	No
1. Holding Time:		
(a) Were samples extracted within holding time?	[✓]	[ ]
(b) Were samples analyzed within holding time?	[✓]	[ ]
2. Initial Calibration:		
• Did the initial calibration consist of five standards?	[✓]	[ ]
• Did Aroclors 1016 and 1260 meet the RSD ≤ 20% or the r ≥ 0.99? avg.	[✓]	[ ]
• Was manual integration "M" performed? If the answer is "Yes", check for supporting documents.	[✓]	[ ]
• Was the manual integration necessary?	[✓]	[ ]
If the answer is "no", contact the laboratory inquiring about the reasons behind the manual integration, and **inform the District Chemist immediately if there were no valid reasons.**		
3. QCMDL:		
• Was MDL Check performed?	[ ]	[✓]
4. QCMRL:		
• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours?? results J or NJ/C	[ ]	[✓]
• Was the QC/MRL between 70-130% R N/A	[ ]	[ ]
5. Initial Calibration Verification (ICV):		
Is the mid level (2nd source) recovery within ~~85 - 115%~~ QSM 80-120%?	[✓]	[ ]

	Yes	No
6. Continuing Calibration Verification (CCV):		
• Was CCV conducted every 12 hours?	[✓]	[ ]
• Was Drift or D ~~≤ 15%~~ avg. ≤ 20% QSM from the initial calibration with a maximum %D < 20% for a specific compound?	[✓]	[ ]
7. Sample Analysis:		
• Was the RRT of an identified component within the retention time window created as SW-846 requires?	[✓]	[ ]
• Were samples with levels higher than the calibration range (E), diluted and re-analyzed? -41 5X	[✓]	[ ]
• Were identified Aroclors confirmed on a second GC column?	[✓]	[ ]
• Were individual Aroclor standards used to determine the pattern of the peaks? (Individual Aroclors are 1221, 1232, 1242, 1248, and 1254. Both Aroclor 1016, and 1260 can be used from the mixed calibration standards.)	[✓]	[ ]
• Was RPD of target analyte conformation ≤ 40?	[✓]	[ ]
8. Sample Quality Control:		
• Method Blanks: Were target analytes ≤ 1/2 MRL? ND	[✓]	[ ]
• LCS: Were the percent recoveries for LCS within the limits?	[✓]	[ ]
• MS/MSD: Were the percent recoveries within limits?	[✓]	[ ]
Were the RPDs within control limits?	[✓]	[ ]
• System Monitoring Compounds (Surrogates): are surrogate recoveries within QC limits?	[✓]	[ ]

9. Comments (attach additional sheets if necessary):

Validated/Reviewed by:

Signature: L.S. Calvin Date: 03.14.2013

Name: L.S. Calvin

ORGANOCHLORINE PESTICIDES ANALYSIS CHECKLIST

Project Name: Ravenna/Quarry Pond

Laboratory: TA - N. Canton

Batch Number(s): 23899

Sample Delivery Group: 240-58666-1

	Yes	No
1. Holding Time:		
(a) Were samples extracted within holding time?	[✓]	[ ]
(b) Were samples analyzed within holding time?	[✓]	[ ]
2. DDT/Endrin Breakdown:		
• Was breakdown ≤ 15%?	[✓]	[ ]
3. Initial Calibration:		
• Did the initial calibration consist of five standards?	[✓]	[ ]
• Did all compounds meet the RSD ≤ 20% or r ≥ 0.99?	[✓]	[ ]
• Was manual integration "M" performed? If the answer is "Yes", check for supporting documents.	[✓]	[ ]
• Was the manual integration necessary? If the answer is "no", contact the laboratory inquiring about the reasons behind the manual integration, and **inform the District Chemist immediately if there were no valid reasons.**	[✓]	[ ]
4. QCMDL:		
• Was MDL Check performed?	[ ]	[✓]
5. QCMRL:		
• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours?? all results for WJ/C	[ ]	[✓]
• Was the QC/MRL between 70-130% R N/A	[ ]	[ ]

	Yes	No
6. Initial Calibration Verification (ICV):		
• Is the mid level (2nd source) recovery within 85 - 115%?	[✓]	[ ]
7. Continuing Calibration Verification (CCV):		
• Was CCV conducted every 12 hours?	[✓]	[ ]
• Was Drift or D ≤ 15% from the initial calibration with a maximum D ≤ 20% for a specific compound? methoxchlor 28.2% 42.9% J/C in -7	[ ]	[✓]
8. Sample Analysis:		
• Was the RRT of an identified component within the retention time window created as SW-846 requires?	[✓]	[ ]
• Were samples with levels higher than the calibration range (E), diluted and re-analyzed? N/A	[ ]	[ ]
• Were identified compounds confirmed on a second GC column?	[✓]	[ ]
• Was RPD of target analyte confirmation ≤ 40? methoxchlor -7 102%	[ ]	[✓]
9. Sample Quality Control:		
• Method Blanks: Were target analytes ≤ 1/2 MRL?	[✓]	[ ]
• LCS: Were the percent recoveries for LCS within the limits?	[✓]	[ ]
• MS/MSD: Were the percent recoveries within limits? those affecting sample data (T/ND)	[✓]	[ ]
Were the RPD within control limits?	[✓]	[ ]
• System Monitoring Compounds (Surrogates): are surrogate recoveries within QC limits? TCX 146 (70-125) 1° DCB 419 (55-130) 2° J/UJ s -7	[ ]	[✓]

10. Comments (attach additional sheets if necessary):

Validated/Reviewed by:

Signature: L.S. Calvin

Date: 03.14.2013

Name: L.S. Calvin

VOLATILE ORGANIC ANALYSIS CHECKLIST

Project Name: Ravenna/Quarry Pond

Laboratory: TA - N. Canton

Batch Number(s): 24100, 24114

Sample Delivery Group (SDG): 240-5866-1

	Yes	No
1. Holding Time:		
(a) Were samples preserved?	[✓]	[ ]
(b) Were samples analyzed within holding time?	[✓]	[ ]
2. Was the BFB tune performed at the beginning of each 12-hour period during which samples were analyzed?	[✓]	[ ]
3. Was mass assignment based on m/z 95?	[✓]	[ ]
4. Indicate if BFB ions abundance relative to m/z 95 base peak met the ions abundance criteria:		

m/z	Acceptance Criteria		
50	15.0 - 40.0 %	[✓]	[ ]
75	30.0 - 66.0 %	[✓]	[ ]
95	**100%, Base Peak**	[✓]	[ ]
96	5.0 - 9.0%	[✓]	[ ]
173	<2.0% of m/z 174	[✓]	[ ]
174	>50%	[✓]	[ ]
175	5.0 - 9.0% of mass 174	[✓]	[ ]
176	95.0 - 101.0% of m/z 174	[✓]	[ ]
177	5.0 - 9.0% of m/z 176	[ ]	[ ]

The relative ion abundance of m/z 95/96, m/z 174/176, and 176/177 are of critical importance.

The relative ion abundance of m/z 50 and 75 are of lower importance.

	Yes	No
5. Initial Calibration:		
• Did the initial calibration consist of five standards?	[✓]	[ ]
• Did the System Performance Check Compounds (SPCC) meet the minimum mean response factor (RF)?		
RF		
Chloromethane 0.1	[✓]	[ ]
1,1-Dichloroethane 0.1	[✓]	[ ]
Bromoform 0.1	[✓]	[ ]
Chlorobenzene 0.3	[✓]	[ ]
1,1,2,2-Tetrachloroethane 0.3	[✓]	[ ]
• Did the RSD meet the criteria ≤ 30% for each individual Calibration Check Compound (CCC)?		
1,1-Dichloroethene	[✓]	[ ]
Chloroform	[✓]	[ ]
1,2-Dichloropropane	[✓]	[ ]
Toluene	[✓]	[ ]
Ethylbenzene	[✓]	[ ]
Vinyl chloride	[✓]	[ ]
• Are the RSDs for the remaining target analytes ≤ 15% or r ≥ 0.99 with a mean RSD ≤ 15% with a maximum RSD ≤ 20%?	[✓]	[ ]
If the answer is "No", are the mean RSDs ≤ 15%?	[ ]	[✓]
• Was manual integration "M" performed?	N/A [ ]	[ ]
If the answer is "Yes", check for supporting documents.	[ ]	[ ]
• Was the manual integration necessary?	[ ]	[ ]
If the answer is "No", contact the laboratory inquiring about the reasons behind the manual integration, and **inform the District Chemist immediately if there were no valid reasons**.		
6. QCMDL:	[ ]	[✓]
• Was MDL Check performed?		
7. QCMRL:	[ ]	[✓]

	Yes	No
• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours?	[ ]	[✓]
all results J/UJ-C		
• Was the QC/MRL between 70-130% R N/A	[ ]	[ ]
• For the non-contaminants of concern was the QC/MRL between 60-140% (Sporadic Marginal Failure) ↓	[ ]	[ ]
8. Initial Calibration Verification (ICV):	[✓]	[ ]
• Is the mid level (2nd source) recovery within 80 - 120% for contaminants of concern ?		
• Is the mid level (2nd source) recovery within 60-140% for non-contaminants of concern (Sporadic Marginal Failure)?		
9. Continuing Calibration Verification (CCV):		
• Was CCV conducted every 12 hours?	[✓]	[ ]
• Did SPCC meet the RF values?	[✓]	[ ]
RF		
Chloromethane 0.1	[✓]	[ ]
1,1-Dichloroethane 0.1	[✓]	[ ]
Bromoform 0.1	[✓]	[ ]
Chlorobenzene 0.3	[✓]	[ ]
1,1,2,2-Tetrachloroethane 0.3	[ ]	[ ]
• Did the CCC meet the minimum requirements (D ≤ 20%)?	[✓]	[ ]
1,1-Dichloroethene	[✓]	[ ]
Chloroform	[✓]	[ ]
1,2-Dichloropropane	[✓]	[ ]
Toluene	[✓]	[ ]
Ethylbenzene	[✓]	[ ]
Vinyl chloride	[ ]	[ ]
• Primary Evaluation: Was the mean, Drift or D ≤ 20% from the initial calibration?	[✓]	[ ]
• Alternative Evaluation: Maximum allowable Drift/D for		

	Yes	No
each target analyte is ≤ 30% when mean D ≤ 20%? N/A	[ ]	[ ]

10. Sample Analysis:

	Yes	No
• Was the RRT of an identified component within ± 0.06 RRT units of the RRT of the standard component?	[✓]	[ ]
• Did the abundance of ions in the sample spectra agree within 30% of the major ions (> 10% of the base ion) in the standard spectra?	[✓]	[ ]
• Were the internal standard areas within the QC limits (from -50% to +200%)?	[✓]	[ ]

11. Sample Quality Control:

	Yes	No
• Method Blanks: Were target analytes ≤ 1/2 MRL?	[✓]	[ ]
Methylene chloride 239J/182J U/B @ level of contam.		
• LCS: Were the percent recoveries for LCS within the limits?	[ ]	[✓]
cis-1,3-DCP 68% (70-125) UJ/L in -8		
• MS/MSD: Were the percent recoveries within limits? N/A	[ ]	[ ]
Were the RPD within control limits? ↓	[ ]	[ ]
System Monitoring Compounds (Surrogates): are surrogate recoveries within QC limits (50-150%)?	[ ]	[✓]

12. Comments (attach additional sheets if necessary):

-8 BFB 80% (80-120)

-42 ↓ 67% ↓ D8-toluene 72% (85-115)

Validated/Reviewed by:
Signature: L S Calvin

Date: 03.14.2013

Name: L.S. Calvin

SEMIVOLATILE ORGANIC ANALYSIS CHECKLIST

Project Name: Quarry Pond

Laboratory: TA-N Canton

Batch Number(s): 25484 (21)

Sample Delivery Group: 240-5866-1

5866-7 C785B-021M-0002-SO 4X
5866-41 C785S-001M-0001-SO 10X

21 samp	11/9	11/10
prep	11/21	11/21
leach	11/11	11/11
analys	12/5	12/5

	Yes	No
1. Sample Holding Time:		
(a) Were samples extracted within holding time?	[N]	[ ]
(b) Were samples analyzed within holding time?	[N]	[ ]
2. Instrument Tuning: Was the DFTPP tune performed at the beginning of each 12-hour period during which samples were analyzed?	[N]	[ ]
3. Ion Mass Assignments: Was mass assignment based on m/z 198?	[N]	[ ]
4. Ion Abundance: Indicate if DFTPP ions abundance relative to m/z 198 base peak met the ions abundance criteria:		

m/z	Acceptance Criteria		
51	30.0 - 60.0 %	[N]	[ ]
68	< 2% of mass 69	[N]	[ ]
70	< 2% of mass 69	[N]	[ ]
127	40-60%	[N]	[ ]
197	< 1%	[N]	[ ]
198	**100%, Base peak**	[N]	[ ]
199	5-9%	[N]	[ ]
275	10 - 30%	[N]	[ ]
365	> 1%	[N]	[ ]
441	present but < mass 443	[N]	[ ]
442	> 40%	[N]	[ ]
443	17-23% of mass 442	[N]	[ ]

		Yes	No
5.0 Initial Calibration:			
• Did the initial calibration consist of five or more standards?		5-stds [ ] more [X]	[ ] [ ]
If the calibration curve consists of 5-standards, check validity of the calibration model.			
Was the linear model applied?		[X]	[ ]
• Did the followings System Performance Check Compounds (SPCC) meet the minimum mean response factor (RF)?			
	RF		
N-nitroso-di-n-propylamine	0.05	[X]	[ ]
Hexachlorocyclopentadiene	0.05	[X]	[ ]
2,4-dinitrophenol	0.05	[X]	[ ]
4-nitrophenol	0.05	[X]	[ ]
• Did the RSD meet the criteria ≤ 30% for the followings each individual Calibration Check Compound (CCC)?			
Base/Neutral Fraction:			
Acenaphthene		[X]	[ ]
1,4-Dichlorobenzene		[X]	[ ]
Hexachlorobutadiene		[X]	[ ]
Diphenylamine		[X]	[ ]
Di-n-octylphthalate		[X]	[ ]
Fluoranthene		[X]	[ ]
Benzo(a)pyrene		[X]	[ ]
Acid Fraction:			
4-Chloro-3-methylphenol		[X]	[ ]
2,4-Dichlorophenol		[X]	[ ]
2-Nitrophenol		[X]	[ ]
Phenol		[X]	[ ]
Pentachlorophenol		[X]	[ ]
2,4,6-Trichlorophenol		[X]	[ ]
• Are the RSDs for the remaining target analytes ≤ 15%?		[X]	[ ]
• If the answer is "No", are the mean RSDs ≤ 15% or r ≥ 0.99 with a mean RSD ≤ 15% with a maximum RSD ≤ 30%?		[ ] [ ]	[ ] [ ]

	Yes	No
• Was manual integration "M" performed?	[N]	[ ]
If the answer is "Yes", check for supporting documents.		
• Was the manual integration necessary?	[N]	[ ]
If the answer is "No", contact the laboratory inquiring about the reasons behind the manual integration, and **inform the District Chemist immediately if there were no valid reasons.**		

6. QCMDL:

• Was MDL Check performed?	[ ]	[N]

7. QCMRL:

• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours?	[ ]	[N]
• Was the QC/MRL between 70-130% R	[ ]	[ ]
• For the non-contaminants of concern was the QC/MRL between 50-150% (Sporadic Marginal Failure)?	[ ]	[ ]

8. Initial Calibration Verification (ICV):

	[ ]	[N]
• Is the mid level (2nd source) recovery within 70-130% for contaminants of concern ?		
• Is the mid level (2nd source) recovery within 50-150% for non-contaminants of concern (Sporadic Marginal Failure)?	[ ]	[ ]

9. Continuing Calibration Verification (CCV):

• Was CCV conducted every 12 hours?	[N]	[ ]
• Did any of SPCC meet the minimum RF values?	[N]	[ ]

		Yes	No
N-nitroso-di-n-propylamine	0.05	[X]	[ ]
Hexachlorocyclopentadiene	0.05	[X]	[ ]
2,4-dinitrophenol	0.05	[X]	[ ]
4-nitrophenol	0.05	[X]	[ ]

- Did the CCC meet the minimum requirements (D ≤ 20%) for the followings?

Base/Neutral Fraction:

Acenaphthene	[X]	[ ]
1,4-Dichlorobenzene	[X]	[ ]
Hexachlorobutadiene	[X]	[ ]
Diphenylamine	[X]	[ ]
Di-n-octylphthalate	[X]	[ ]
Fluoranthene	[X]	[ ]
Benzo(a)pyrene	[X]	[ ]

Acid Fraction:

4-Chloro-3-methylphenol	[X]	[ ]
2,4-Dichlorophenol	[X]	[ ]
2-Nitrophenol	[X]	[ ]
Phenol	[X]	[ ]
Pentachlorophenol	[X]	[ ]
2,4,6-Trichlorophenol	[X]	[ ]

- Primary Evaluation: Was Drift or D ≤ 20% calculated from the initial calibration? [X] [ ]
- Alternative Evaluation: Maximum allowable Drift/D for each target analyte is ≤ 30%. [ ] [ ]

10. Sample Analysis:

- Was the RRT of an identified component within ± 0.06 RRT units of the RRT of the standard component? [X] [ ]
- Did the abundance of ions in the sample spectra agree within 30% of the major ions (> 10% of the base ion) in the standard spectra? [X] [ ]
- Were the internal standard areas within the QC limits (from -50% to +200%)? [X] [ ]

11. Sample Quality Control:

	Yes	No
• Method Blanks: Were target analytes ≤ 1/2 MRL?	[N]	[ ]
• LCS: Were the percent recoveries for LCS within the limits?	[ ]	[N]
• MS/MSD: Were the percent recoveries within limits?	[ ]	[N]
Were the RPD within control limits?	[N]	[ ]
• System Monitoring Compounds (Surrogates): are surrogate recoveries within QC limits?	[ ]	[N]

12. Comments (attach additional sheets if necessary):

All surr ↓ 621m See p 1310
MS/D C78SS-001M-0001-SO benzoic acid (0,0), 4,6DN2MP (0,0)
See p 1317 24DNP(0,0), fluoranthene (48,44), hexachlorocyclopenta (0,0), 3,3' (0,0), 2MP (0,0), 4NP (0,0), PCP(0,0) 246TCP (0,0), ~~phenol (111, 120)~~, 4CA (0,0), ~~phenanth (, 49)~~
LCS benzoic acid 0%
ICV 24DNP 23%

Validated/Reviewed by:

Signature: P Meeks Date: 3/14/13

Name: P. Meeks

NITROAROMATICS & NITRAMINE DATA ANALYSIS (EXPLOSIVE RESIDUES) CHECKLIST

& propellant

C18-021m-0002 -4
001m-0001 -20

Project Name: Quarry Pond

Laboratory: TA - N Canton

Batch Number(s): _____

Sample Delivery Group: 2405866

	Yes	No
1. Holding Time: Were samples analyzed within holding time?	[N]	[ ]
2. Initial Calibration:		
• Did the initial calibration consist of five standards?	[N]	[ ]
• Did the RSD meet the criteria ≤ 20% for each individual Calibration Compound or r ≥ 0.99?	[ ]	[ ]
• Was manual integration "M" performed? If the answer is "Yes", check for supporting documents.	[N]	[ ]
• Was the manual integration necessary?	[N]	[ ]
If the answer is "no", contact the laboratory inquiring about the reasons behind the manual integration, and **inform the District Chemist immediately if there were no valid reasons.**		
3. QCMDL:		
• Was MDL Check performed?	[ ]	[N]
4. QCMRL:		
• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours??	[ ]	[ ]
• Was the percentage "D" for QC/MRL ≤ 30%?	[ ]	[ ]
5. Initial Calibration Verification (ICV):	[N]	[ ]

	Yes	No
• Was the ICV made of a 2nd source?	[N]	[ ]
• Was the mid level (2nd source) recovery within 85 - 115%?		
6. Continuing Calibration Verification (CCV): {Daily calibration}		
• Was midpoint calibration standard conducted at the beginning of the day?	[Y]	[ ]
• Was midpoint calibration standard conducted every ten samples or every twelve hours?	[Y]	[ ]
• Was midpoint calibration standard conducted after the last sample of the day?	[Y]	[ ]
• Did the CCV meet the minimum requirements (D ≤ 15% with a maximum D ≤ 20% for a specific compound if the mean D ≤ 15%)?	[Y]	[ ]
7. Sample Analysis:		
• Was the RRT of an identified component within the retention time window created as SW-846 requires?	[Y]	[ ]
• Were all identified hits, above the initial calibration curve, diluted and reanalyzed? N/A	[ ]	[ ]
• Were all identified hits confirmed on a second column?	[N]	[ ]
• Was RPD of target analyte confirmation ≤ 40?	[ ]	[N]
• Was there a shoulder on the 2,4,6-TNT peak?	[ ]	[N]
If the answer is "Yes", then tetryl decomposition is suspected. Peak height rather than peak area should be used for calculating TNT concentration. If teryl was identified in aqueous samples, was pH adjusted to <3? If the answer is "No", then check for tetryl decomposition, and qualify hits with **"J"** accordingly.	[ ]	[ ]
8. Sample Quality Control:	[Y]	[ ]
• Method Blanks: Were target analytes ≤ 1/2 MRL?		
• LCS: Were the percent recoveries for LCS within the limits?	[N]	[ ]

	Yes	No
• MS/MSD: Were the percent recoveries within limits? N/A	[ ]	[ ]
Were the RPDs within control limits?		
• System Monitoring Compounds (Surrogates): Were surrogate recoveries within QC limits?	[N]	[N]

9. Comments (attach additional sheets if necessary):

-001M-0001 Surr: 123% (78-108%)
NG LCS limits 72-121%
NC 34-115%

Validated/Reviewed by:

Signature: P. Meeks Date: 3/4/13

Name: P. Meeks

ICP METALS ANALYSIS (6010) CHECKLIST

C78-021M-0002
C78-001M-0001

Project Name: Quarry Pond

Laboratory: TA - N. Canton

Batch Number(s): _____

Sample Delivery Group: 240-5866

	Yes	No
1. Holding Time:		
• Were samples analyzed within holding time (6-Months)?	[N]	[ ]
2. Initial Calibration:		
• Did the initial calibration consist of		
One calibration standard and a blank?	[ ]	[ ]
three calibration standards and a blank?	[ ]	[ ]
• Was $R \geq 0.995$	[N]	[ ]
3. QCMDL:		
• Was MDL Check performed?	[ ]	[N]
QCMRL:		
• Were QC/MRL run at the beginning and end of every daily sequence or every 12 hours??	[N]	[ ]
• Was the QC/MRL between ~~70-130~~ 80-120% R? Common Elements can be between the MRL and 2X MRL level (Fe, Al, Mg and Ca)	[ ]	[ ]
	[N]	[ ]
4. Initial Calibration Verification (ICV):		
• Is the mid level (2nd source) recovery within 90 - 110%?		
5. Initial Calibration Blank (ICP):		

	Yes	No
• Were analytes in the blank ≤ 1/2 MRL?	[N]	[ ]

6. Interelement Check Standard:

• Was ICS-A (interferents only) conducted at the beginning of analytical sequence?	[N]	[ ]
• Was ICS-AB results within QC limits (80-120)?	[N]	[ ]

7. Continuing calibration Blank (CCB):

• Was CCB conducted every 10 samples?	[N]	[ ]
• Was CCB conducted at end of the analytical sequence?	[N]	[ ]
• Were analytes ≤ 1/2 MRL?	[N]	[ ]

8. Continuing Calibration Verification (CCV):

• Was CCV conducted every 10 samples?	[N]	[ ]
• Was CCV conducted at end of the analytical sequence?	[N]	[ ]
• Was the %R between 90-110?	[N]	[ ]

9. Sample Analysis:

• Were samples with levels higher than the calibration range (E), diluted and re-analyzed?	[N]	[ ]

10. Sample Quality Control:

• Method Blanks: Were target analytes ≤ 1/2 MRL?	[N]	[ ] or insuff
• LCS: Were the percent recoveries for LCS within the limits?	[N]	[ ]
• MS: Were the percent recoveries within limits?	[ ]	[N]
• MD: Were the RPDs within control limits?	[N]	[N]

11. Serial Dilution:

• Was serial dilution (1:4) conducted when needed?	[N]	[ ]

	Yes	No
• Was there an agreement between diluted and undiluted results (<10%)?	[ ]	[N]

12. Method of Standard Addition (MSA):

• Was MSA performed on samples suspected of matrix effect (R ≥ 0.995)? N/A	[ ]	[ ]

13. Comments (attach additional sheets if necessary):

C78SS-007-0001-SO

MS Sb (20,), Ca (41,), Cu (57,), Se (74,)

~~C78DA~~

Dup Sb (37), ~~LOQ = 0.93~~

SD Ba (11), Pb (19),

%RSD ^{78}Se 18.5 % -41

31.4% -7

Validated/Reviewed by:

Signature: P. Meeks Date: 3/14/13

Name: P. Meeks

0.035

-7 = 0.304

~~-41 = 0.4588~~

11/30
09:50
~~13:07~~

Appendix J – Drum Removal Documentation

HW-044 Prudent

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: 0115210020736
2. Page 1 of 1
3. Emergency Response Phone: 877-742-4215
4. Manifest Tracking Number: 008292068 JJK

5. Generator's Name and Mailing Address: Ravenna Army Ammunition Plant, 8451 St. Rt. 5 / Bldg. 1037, Ravenna OH 44266

Generator's Site Address (if different than mailing address):

Generator's Phone: 330 358-7312

6. Transporter 1 Company Name: SWS Environmental Services — U.S. EPA ID Number: FL0000936831

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Clean Waters Ltd, 300 Cherokee Dr., Dayton, OH 45417 — U.S. EPA ID Number: OND004274031

Facility's Phone: 800 543-3670

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN3077 Hazardous Waste, Solid, n.o.s., (containing lead compounds), 9, PG III	001	DM	200	P	D008
	2. Non regulated solid waste	001	DM	100	P	
	3.					
	4.					

14. Special Handling Instructions and Additional Information

SWS Project # FN3-262-1351

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X Mark Patterson — Signature: X Mark Patterson — Month 2 Day 21 Year 12

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Carmack — Signature: [signature] — Month 2 Day 16 Year 12

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

2/21

Clean Water Limited

LAND DISPOSAL RESTRICTION CERTIFICATION FORM

Generator Name Ravenna Army Ammunition Plant, OH Manifest No 8292068 JJK Page 1 of 1

The waste(s) identified below comply with the applicable treatment standards in 40 CFR 268, Subpart D and the applicable prohibition levels specified in 40 CFR 268.32 or RCRA 3004(d). The required information applicable to each waste is identified below.

☐ This shipment includes F001-F005 spent solvents, as identified on the attached sheet.
(Attach LDR Notification Form and check regulated constituents)

☐ This shipment includes F039 multisource leachate, as identified on the attached UTS\UHC Form.
(Fill out appropriate constituents)

☐ This shipment includes D001 (other than: A. High-TOC ignitables -or- B. Other ignitables that will be combusted or recovered), D002, D003 and/or D012-D043 characteristic wastes. The wastes will not be managed in CWA/CWA-equivalent/Class I SDWA systems and are identified on the attached LDR Form.

☐ This shipment includes RCRA Section 3004(d) California list wastes, as identified on the attached LDR Form.

☑ This shipment includes other restricted waste as identified below:

Manifest Line Item	Hazardous Waste No.		Subcategory	Treatability Group			
1	D008		N/A	NW*			

NW = Non-Waste Water
*(Incineration)

M L I	LIST CODES, EACH FOLLOWED BY CONFORMING CONSTITUENTS IN PARENTHESIS-ENTER "ALL" WHEN ALL MEET TREATMENT STANDARDS

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Mark Patton — Signature

2/21/12 — Date

CLEAN WATER LIMITED

300 Cherokee Dr.
Dayton, OH 45417
OHD004274031
(800) 543-3670 Customer Service
(937) 268-9059 Fax
trader@cleanwaterltd.com

WASTE MATERIAL PROFILE

Thank you for choosing Clean Water Limited (CWL) to profile and review your waste stream. Please complete this profile for each waste stream for CWL to evaluate.

Please use the tab key to toggle between fields. For more information, please use the hyperlinks included for the specific regulations or visit us at www.cleanwaterltd.com for answers to common questions asked.

A: GENERATOR INFORMATION

Ravenna Army Ammunition Plant			**OH5210020736**
Generator	SIC/NAICS Code		EPA ID
8451 State Route 5/ Building 1037	**Ravenna**	**OH**	**44266**
Site Address	City	State	ZIP
8451 State Route 5/ Building 1037	**Ravenna**	**OH**	**44266**
Mailing Address	City	State	ZIP
Mark Patterson	**330 358-7312**		**330 358-2021**
Contact	Phone		Fax
mark.c.patterson@us.army.mil			
Contact Email Address	Alternate Email Address		

B: BILLING INFORMATION

SWS			**FL0000936831**
Billing Party	SIC/NAICS Code		EPA ID
600 Grand Panama Blvd, Suite 200	**Panama City Beach**	**FL**	**32407**
Site Address	City	State	ZIP
600 Grand Panama Blvd, Suite 200	**Panama City Beach**	**FL**	**32407**
Mailing Address	City	State	ZIP
Wendy Bevis	**800 852-8878**		**850 234-8990**
Contact	Phone		Fax
wendy.bevis@swsenvironmental.com			
Contact Email Address	Alternate Email Address		

C: WASTE CHARACTERIZATION:

i. COMMON NAME OF THE WASTE: **Unknown solids- appeared to be tarry, rubbery texture**

ii. GENERATING PROCESS DESCRIPTION: **Unknown origin**

iii. IS THIS WASTE (Check all that apply):

	Yes	No		Yes	No
Spent Material	☒	☐	Wastewater Treatment Sludge	☐	☒
Spill Material	☐	☒	Radioactive	☐	☒
Virgin Material	☐	☒	Biohazard	☐	☒
Labpack Material	☒	☐	Polymerizable	☐	☒
Off-Spec Product	☐	☒			

iv. IS THIS WASTE SUBJECT TO RCRA REGULATIONS:

		Yes	No
a.	Listed RCRA hazardous waste (F, K, P, U-coded), if applicable specify below	☐	☒
b.	Characteristic RCRA hazardous waste (D-coded), if applicable specify below	☒	☐

RCRA WASTE CODES	Choose an item.	Choose an item.	Choose an item.
Other codes not specified	**D008**		
RCRA SOURCE CODES			
RCRA FORM CODES			

c.	If D009, is the total mercury concentration above 260 ppm?	☐	☒
d.	If a 'D' code chosen above, does the waste contain any Underlying Hazardous Constituents (UHC) above Universal Treatment Standards (UTS)?	☐	☒
e.	If yes to d. above, is the Land Disposal Restriction (LDR) included with this profile?	☐	☒
f.	Does this waste contain dioxin or furan per 40 CFR 261.31?	☐	☒

v. IS THIS WASTE SUBJECT TO ANY OF THE FOLLOWING AIR REGULATIONS:

		Yes	No
a.	40 CFR Part 61, Subpart FF (Benzene NESHAP)?	☐	☒
b.	40 CFR Part 63, Subpart F (SOCMI MACT)?	☐	☒
c.	Process wastewaters required to comply with 40 CFR Part 63.132 – 63.147? If yes, specify the applicable Subpart(s): Choose an item.	☐	☒
d.	If yes to a., b. or c. above, is the generator's certification included with this profile?	☐	☒

vi. DOES THIS WASTE CONTAIN:

	Yes	No	
Asbestos	☐	☒	☐ Friable ☐ Non-friable
Polychlorinated Biphenyls (PCBs)	☐	☒	Concentration, ppm _____
Hexavalent Chromium	☐	☒	Concentration, ppm _____
Halogenated Organic Compounds	☐	☒	Concentration, ppm _____
Volatile Organic Compounds >500 ppm	☐	☒	Concentration, ppm _____
Volatile Organic Hazardous Air Pollutants >500 ppmw (VOHAP as defined in 40 CFR Part 63, Subpart DD)	☐	☒	Concentration, ppm _____

D: COMPOSITION OF THE WASTE:
List all constituents. Total concentration must equal 100%. (Provide Material Safety Data Sheets or laboratory analysis).

Chemical/Compound	Conc.	Units	Chemical/Compound	Conc.	Units
Unknown solids	**100**	☐ ppm or ☒ %	_____	_____	☐ ppm or ☐ %
Lead	**380**	☒ ppm or ☐ %	_____	_____	☐ ppm or ☐ %
_____	_____	☐ ppm or ☐ %	_____	_____	☐ ppm or ☐ %
_____	_____	☐ ppm or ☐ %	_____	_____	☐ ppm or ☐ %
_____	_____	☐ ppm or ☐ %	_____	_____	☐ ppm or ☐ %

Composition is based on: ☒ Generator Knowledge ☐ Total/Ultimate Analysis ☒ TCLP Analysis

E: PHYSICAL DATA:

Water %	**0**	Specific Gravity	**Unknown**
Non-aqueous Liquid %	**0**	Number of Layers (Phases)	**1**
Oil %	**0**	Color	**Black/brown**
Emulsion %	**0**	Flash Point, °F	**>180**
Solid %	**100**	Btu/lb	**Unknown**
Gaseous %	**0**	pH	**5.5**
Chloride %	**0**		

Provide a description and intensity of waste material odors **mild**

F: PACKAGING/QUANTITY:
NON-BULK CONTAINERS: Specify (1) volume, (2) type, and (3) quantity and frequency of generation.

1)	☐ 1 gal	☐ 5 gal	☐ 15 gal	☐ 30 gal	☐ 55 gal	☐ Other _____
2)	☒ Drum	☐ Cubic yard	☐ Box	☐ Bag	☐ Tote	☐ Other _____
3)	Quantity **1**	Per:	☐ Month	☐ Quarter	☐ Year	☒ Once

BULK CONTAINERS: Specify (1) bulk vessel, (2) quantity units, and (3) quantity and frequency of generation.

1)	☐ Tanker	☐ Vac truck	☐ Roll-off	☐ Dump Trailer	☐ Closed-top	☐ Open-top	
2)	☐ Gallons	☐ Pounds	☐ Yards	☐ Tons			
3)	Quantity _____	Per:		☐ Month	☐ Quarter	☐ Year	☐ Once

G: DOT SHIPPING INFORMATION: Enter the PROPER DOT shipping name from 49 CR 172.101 table.
Waste, Lead Compounds, Soluble, N.O.S.

Hazard Class **9.0** UN/NA Code **3077** PG **III** RQ: ☐ Yes ☒ No CLIN: **NA**

H: ATTACHMENTS: If attachments added, please specify the name of each document attached:
TCLP Analysis

I: CERTIFICATION:
I hereby certify that all information submitted herein and all attachments are complete and accurate. All known and suspected hazards associated with this waste stream have been disclosed on this profile.

Printed Name **Mark C. Patterson** **Signature**** Mark Patterson **Date** **2-21-201**

****Signatures other than the generator MUST submit an approved authorization letter from the generator in order to validate this profile.**

Internal Use Only

Sales Rep: Jim Davis Sales Date: 2-13-2012 Process Code: _____
Trans Type Requested: Route Truck _____ Vac Truck _____ Turbo Truck _____
Mileage: _____ Length of Hose Needed: _____

Pruden Non HW

CLEAN WATER LIMITED

300 Cherokee Dr.
Dayton, OH 45417
OHD004274031
(800) 543-3670 Customer Service
(937) 268-9059 Fax
trader@cleanwaterltd.com

WASTE MATERIAL PROFILE

Thank you for choosing Clean Water Limited (CWL) to profile and review your waste stream. Please complete this profile for each waste stream for CWL to evaluate.

Please use the tab key to toggle between fields. For more information, please use the hyperlinks included for the specific regulations or visit us at www.cleanwaterltd.com for answers to common questions asked.

A: GENERATOR INFORMATION

Ravenna Army Ammunition Plant			**OH5210020736**
Generator	SIC/NAICS Code		EPA ID
8451 State Route 5/ Building 1037	**Ravenna**	**OH**	**44266**
Site Address	City	State	ZIP
8451 State Route 5/ Building 1037	**Ravenna**	**OH**	**44266**
Mailing Address	City	State	ZIP
Mark Patterson	**330 358-7312**	**330 358-2021**	
Contact	Phone	Fax	
mark.c.patterson@us.army.mil			
Contact Email Address	Alternate Email Address		

B: BILLING INFORMATION

SWS Environmental Services			**FL0000936831**
Billing Party	SIC/NAICS Code		EPA ID
600 Grand Panama Blvd, Suite 200	**Panama City Beach**	**FL**	**32407**
Site Address	City	State	ZIP
600 Grand Panama Blvd, Suite 200	**Panama City Beach**	**FL**	**32407**
Mailing Address	City	State	ZIP
Wendy Bevis	**800 852-8878**	**850 234-8990**	
Contact	Phone	Fax	
wendy.bevis@swsenvironmental.com			
Contact Email Address	Alternate Email Address		

C: WASTE CHARACTERIZATION:

i. COMMON NAME OF THE WASTE: **Unknown solids- seemed to be dirt, wood, squirrrel nest**

ii. GENERATING PROCESS DESCRIPTION: **Unknown origin**

iii. IS THIS WASTE (Check all that apply):

	Yes	No		Yes	No
Spent Material	☒	☐	Wastewater Treatment Sludge	☐	☒
Spill Material	☐	☒	Radioactive	☐	☒
Virgin Material	☐	☒	Biohazard	☐	☒
Labpack Material	☒	☐	Polymerizable	☐	☒
Off-Spec Product	☐	☒			

iv. IS THIS WASTE SUBJECT TO RCRA REGULATIONS:

		Yes	No
a.	Listed RCRA hazardous waste (F, K, P, U-coded), if applicable specify below	☐	☒
b.	Characteristic RCRA hazardous waste (D-coded), if applicable specify below	☐	☒

RCRA WASTE CODES	Choose an item.	Choose an item.	Choose an item.
Other codes not specified			
RCRA SOURCE CODES			
RCRA FORM CODES			

c.	If D009, is the total mercury concentration above 260 ppm?	☐	☒
d.	If a 'D' code chosen above, does the waste contain any Underlying Hazardous Constituents (UHC) above Universal Treatment Standards (UTS)?	☐	☒
e.	If yes to d. above, is the Land Disposal Restriction (LDR) included with this profile?	☐	☒
f.	Does this waste contain dioxin or furan per 40 CFR 261.31?	☐	☒

v. IS THIS WASTE SUBJECT TO ANY OF THE FOLLOWING AIR REGULATIONS:

		Yes	No
a.	40 CFR Part 61, Subpart FF (Benzene NESHAP)?	☐	☒
b.	40 CFR Part 63, Subpart F (SOCMI MACT)?	☐	☒
c.	Process wastewaters required to comply with 40 CFR Part 63.132 – 63.147? If yes, specify the applicable Subpart(s): Choose an item.	☐	☒
d.	If yes to a., b. or c. above, is the generator's certification included with this profile?	☐	☒

vi. DOES THIS WASTE CONTAIN:

	Yes	No	
Asbestos	☐	☒	☐ Friable ☐ Non-friable
Polychlorinated Biphenyls (PCBs)	☐	☒	Concentration, ppm _____
Hexavalent Chromium	☐	☒	Concentration, ppm _____
Halogenated Organic Compounds	☐	☒	Concentration, ppm _____
Volatile Organic Compounds >500 ppm	☐	☒	Concentration, ppm _____
Volatile Organic Hazardous Air Pollutants >500 ppmw (VOHAP as defined in 40 CFR Part 63, Subpart DD)	☐	☒	Concentration, ppm _____

D: COMPOSITION OF THE WASTE:
List all constituents. Total concentration must equal 100%. (Provide Material Safety Data Sheets or laboratory analysis).

Chemical/Compound	Conc.	Units	Chemical/Compound	Conc.	Units
Unknown solids	**100**	☐ ppm or ☒ %			☐ ppm or ☐ %
		☐ ppm or ☐ %			☐ ppm or ☐ %
		☐ ppm or ☐ %			☐ ppm or ☐ %
		☐ ppm or ☐ %			☐ ppm or ☐ %
		☐ ppm or ☐ %			☐ ppm or ☐ %

Composition is based on: ☒ Generator Knowledge ☐ Total/Ultimate Analysis ☒ TCLP Analysis

E: PHYSICAL DATA:

Water %	**0**	Specific Gravity	**Unknown**
Non-aqueous Liquid %	**0**	Number of Layers (Phases)	**1**
Oil %	**0**	Color	**Brown**
Emulsion %	**0**	Flash Point, °F	**>180**
Solid %	**100**	Btu/lb	**Unknown**
Gaseous %	**0**	pH	**7.65**
Chloride %	**0**		

Provide a description and intensity of waste material odors **mild**

F: PACKAGING/QUANTITY:
NON-BULK CONTAINERS: Specify (1) volume, (2) type, and (3) quantity and frequency of generation.

1)	☐ 1 gal	☐ 5 gal	☐ 15 gal	☐ 30 gal	☐ 55 gal	☐ Other _____	
2)	☒ Drum	☐ Cubic yard	☐ Box	☐ Bag	☐ Tote	☐ Other _____	
3)	Quantity **1**	Per:	☐ Month	☐ Quarter	☐ Year	☒ Once	

BULK CONTAINERS: Specify (1) bulk vessel, (2) quantity units, and (3) quantity and frequency of generation.

1)	☐ Tanker	☐ Vac truck	☐ Roll-off	☐ Dump Trailer	☐ Closed-top	☐ Open-top	
2)	☐ Gallons	☐ Pounds	☐ Yards	☐ Tons			
3)	Quantity _____	Per:	☐ Month	☐ Quarter	☐ Year	☐ Once	

G: DOT SHIPPING INFORMATION: Enter the PROPER DOT shipping name from 49 CR 172.101 table.
Non Regulated Waste

Hazard Class _____ UN/NA Code _____ PG _____ RQ: ☐ Yes ☐ No CLIN: _____

H: ATTACHMENTS: If attachments added, please specify the name of each document attached:
TCLP Analysis Drum #2

I: CERTIFICATION:
I hereby certify that all information submitted herein and all attachments are complete and accurate. All known and suspected hazards associated with this waste stream have been disclosed on this profile.

Printed Name **Mark C. Patterson** **Signature**** Mark C. Patterson **Date** **2-15-201**

****Signatures other than the generator MUST submit an approved authorization letter from the generator in order to validate this profile.**

Internal Use Only

Sales Rep: Jim Davis Sales Date: 2-13-2012 Process Code: _____

Trans Type Requested: Route Truck _____ Vac Truck _____ Turbo Truck _____

Mileage: _____ Length of Hose Needed: _____

NH-181 HW-044

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: OH5210020736
2. Page 1 of: 1
3. Emergency Response Phone: 877-742-4215
4. Manifest Tracking Number: 008292068 JJK

GENERATOR

5. Generator's Name and Mailing Address: Ravenna Army Ammunition Plant, 8451 St. Rt. 5 / Bldg. 1037, Ravenna, OH 44266
Generator's Site Address (if different than mailing address)
Generator's Phone: 330-358-7312

6. Transporter 1 Company Name: SWS Environmental Services
U.S. EPA ID Number: FL0000936831

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address: Clean Waters Ltd., 300 Cherokee Dr., Dayton, OH 45417
U.S. EPA ID Number: OHD004274031
Facility's Phone: 800-543-3670

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN 3077, Hazardous Waste, Solid, n.o.s., (containing lead compounds), 9, PG III	001	DM	200	P	D008		
	2. Non regulated solid Waste	001	DM	100	P			
	3.							
	4.							

14. Special Handling Instructions and Additional Information
SWS Project # EN3-202-1351

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X Mark Patterson
Signature: X Mark Patterson
Month: 2 Day: 21 Year: 12

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Cormack
Signature:
Month: 2 Day: 16 Year: 12

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Angela Redmond
Signature: Angela Redmond
Month: 2 Day: 28 Year: 12

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

2/21

Clean Water Limited

LAND DISPOSAL RESTRICTION CERTIFICATION FORM

Generator Name Ravenna Army Ammunition Plant, OH Manifest No 8292068 JJK Page 1 of 1

The waste(s) identified below comply with the applicable treatment standards in 40 CFR 268, Subpart D and the applicable prohibition levels specified in 40 CFR 268.32 or RCRA 3004(d). The required information applicable to each waste is identified below.

☐ This shipment includes F001-F005 spent solvents, as identified on the attached sheet.
(Attach LDR Notification Form and check regulated constituents)

☐ This shipment includes F039 multisource leachate, as identified on the attached UTS\UHC Form.
(Fill out appropriate constituents)

☐ This shipment includes D001 (other than: A. High-TOC ignitables -or- B. Other ignitables that will be combusted or recovered), D002, D003 and/or D012-D043 characteristic wastes. The wastes will not be managed in CWA/CWA-equivalent/Class I SDWA systems and are identified on the attached LDR Form.

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Manifest Line Item	Hazardous Waste No.		Subcategory	Treatability Group			
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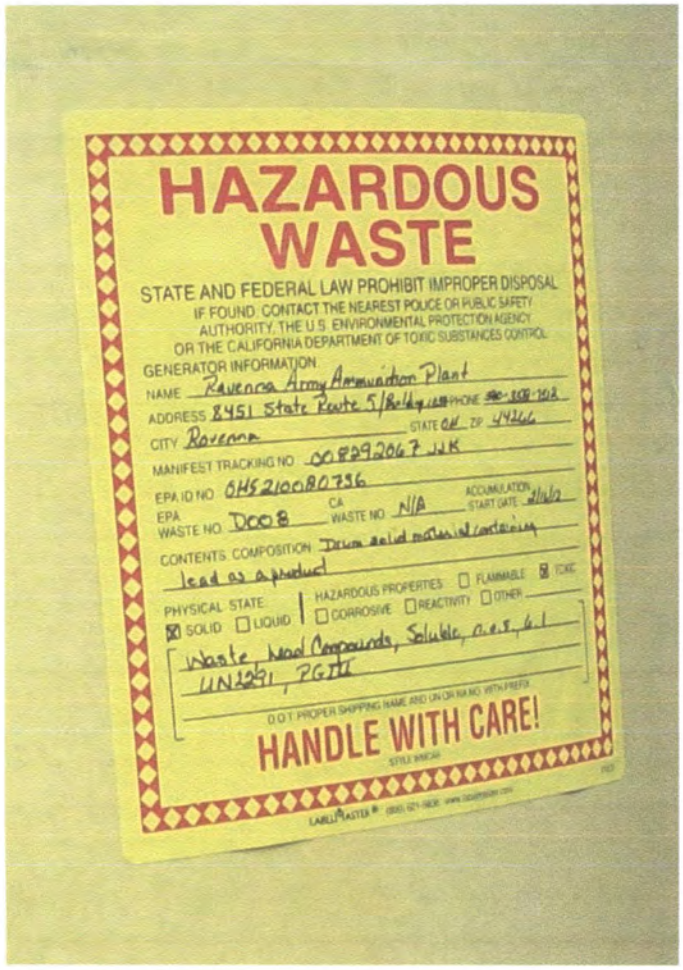
NW = Non-Waste Water
*(Incineration)

MLI	LIST CODES, EACH FOLLOWED BY CONFORMING CONSTITUENTS IN PARENTHESIS-ENTER "ALL" WHEN ALL MEET TREATMENT STANDARDS

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Mark Patterson — Signature

2/21/12 — Date


HAZARDOUS WASTE
STATE AND FEDERAL LAW PROHIBIT IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL
GENERATOR INFORMATION
NAME Ravenna Army Ammunition Plant
ADDRESS 8451 State Route 5/Building 1037 PHONE 580-358-7012
CITY Ravenna STATE OH ZIP 44266
MANIFEST TRACKING NO 008292067 JJK
EPA ID NO OHS210080736
EPA WASTE NO D008 CA WASTE NO N/A ACCUMULATION START DATE 2/16/12
CONTENTS COMPOSITION Drum solid material containing lead as a product
PHYSICAL STATE ☒ SOLID ☐ LIQUID
HAZARDOUS PROPERTIES ☐ FLAMMABLE ☒ TOXIC ☐ CORROSIVE ☐ REACTIVITY ☐ OTHER
Waste, Lead Compounds, Soluble, n.o.s., 6.1
UN2291, PGIII
D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX
HANDLE WITH CARE!
STILL WHICH
LABELMASTER


HOW AM I DRIVING?
1-800-800-9577 015 KC
DRUM
SALVAMENTO
02/16/2011


NON-HAZARDOUS WASTE
GENERATOR INFORMATION (optional)
SHIPPER Ravenna Army Ammunition Plant
ADDRESS 8451 State Route 5/Building 1037
CITY, STATE, ZIP Ravenna, OH 44266
CONTENTS Non Regulated Solid Waste
NON-HAZARDOUS WASTE


DRUM
SALVAMENTO
02/16/2011

Appendix K – Fuze and Booster GW Data

Notes for all tables without a table-specific legend:

NS = no standard
NT = not tested
All inorganics are filtered, all organics are not filtered
* There are no background levels for organic constituents
J = estimated result. Results have been qualified "J"
B = organic or inorganic analysis when the analyte is found in the method blank or any of the field blanks
R = Rejected data
U = analyzed but not detected at or above the reporting limit
Bold = inorganic constituent detected above Facility-Wide background levels
Italics = inorganic constituent detected below the Facility-Wide background levels
Shaded boxes indicate any constituent, which does not have a background value, detected above the reporting limit.

Table 4-3. Summary of Constituents Detected - January, April and July 2008

Area	Well Number	Monitored Zone	Compound or Element Detected	Jan-08 Level (ug/L)	Apr-08 Level (ug/L)	Jul-08 Level (ug/L)	MCL (ug/L)	Region 9 PRG (ug/L)	Facility-Wide Background (ug/L)
Erie Burning Grounds	EBGmw-129	Unconsolidated	2-Nitrotoluene	NT	0.12 J	0.1 U	NS	61	*
			Barium	NT	*25.3 J*	*26.7 J*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	10 U	1.9 J	NS	4.8	*
			Calcium	NT	*47400 J*	*45700 J*	NS	NS	115000
			Iron	NT	5750	5370	300	11000	279
			Magnesium	NT	*11100 J*	*10600*	NS	NS	43300
			Manganese	NT	*655 J*	*558*	50	880	1020
			Perchlorate	NT	NT	0.038 J	NS	3.6	*
			Potassium	NT	*898 J*	*897 J*	NS	NS	2890
			Sodium	NT	*2940 J*	*2910 J*	NS	NS	45700
			Zinc	NT	*6.5 J*	*5.9 JB*	5000	11000	60.9
Erie Burning Grounds	EBGmw-130	Unconsolidated	2-Butanone	NT	0.59 J	10 U	NS	1900	*
			Arsenic	NT	*4.5 J*	*7.1 J*	10	0.045	11.7
			Barium	NT	*37.6 J*	*56.9 J*	2000	2600	82.1
			Calcium	NT	*73700 J*	*70800*	NS	NS	115000
			Cobalt	NT	2.2 J	5 U	NS	730	0
			Iron	NT	2980	3370	300	11000	279
			Magnesium	NT	*16600 J*	*15700*	NS	NS	43300
			Manganese	NT	*762 J*	*614*	50	880	1020
			Nickel	NT	10 U	3.7 J	NS	730	0
			Perchlorate	NT	NT	0.048 J	NS	3.6	*
			Potassium	NT	*2730 J*	*2440 J*	NS	NS	2890
			Sodium	NT	*3840 J*	*4130 J*	NS	NS	45700
			Zinc	NT	*4.9 J*	*4.6 J*	5000	11000	60.9
Fuze & Booster Quarry	FBQmw-166	Unconsolidated	2,6-Dinitrotoluene	NT	0.097 U	0.064 J	NS	36	*
			Acetone	NT	10 JB	10 U	NS	610	*
			Barium	NT	*32.1 J*	*34.6 J*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	10 U	6.2 J	NS	4.8	*
			Calcium	NT	*95300 J*	*95800 J*	NS	NS	115000
			Chromium	NT	5 U	2.5 J	100	NS	0
			Iron	NT	50 U	*28 J*	300	11000	279
			Magnesium	NT	*35600 J*	*34100*	NS	NS	43300
			Manganese	NT	*21.7 J*	*111*	50	880	1020
			Nickel	NT	10 U	3.4 J	NS	730	0
			Perchlorate	NT	NT	0.038 J	NS	3.6	*
			Potassium	NT	*815 J*	*1040*	NS	NS	2890
			Sodium	NT	*14000 J*	*14300 J*	NS	NS	45700
			Zinc	NT	10 U	*14.5 J*	5000	11000	60.9
Fuze & Booster Quarry	FBQmw-167	Unconsolidated	Antimony	NT	0.13 J	*2 U*	6	15	0
			Barium	NT	*63.9 J*	*54.6 J*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	2.5 J	1.6 J	NS	4.8	*
			Cadmium	NT	0.16 J	0.13 J	5	NS	0
			Calcium	NT	*29500 J*	*28200 J*	NS	NS	115000
			Cobalt	NT	6.8 J	6.9 J	NS	730	0
			Iron	NT	*15900*	*15100*	300	11000	279
			Magnesium	NT	*13700 J*	*12700*	NS	NS	43300
			Manganese	NT	*2220 J*	*2070*	50	880	1020
			Nickel	NT	7.6 J	9.4 J	NS	730	0
			Perchlorate	NT	NT	0.04 J	NS	3.6	*
			Potassium	NT	*1650 J*	*1630*	NS	NS	2890
			Sodium	NT	*33400 J*	*32200*	NS	NS	45700
			Zinc	NT	*17.7*	*17.6 JB*	5000	11000	60.9
Fuze & Booster Quarry	FBQmw-168	Bedrock	Acetone	NT	10 JB	10 JB	NS	610	*
			Antimony	NT	0.33 J	0.54 J	6	15	0
			Barium	NT	*28.1 J*	*25.9 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	10 U	4.1 J	NS	4.8	*
			Calcium	NT	*40100 J*	*44000 J*	NS	NS	53100
			Iron	NT	50 U	*63.2*	300	11000	1430
			Magnesium	NT	*7510 J*	*7520*	NS	NS	15000
			Manganese	NT	*1.2 J*	*8 J*	50	880	1340
			Perchlorate	NT	NT	0.039 J	NS	3.6	*
			Potassium	NT	*745 J*	*877 J*	NS	NS	5770
			Sodium	NT	*1730 J*	*1770 J*	NS	NS	51400
			Zinc	NT	10 U	*10.7 J*	5000	11000	52.3
Fuze & Booster Quarry	FBQmw-169	Bedrock	Aluminum	NT	36.5 J	50 U	200	36000	0
			Barium	NT	*54.8 J*	*49.8 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	2.9 J	1.4 J	NS	4.8	*
			Cadmium	NT	0.86	0.79 J	5	NS	0
			Calcium	NT	*26300 J*	*24400 J*	NS	NS	53100
			Cobalt	NT	12.1 J	12.2 J	NS	730	0
			Iron	NT	961	1300	300	11000	1430
			Magnesium	NT	18000 J	16800	NS	NS	15000
			Manganese	NT	7070 J	6370	50	880	1340
			Nickel	NT	*13.2 J*	*15 J*	NS	730	83.4
			Nitrocellulose	NT	0.5 UJ	0.13 J	NS	NS	*
			Perchlorate	NT	NT	0.059	NS	3.6	*
			Potassium	NT	*1990 J*	*2010*	NS	NS	5770
			Sodium	NT	*31400 J*	*30800*	NS	NS	51400
			Zinc	NT	*9.3 J*	*11 JB*	5000	11000	52.3

Table 4-3. Summary of Constituents Detected - January, April and July 2008

Area	Well Number	Monitored Zone	Compound or Element Detected	Jan-08 Level (ug/L)	Apr-08 Level (ug/L)	Jul-08 Level (ug/L)	MCL (ug/L)	Region 9 PRG (ug/L)	Facility-Wide Background (ug/L)
Fuze & Booster Quarry	FBQmw-170	Bedrock	4-Amino-2,6-Dinitrotoluene	NT	0.063 J	0.1 U	NS	NS	*
			Acetone	NT	10 JB	10 U	NS	610	*
			Aluminum	NT	28.1 J	22.3 J	200	36000	0
			Barium	NT	*40.9 J*	*34.3 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	0.97 J	2.1 J	NS	4.8	*
			Cadmium	NT	0.14 J	5 U	5	NS	0
			Calcium	NT	8200 J	8450 J	NS	NS	53100
			Magnesium	NT	*2970 J*	*2950*	NS	NS	15000
			Manganese	NT	*94.2 J*	*68.4*	50	880	1340
			Nickel	NT	*4.5 J*	*5.5 J*	NS	730	83.4
			Nitrobenzene	NT	0.054 J	0.1 U	NS	3	*
			Perchlorate	NT	NT	0.19	NS	3.6	*
			Potassium	NT	*688 J*	*729 J*	NS	NS	5770
			Sodium	NT	*7960 J*	*8720*	NS	NS	51400
			Zinc	NT	*15.8*	*15.2 JB*	5000	11000	52.3
Fuze & Booster Quarry	FBQmw-171	Bedrock	2,6-Dinitrotoluene	NT	0.052 J	0.1 U	NS	36	*
			Acetone	NT	10 JB	10 U	NS	610	*
			Barium	NT	*30 J*	*31.6 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	4.1 J	1.1 J	NS	4.8	*
			Calcium	NT	*16600 J*	*17600 J*	NS	NS	53100
			Cyanide	NT	0.01 U	0.0055 JB	NS	730	*
			Magnesium	NT	*5420 J*	*5620*	NS	NS	15000
			Manganese	NT	*29.7 J*	*27.3*	50	880	1340
			Perchlorate	NT	NT	0.078	NS	3.6	*
			Potassium	NT	*822 J*	*890 J*	NS	NS	5770
			Sodium	NT	*1000 J*	*1530 J*	NS	NS	51400
			Zinc	NT	*12.5*	*15.7 J*	5000	11000	52.3
Fuze & Booster Quarry	FBQmw-172	Bedrock	2,6-Dinitrotoluene	NT	0.063 J	0.1 U	NS	36	*
			Barium	NT	*48.2 J*	*38.6 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	10 U	2.1 J	NS	4.8	*
			Calcium	NT	90500 J	81000 J	NS	NS	53100
			Cobalt	NT	2 J	1.8 J	NS	730	0
			Cyanide	NT	0.01 U	0.005 J	NS	6.2	*
			Iron	NT	*153*	*31.4 J*	300	11000	1430
			Magnesium	NT	40800 J	35500	NS	NS	15000
			Manganese	NT	2370 J	2370	50	880	1340
			Mercury	NT	0.2 U	0.16 J	2	11	0
			Nickel	NT	10 U	*3.2 J*	NS	730	83.4
			Perchlorate	NT	NT	0.024 J	NS	3.6	*
			Potassium	NT	*908 J*	*762 J*	NS	NS	5770
			Sodium	NT	*8030 J*	*6330*	NS	NS	51400
			Thallium	NT	1 U	0.28 J	2	2	0
			Zinc	NT	10 U	*5 JB*	5000	11000	52.3
Fuze & Booster Quarry	FBQmw-173	Bedrock	2,4,6-TNT	NT	0.09 J	0.08 J	NS	2.2	*
			2-Amino-4,6-dinitrotoluene	NT	0.31	0.13	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	NT	0.39	0.1 U	NS	NS	*
			Barium	NT	*9.5 J*	*8.8 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	0.94 J	3.6 J	NS	4.8	*
			Calcium	NT	*8180 J*	*8310 J*	NS	NS	53100
			Cobalt	NT	5 U	2.8 J	NS	730	0
			Iron	NT	5190	*1240*	300	11000	1430
			Magnesium	NT	*3310 J*	*3210*	NS	NS	15000
			Manganese	NT	*1260 J*	*1190*	50	880	1340
			Perchlorate	NT	NT	0.035 J	NS	3.6	*
			Potassium	NT	*1240 J*	*1190*	NS	NS	5770
			Sodium	NT	*1300 J*	*1490*	NS	NS	51400
			Zinc	NT	*7.6 J*	*4.9 JB*	5000	11000	52.3
Fuze & Booster Quarry	FBQmw-174	Bedrock	2,4,6-TNT	NT	62	12 J	NS	2.2	*
			2,4-Dinitrotoluene	NT	1 U	0.4 J	NS	73	*
			2-Amino-4,6-dinitrotoluene	NT	21	21 J	NS	NS	*
			4-Amino-2,6-Dinitrotoluene	NT	21	23 J	NS	NS	*
			Acetone	NT	10 JB	10 U	NS	610	*
			alpha-Chordane	NT	0.018 J	0.03 U	NS	0.19	*
			Barium	NT	*13.8 J*	*16.5 J*	2000	2600	256
			beta-BHC	NT	0.24 J	0.03 U	NS	0.037	*
			bis(2-Ethylhexyl) phthalate	NT	2 U	1.5 J	NS	4.8	*
			Calcium	NT	*6340 J*	*8500 J*	NS	NS	53100
			Iron	NT	50 U	*26.6 J*	300	11000	1430
			Magnesium	NT	*2150 J*	*2630*	NS	NS	15000
			Manganese	NT	*13.5 J*	*3.9 J*	50	880	1340
			Perchlorate	NT	NT	0.094	NS	3.6	*
			Potassium	NT	*815 J*	*1020*	NS	NS	5770
			Zinc	NT	*13.9*	*17.6*	5000	11000	52.3

Table 4-3. Summary of Constituents Detected - January, April and July 2008

Area	Well Number	Monitored Zone	Compound or Element Detected	Jan-08 Level (ug/L)	Apr-08 Level (ug/L)	Jul-08 Level (ug/L)	MCL (ug/L)	Region 9 PRG (ug/L)	Facility-Wide Background (ug/L)
Fuse & Booster Quarry	FBQmw-175	Bedrock	Antimony	NT	0.17 J	2 U	6	15	0
			Barium	NT	*6.8 J*	*5.1 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	10 U	1.9 J	NS	4.8	*
			Calcium	NT	*8310 J*	*9300 J*	NS	NS	53100
			Cyanide	NT	0.01 U	0.0062 JB	NS	730	*
			Magnesium	NT	*4470 J*	*4860*	NS	NS	15000
			Manganese	NT	*47 J*	*34.1*	50	880	1340
			Nickel	NT	*9.6 J*	*17.5*	NS	730	83.4
			Perchlorate	NT	NT	0.11	NS	3.6	*
			Potassium	NT	*622 J*	*593 J*	NS	NS	5770
			Sodium	NT	*4410 J*	*2430 J*	NS	NS	51400
			Thallium	NT	0.19 J	1 U	2	2	0
			Zinc	NT	*10*	*14.4 J*	5000	11000	52.3
Fuse & Booster Quarry	FBQmw-176	Unconsolidated	Acetone	NT	10 JB	10 U	NS	610	*
			Barium	NT	*52.8 J*	*51.2 J*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	10 U	2.1 J	NS	4.8	*
			Calcium	NT	*8880 J*	*8900 J*	NS	NS	115000
			Cobalt	NT	3.2 J	3.1 J	NS	730	0
			Iron	NT	8480	9250	300	11000	279
			Magnesium	NT	3240 J	3160	NS	NS	43300
			Manganese	NT	1440 J	1400	50	880	1020
			Potassium	NT	*834 J*	*872 J*	NS	NS	2890
			Sodium	NT	*1920 J*	*2220 J*	NS	NS	45700
			Zinc	NT	*4.2 J*	*5.5 J*	5000	11000	60.9
Fuse & Booster Quarry	FBQmw-177	Bedrock	Barium	NT	*10.4 J*	*10 J*	2000	2600	256
			bis(2-Ethylhexyl) phthalate	NT	10 U	2.2 J	NS	4.8	*
			Calcium	NT	*41800 J*	*42000 J*	NS	NS	53100
			Iron	NT	50 U	*28.2 J*	300	11000	1430
			Magnesium	NT	*11700 J*	*11300*	NS	NS	15000
			Manganese	NT	*1130 J*	1380	50	880	1340
			Perchlorate	NT	NT	0.027 J	NS	3.6	*
			Potassium	NT	*1080 J*	*1330*	NS	NS	5770
			Sodium	NT	*2870 J*	*2960 J*	NS	NS	51400
			Zinc	NT	10 U	*7.1 J*	5000	11000	52.3
Landfill North of Winklepeck	LNWmw-024	Unconsolidated	Barium	NT	*38.4 J*	*35.1*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	10 U	2.2 J	NS	4.8	*
			Calcium	NT	*83000 J*	*84800*	NS	NS	115000
			Magnesium	NT	*37000 J*	*36800*	NS	NS	43300
			Manganese	NT	*3.9 J*	*5 J*	50	880	1020
			Nitrobenzene	NT	0.066 J	0.12 J	NS	3	*
			Potassium	NT	*1150 J*	*1050*	NS	NS	2890
			Sodium	NT	*9930 J*	*7910*	NS	NS	45700
			Thallium	NT	0.2 J	1 U	2	2	0
			Zinc	NT	10 U	*3.3 JB*	5000	11000	60.9
Landfill North of Winklepeck	LNWmw-025	Unconsolidated	4,4'-DDT	NT	0.03 U	0.024 J	NS	0.2	*
			Aluminum	NT	50 U	742 J	200	36000	0
			Arsenic	NT	*4.4 J*	45	10	0.045	11.7
			Barium	NT	*38.4 J*	*41.6*	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	1.8 J	2.3 J	NS	4.8	*
			Calcium	NT	*37700 J*	*37000*	NS	NS	115000
			Cyanide	NT	0.01 U	0.0099 J	NS	730	*
			Iron	NT	1460	18900	300	11000	279
			Magnesium	NT	*11300 J*	*11000*	NS	NS	43300
			Manganese	NT	*942 J*	*812*	50	880	1020
			Mercury	NT	0.2 U	0.14 JB	2	11	0
			Potassium	NT	*876 J*	*1120*	NS	NS	2890
			Sodium	NT	*6630 J*	*6600*	NS	NS	45700
			Vanadium	NT	*10 U*	1.5 J	NS	36	0
			Zinc	NT	*2.5 J*	*5.4 JB*	5000	11000	60.9
Landfill North of Winklepeck	LNWmw-026	Unconsolidated	4-Nitrotoluene	NT	0.5 UJ	0.27 J	NS	61	*
			Arsenic	NT	5 U	*3.2 J*	10	0.045	11.7
			Barium	NT	103 J	94.7	2000	2600	82.1
			bis(2-Ethylhexyl) phthalate	NT	1.3 J	3.1 J	NS	4.8	*
			Calcium	NT	*40100 J*	*38900*	NS	NS	115000
			Iron	NT	50 U	*36.5 J*	300	11000	279
			Magnesium	NT	*9490 J*	*8940*	NS	NS	43300
			Manganese	NT	*14.1 J*	*61*	50	880	1020
			Potassium	NT	*1180 J*	*1140*	NS	NS	2890
			Sodium	NT	*10800 J*	*9610*	NS	NS	45700
			Zinc	NT	*2.4 J*	*9.8 JB*	5000	11000	60.9

Table 4-5. Exceedences of MCLs and Region 9 PRGs

Area	Well Number	Compound or Element Detected	Oct-07 Level (ug/L)	Jan-08 Level (ug/L)	Apr-08 Level (ug/L)	Jul-08 Level (ug/L)	MCL (ug/L)	Region 9 PRG (ug/L)
Erie Burning Grounds	EBGmw-123	Arsenic	NT	NT	*31.6 J*	*38.4*	10	0.045
		Iron	NT	NT	3500	5190	300	11000
		Manganese	NT	NT	154 J	135	50	880
	EBGmw-124	Arsenic	NT	NT	*42.3 J*	*40.1*	10	0.045
		Iron	NT	NT	3130	3880	300	11000
		Manganese	NT	NT	55.6 J	66.8	50	880
	EBGmw-125	Arsenic	NT	NT	5 U	8.7 J	10	0.045
		Iron	NT	NT	6330	8710	300	11000
		Manganese	NT	NT	438 J	460	50	880
	EBGmw-126	Arsenic	NT	NT	*13.9 J*	*23.1*	10	0.045
		Iron	NT	NT	5230	7750	300	11000
		Manganese	NT	NT	202 J	208	50	880
	EBGmw-127	Arsenic	NT	NT	*14 J*	*11.7 J*	10	0.045
		Iron	NT	NT	1620	1190	300	11000
	EBGmw-128	Arsenic	NT	NT	*5 J*	*11*	10	0.045
		Iron	NT	NT	212	902	300	11000
		Manganese	NT	NT	152 J	315	50	880
	EBGmw-129	Iron	NT	NT	5750	5370	300	11000
		Manganese	NT	NT	655 J	558	50	880
		bis(2-Ethylhexyl) phthalate	NT	NT	10 U	*1.9 J*	NS	4.8
	EBGmw-130	Arsenic	NT	NT	*4.5 J*	*7.1 J*	10	0.045
		Iron	NT	NT	2980	3370	300	11000
		Manganese	NT	NT	762 J	614	50	880
Fuze & Booster	FBQmw-166	bis(2-Ethylhexyl) phthalate	NT	NT	10 U	*6.2 J*	NS	4.8
		Manganese	NT	NT	21.7 J	111	50	880
	FBQmw-167	Iron	NT	NT	*15900*	*15100*	300	11000
	FBQmw-170	Manganese	NT	NT	94.2 J	68.4	50	880
	FBQmw-172	Iron	NT	NT	153	31.4 J	300	11000
		Manganese	NT	NT	*2370 J*	*2370*	50	880
	FBQmw-173	Iron	NT	NT	5190	1240	300	11000
		Manganese	NT	NT	*1260 J*	*1190*	50	880
	FBQmw-174	beta-BHC	NT	NT	*0.24 J*	0.03 U	NS	0.037
	FBQmw-176	Iron	NT	NT	8480	9250	300	11000
		Manganese	NT	NT	*1440 J*	*1400*	50	880
	FBQmw-177	Manganese	NT	NT	*1130 J*	*1380*	50	880
Landfill North	LNWmw-025	Aluminum	NT	NT	50 U	742 J	200	36000
		Arsenic	NT	NT	*4.4 J*	*45*	10	0.045
		Iron	NT	NT	1460	*18900*	300	11000
		Manganese	NT	NT	*942 J*	812	50	880
	LNWmw-026	Arsenic	NT	NT	5 U	*3.2 J*	10	0.045
	LNWmw-027	Arsenic	NT	NT	5 U	*4.3 J*	10	0.045
		Manganese	NT	NT	230 J	261	50	880
NACA Test Area	NTAmw-107	Arsenic	NT	NT	*11.5 J*	*13.2*	10	0.045
		Iron	NT	NT	223	418	300	11000
		Manganese	NT	NT	198 J	253	50	880
	NTAmw-109	Iron	NT	NT	1330	1420	300	11000
		Manganese	NT	NT	46.1 J	60.6	50	880
	NTAmw-110	Aluminum	NT	NT	1100	50 U	200	36000
		Arsenic	NT	NT	*10.8 J*	*13.9*	10	0.045
		Iron	NT	NT	1460	101	300	11000
		Manganese	NT	NT	128 J	194	50	880
	NTAmw-111	Manganese	NT	NT	84.4 J	155	50	880
	NTAmw-112	Arsenic	NT	NT	*16.3 J*	*13.4 J*	10	0.045
		Iron	NT	NT	1600	1820	300	11000
		Manganese	NT	NT	606 J	692 J	50	880
	NTAmw-113	Arsenic	NT	NT	*11.2 J*	*12.5 J*	10	0.045
		Iron	NT	NT	495	915	300	11000
	NTAmw-114	Arsenic	NT	NT	*3.9 J*	*7.3 J*	10	0.045
		Iron	NT	NT	62.6	549	300	11000
		Manganese	NT	NT	519 J	587	50	880
	NTAmw-117	Manganese	NT	NT	143 J	193	50	880

Area	Well Number	Monitored Zone	Analyte	Oct-10 Level (µg/L)	Jan-11 Level (µg/L)	Apr-11 Level (µg/L)	Jul-11 Level (µg/L)	MCL (µg/L)	Region 9 PRG (µg/L)	USEPA RSLs (µg/L)	Facility-Wide Back-ground (µg/L)
Fuze & Booster	FBQmw-169	Bedrock	Barium	NT	*42.5*	NT	NT	2000	2600	7300	256
			Cadmium	NT	0.75	NT	NT	5	18	18	0
			Calcium	NT	*20000*	NT	NT	NS	NS	NS	53100
			Cobalt	NT	9.3	NT	NT	NS	730	11	0
			Iron	NT	*378*	NT	NT	300	11000	26000	1430
			Magnesium	NT	*13400*	NT	NT	NS	NS	NS	15000
			Manganese	NT	4790	NT	NT	50	880	880	1340
			Nickel	NT	*11.1*	NT	NT	NS	730	730	83.4
			Potassium	NT	*1920*	NT	NT	NS	NS	NS	5770
			Sodium	NT	*27900*	NT	NT	NS	NS	NS	51400
			Zinc	NT	*11.8*	NT	NT	5000	11000	11000	52.3
			bis(2-Ethylhexyl)phthalate	NT	0.83 JB	NT	NT	6	4.8	4.8	NS
Fuze & Booster	FBQmw-172	Bedrock	Barium	NT	*34.3*	NT	NT	2000	2600	7300	256
			Calcium	NT	73900	NT	NT	NS	NS	NS	53100
			Magnesium	NT	31800	NT	NT	NS	NS	NS	15000
			Manganese	NT	*30.2*	NT	NT	50	880	880	1340
			Potassium	NT	*702* J	NT	NT	NS	NS	NS	5770
			Sodium	NT	*7190*	NT	NT	NS	NS	NS	51400
			bis(2-Ethylhexyl)phthalate	NT	1.6 JB	NT	NT	6	4.8	4.8	NS
			Di-n-butyl phthalate	NT	0.77 JB	NT	NT	NS	NS	NS	NS
Fuze & Booster	FBQmw-173	Bedrock	Barium	NT	*10.3*	NT	NT	2000	2600	7300	256
			Calcium	NT	*7890*	NT	NT	NS	NS	NS	53100
			Iron	NT	*305*	NT	NT	300	11000	2600	1430
			Magnesium	NT	*3080*	NT	NT	NS	NS	NS	15000
			Manganese	NT	*328*	NT	NT	50	880	880	1340
			Nickel	NT	*3.6* J	NT	NT	NS	730	730	83.4
			Potassium	NT	*1290*	NT	NT	NS	NS	NS	5770
			Sodium	NT	*1720*	NT	NT	NS	NS	NS	51400
			Zinc	NT	*5.7* J	NT	NT	5000	11000	11000	52.3
			2,4,6-TNT	NT	0.048 J	NT	NT	NS	2.2	2.2	NS
			2-Amino-4,6-dinitrotoluene	NT	0.19	NT	NT	NS	NS	73	NS
			4-Amino-2,6-dinitrotoluene	NT	0.15	NT	NT	NS	NS	73	NS
			bis(2-Ethylhexyl)phthalate	NT	1.5 JB	NT	NT	6	4.8	4.8	NS
			Di-n-butyl phthalate	NT	0.69 JB	NT	NT	NS	NS	NS	NS
Fuze & Booster	FBQmw-174	Bedrock	Barium	NT	*15.9*	NT	NT	2000	2600	7300	256
			Calcium	NT	*6870*	NT	NT	NS	NS	NS	53100
			Magnesium	NT	*2120*	NT	NT	NS	NS	NS	15000
			Manganese	NT	*3.0* J	NT	NT	50	880	880	1340
			Potassium	NT	*946* J	NT	NT	NS	NS	NS	5770
			Sodium	NT	*867* J	NT	NT	NS	NS	NS	51400
			Zinc	NT	*3.6* JB	NT	NT	5000	11000	11000	52.3
			1,3-Dinitrobenzene	NT	0.085 J	NT	NT	NS	3.6	3.7	NS
			2,4,6-TNT	NT	44	NT	NT	NS	2.2	2.2	NS
			2,4-Dinitrotoluene	NT	0.30	NT	NT	NS	73	0.22	NS
			2,6-Dinitrotoluene	NT	0.14	NT	NT	NS	36	37	NS
			2-Amino-4,6-dinitrotoluene	NT	24	NT	NT	NS	NS	73	NS
			4-Amino-2,6-dinitrotoluene	NT	39	NT	NT	NS	NS	73	NS
			Acetone	NT	3.1 JB	NT	NT	NS	5500	22000	NS
			RDX	NT	0.44	NT	NT	NS	0.61	0.61	NS
Load Line 1	LL1mw-063	Bedrock	Aluminum	NT	NT	NT	160	200	36000	37000	0
			Barium	NT	NT	NT	*17*	2000	2600	7300	256
			Calcium	NT	NT	NT	*2000*	NS	NS	NS	53100
			Cobalt	NT	NT	NT	3.2 J	NS	730	11	0
			Iron	NT	NT	NT	*30* J	300	11000	26000	1430
			Magnesium	NT	NT	NT	*2200*	NS	NS	NS	15000
			Manganese	NT	NT	NT	*170*	50	880	880	1340
			Nickel	NT	NT	NT	*15*	NS	730	730	83.4
			Potassium	NT	NT	NT	*1000*	NS	NS	NS	5770
			Sodium	NT	NT	NT	*6500*	NS	NS	NS	51400
			Zinc	NT	NT	NT	*20*	5000	11000	11000	52.3
			1,3,5-Trinitrobenzene	NT	NT	NT	0.097 B	NS	1100	1100	NS
			1,3-Dinitrobenzene	NT	NT	NT	0.085 J	NS	3.6	3.7	NS
			2,4,6-TNT	NT	NT	NT	0.59	NS	2.2	2.2	NS
			2,4-Dinitrotoluene	NT	NT	NT	0.21	NS	73	0.22	NS
			2,6-Dinitrotoluene	NT	NT	NT	0.64	NS	36	37	NS
			2-Amino-4,6-dinitrotoluene	NT	NT	NT	1.6	NS	NS	73	NS
			4-Amino-2,6-dinitrotoluene	NT	NT	NT	6.3	NS	NS	73	NS
			bis(2-Ethylhexyl)phthalate	NT	NT	NT	0.82 J	6	4.8	4.8	NS
			HMX	NT	NT	NT	2.3	NS	1800	1800	NS
			RDX	NT	NT	NT	0.17	NS	0.61	0.61	NS

Table 4-4. Exceedances of MCLs and Region 9 PRGs

Area	Well Number	Monitored Zone	Analyte	Oct-10 Level (µg/L)		Jan-11 Level (µg/L)		Apr-11 Level (µg/L)		Jul-11 Level (µg/L)		MCL (µg/L)	Region 9 PRG (µg/L)	USEPA RSL (µg/L)
Atlas Scrap Yard	ASYmw-003	Bedrock	Manganese	NT		NT		189	J	NT		50	880	880
Building 1200	B12mw-010	Bedrock	Arsenic	NT		NT		3.7	J	NT		10	0.045	0.045
			Manganese	NT		NT		52.6		NT		50	880	880
Background	BKGmw-006	Bedrock	Iron	NT		NT		518		NT		300	11000	26000
			Manganese	NT		NT		191		NT		50	880	880
	BKGmw-010	Bedrock	Manganese	NT		NT		602		NT		50	880	880
Central Burn Pits	CBPmw-001	Unconsolidated	Arsenic	NT		34.7		NT		NT		10	0.045	0.045
			Iron	NT		1350		NT		NT		300	11000	26000
			Manganese	NT		150		NT		NT		50	880	880
	CBPmw-004	Unconsolidated	Arsenic	NT		30.1		NT		NT		10	0.045	0.045
	CBPmw-005	Unconsolidated	Arsenic	NT		22.3		NT		NT		10	0.045	0.045
			Iron	NT		580		NT		NT		300	11000	26000
			Manganese	NT		54.1		NT		NT		50	880	880
	CBPmw-007	Unconsolidated	Arsenic	NT		10.1		NT		NT		10	0.045	0.045
	CBPmw-007	Unconsolidated	Manganese	NT		65.5		NT		NT		50	880	880
	CBPmw-008	Unconsolidated	Arsenic	NT		5.8		NT		NT		10	0.045	0.045
			Manganese	NT		232		NT		NT		50	880	880
Cobbs Pond	CPmw-002	Unconsolidated	Manganese	NT		216		NT		NT		50	880	880
	CPmw-005	Unconsolidated	Arsenic	NT		47.5		NT		NT		10	0.045	0.045
			Iron	NT		424		NT		NT		300	11000	26000
	CPmw-006	Unconsolidated	Iron	NT		1710		NT		NT		300	11000	26000
			Manganese	NT		656		NT		NT		50	880	880
Demolition Area 2	DA2mw-106	Unconsolidated	Iron	NT		518		NT		NT		300	11000	26000
			Manganese	NT		4850		NT		NT		50	880	880
	DA2mw-107	Unconsolidated	Iron	NT		310		NT		NT		300	11000	26000
			Manganese	NT		322		NT		NT		50	880	880
	DA2mw-110	Unconsolidated	Aluminum	NT		212		NT		NT		200	36000	37000
	DETmw-003	Unconsolidated	Arsenic	13.1		NT		11		NT		10	0.045	0.045
			Iron	1590		NT		1780		NT		300	11000	26000
			Manganese	280		NT		277		NT		50	880	880
	DETmw-004	Unconsolidated	RDX	0.43	J	NT		5.4		NT		NS	0.61	0.61
Erie Burning Grounds	EBGmw-123	Unconsolidated	Arsenic	NT		46.5		NT		NT		10	0.045	0.045
			Iron	NT		4020		NT		NT		300	11000	26000
			Manganese	NT		118		NT		NT		50	880	880
	EBGmw-124	Unconsolidated	Aluminum	NT		277		NT		NT		200	36000	37000
			Arsenic	NT		22.8		NT		NT		10	0.045	0.045
			Iron	NT		1860		NT		NT		300	11000	26000
			Manganese	NT		51		NT		NT		50	880	880
	EBGmw-126	Unconsolidated	Arsenic	NT		15.5		NT		NT		10	0.045	0.045
			Iron	NT		4380		NT		NT		300	11000	26000
			Manganese	NT		129		NT		NT		50	880	880
	EBGmw-129	Unconsolidated	Iron	NT		1840		NT		NT		300	11000	26000
			Manganese	NT		488		NT		NT		50	880	880
Fuze and Booster	FBQmw-169	Bedrock	Iron	NT		378		NT		NT		300	11000	26000
			Manganese	NT		4790		NT		NT		50	880	880
	FBQmw-173	Bedrock	Iron	NT		305		NT		NT		300	11000	26000
			Manganese	NT		328		NT		NT		50	880	880
	FBQmw-174	Bedrock	2,4,6-TNT	NT		44		NT		NT		NS	2.2	NS
Load Line 1	LL1mw-063	Bedrock	Manganese	NT		NT		NT		170		50	880	880
	LL1mw-065	Unconsolidated	Arsenic	NT		NT		NT		3.4	J	10	0.045	0.045
			Manganese	NT		NT		NT		250		50	880	880
	LL1mw-067	Bedrock	Manganese	11.9		67.7		85		NT		50	880	880

Table 3-3 FWGWMP January 2009 Explosive and Propellant Analytical Results

Station ID				FBQmw-177	LNWmw-024	LNWmw-025	LNWmw-026	LNWmw-027	MBSmw-001	MBSmw-002
Sample ID		MCL	Region 9 PRG	FWGFBQmw-177C-1221-GW	FWGLNWmw-024C-1222-GW	FWGLNWmw-025C-1223-GW	FWGLNWmw-026C-1224-GW	FWGLNWmw-027C-1225-GW	FWGMBSmw-001C-1254-GW	FWGMBSmw-002C-1255-GW
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/28/2009	1/28/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	1100	0.10 U	0.10 U	0.11 JB	**0.049 J**	**0.065 J**	0.10 U	0.10 U
1,3-Dinitrobenzene	µg/L	NS	3.6	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
2,4,6-Trinitrolouene	µg/L	NS	2.2	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	73	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	36	0.10 U	0.10 U	0.11 U	**0.057 J**	0.11 U	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.049	0.51 U	0.52 U	0.54 U	0.54 U	0.57 U	0.50 U	0.50 U
3-Nitrotoluene	µg/L	NS	120	0.51 U	0.52 U	0.54 U	0.54 U	0.57 U	0.50 U	0.50 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	0.66	0.51 U	0.52 U	0.54 U	0.54 U	0.57 U	0.50 U	0.50 U
HMX	µg/L	NS	1800	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
Nitrobenzene	µg/L	NS	3.4	0.10 U	0.10 U	0.11 U	**0.070 J**	0.11 U	0.10 U	0.10 U
Nitrocellulose	mg/L	NS	NS	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
Nitroglycerin	µg/L	NS	4.8	0.66 U	0.68 U	0.70 U	0.70 U	0.74 U	0.65 U	0.65 U
Nitroguanidine	µg/L	NS	NS	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PETN	µg/L	NS	NS	0.66 U	0.68 U	0.70 U	0.70 U	0.74 U	0.65 U	0.65 U
RDX	µg/L	NS	0.61	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U
Tetryl	µg/L	NS	360	0.10 U	0.10 U	0.11 U	0.11 U	0.11 U	0.10 U	0.10 U

Notes:
NS = no standard
Bold = detected compound above the MDL
N/A = Not Analyzed

Table 3-3 FWGWMP January 2009 Explosive and Propellant Analytical Results

Station ID				MBSmw-003	MBSmw-004	MBSmw-005	MBSmw-006	NTAmw-107	NTAmw-108	NTAmw-109
Sample ID		MCL	Region 9 PRG	FWGMBSmw-003C-1256-GW	FWGMBSmw-004C-1257-GW	FWGMBSmw-005C-1258-GW	FWGMBSmw-006C-1259-GW	FWGNTAmw-107C-1226-GW	FWGNTAmw-108C-1227-GW	FWGNTAmw-109C-1228-GW
Date Collected				1/28/2009	1/28/2009	1/28/2009	1/28/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	1100	0.10 U	0.10 U	0.10 U	0.10 U	**0.052 J**	**0.063 J**	0.097 U
1,3-Dinitrobenzene	µg/L	NS	3.6	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
2,4,6-Trinitrolouene	µg/L	NS	2.2	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
2,4-Dinitrotoluene	µg/L	NS	73	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
2,6-Dinitrotoluene	µg/L	NS	36	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
2-Nitrotoluene	µg/L	NS	0.049	0.50 U	0.50 U	0.51 U	0.51 U	0.55 U	0.50 U	0.48 U
3-Nitrotoluene	µg/L	NS	120	0.50 U	0.50 U	0.51 U	0.51 U	0.55 U	0.50 U	0.48 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
4-Nitrotoluene	µg/L	NS	0.66	0.50 U	0.50 U	0.51 U	0.51 U	0.55 U	0.50 U	0.48 U
HMX	µg/L	NS	1800	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
Nitrobenzene	µg/L	NS	3.4	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
Nitrocellulose	mg/L	NS	NS	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 UJ
Nitroglycerin	µg/L	NS	4.8	0.66 U	0.65 U	0.66 U	0.66 U	0.72 U	0.64 U	0.63 U
Nitroguanidine	µg/L	NS	NS	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PETN	µg/L	NS	NS	0.66 U	0.65 U	0.66 U	0.66 U	0.72 U	0.64 U	0.63 U
RDX	µg/L	NS	0.61	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U
Tetryl	µg/L	NS	360	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.099 U	0.097 U

Notes:
NS = no standard
Bold = detected compound above the MDL
N/A = Not Analyzed

Table 3-3 FWGWMP January 2009 Explosive and Propellant Analytical Results

Station ID				NTAmw-110	NTAmw-111	NTAmw-112	NTAmw-113	NTAmw-114	NTAmw-115	NTAmw-116
Sample ID		MCL	Region 9 PRG	FWGNTAmw-110C-1229-GW	FWGNTAmw-111C-1230-GW	FWGNTAmw-112C-1231-GW	FWGNTAmw-113C-1232-GW	FWGNTAmw-114C-1233-GW	FWGNTAmw-115C-1234-GW	FWGNTAmw-116C-1235-GW
Date Collected				1/28/2009	1/28/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,3,5-Trinitrobenzene	µg/L	NS	1100	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	**0.047 J**	**0.056 J**
1,3-Dinitrobenzene	µg/L	NS	3.6	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
2,4,6-Trinitrolouene	µg/L	NS	2.2	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
2,4-Dinitrotoluene	µg/L	NS	73	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
2,6-Dinitrotoluene	µg/L	NS	36	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
2-Nitrotoluene	µg/L	NS	0.049	0.52 U	0.50 U	0.50 U	0.48 U	0.51 UJ	0.50 U	0.50 U
3-Nitrotoluene	µg/L	NS	120	0.52 U	0.50 U	0.50 U	0.48 U	0.51 UJ	0.50 U	0.50 U
4-Amino-2,6-Dinitrotoluene	µg/L	NS	NS	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
4-Nitrotoluene	µg/L	NS	0.66	0.52 U	0.50 U	0.50 U	0.48 U	0.51 UJ	0.50 U	0.50 U
HMX	µg/L	NS	1800	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
Nitrobenzene	µg/L	NS	3.4	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	**0.079 J**	0.10 U
Nitrocellulose	mg/L	NS	NS	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ
Nitroglycerin	µg/L	NS	4.8	0.68 U	0.66 U	0.64 U	0.62 U	0.66 UJ	0.66 U	0.65 U
Nitroguanidine	µg/L	NS	NS	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PETN	µg/L	NS	NS	0.68 U	0.66 U	0.64 U	0.62 U	0.66 UJ	0.66 U	0.65 U
RDX	µg/L	NS	0.61	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U
Tetryl	µg/L	NS	360	0.10 U	0.10 U	0.099 U	0.096 U	0.10 UJ	0.10 U	0.10 U

Notes:
NS = no standard
Bold = detected compound above the MDL
N/A = Not Analyzed

Table 3-4 FWGWMPP January 2009 Inorganics Analytical Results

Station ID				EBGmw-130	FBQmw-166	FBQmw-167	FBQmw-168	FBQmw-169	FBQmw-170	FBQmw-171
Sample ID		MCL	Region 9 PRG	FWGEBGmw-130C-1209-GF	FWGFBQmw-166C-1210-GF	FWGFBQmw-167C-1211-GF	FWGFBQmw-168C-1212-GF	FWGFBQmw-169C-1213-GF	FWGFBQmw-170C-1214-GF	FWGFBQmw-171C-1215-GF
Date Collected				1/21/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	36000	50.0 U	50.0 U	50.0 U	50.0 U	**26.4 JB**	**22.5 JB**	50.0 U
Antimony	µg/L	6	15	2.0 U	2.0 U	2.0 U	**0.38 J**	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	10	0.045	**5.0**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Barium	µg/L	2000	2600	**52.2**	**30.8**	**50.6**	**33.8**	**43.9**	**36.4**	**28.3**
Beryllium	µg/L	4	73	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5	18	0.50 U	0.50 U	0.50 U	0.50 U	**0.78**	0.50 U	0.50 U
Calcium	µg/L	NS	NS	**76100**	**111000**	**29400**	**57900 J**	**22900**	**7260 J**	**16400 J**
Chromium	µg/L	100	110	**27.5**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	µg/L	NS	730	**1.9 J**	5.0 U	**5.5**	5.0 U	**10.4**	5.0 U	5.0 U
Copper	µg/L	1300	1500	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cyanide	mg/L	0.2	0.73	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	µg/L	300	11000	**3610**	**541**	**12300**	**34.1 JB**	**448**	**167 J**	**57.4 J**
Lead	µg/L	15	NS	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Magnesium	µg/L	NS	NS	**16300**	**40000**	**12900**	**10500 J**	**15700**	**2660 J**	**5540 J**
Manganese	µg/L	50	880	**694**	**60.5 J**	**1760 J**	**5.9 JB**	**5440 J**	**63.1 J**	**34.7 J**
Mercury	µg/L	2	11	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	730	**19.3**	10.0 U	**9.5 J**	10.0 U	**13.8**	**4.9 J**	**4.9 J**
Potassium	µg/L	NS	NS	**3530 J**	**1080 J**	**1550 J**	**950 J**	**1880 J**	729 UJB	**863 J**
Selenium	µg/L	50	180	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	µg/L	100	180	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**5800**	**15500**	**33500**	**2010**	**29400**	**10600**	**1120**
Thallium	µg/L	2	2.4	1.0 U	1.0 U	1.0 U	1.0 U	0.14 UJ	1.0 U	1.0 U
Vanadium	µg/L	NS	36	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Zinc	µg/L	5000	11000	**6.7 JB**	**3.0 JB**	**16.1**	**2.9 JB**	**9.1 JB**	**17.1 B**	**14.5 B**

Notes:

NS = no standard

Bold = detected compound above the MDL

N/A = Not Analyzed

Table 3-4 FWGWMPP January 2009 Inorganics Analytical Results

Station ID				FBQmw-172	FBQmw-173	FBQmw-174	FBQmw-175	FBQmw-176	FBQmw-177	LNWmw-024
Sample ID		MCL	Region 9 PRG	FWGFBQmw-172C-1216-GF	FWGFBQmw-173C-1217-GF	FWGFBQmw-174C-1218-GF	FWGFBQmw-175C-1219-GF	FWGFBQmw-176C-1220-GF	FWGFBQmw-177C-1221-GF	FWGLNWmw-024C-1222-GF
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Aluminum	µg/L	200	36000	50.0 U	**29.4 JB**	50.0 U	**51.7 JB**	**906 J**	50.0 U	**297 J**
Antimony	µg/L	6	15	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	10	0.045	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Barium	µg/L	2000	2600	**38.0**	**8.7 J**	**15.7**	**12.2**	**57.5**	**9.9 J**	**38.5**
Beryllium	µg/L	4	73	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	5	18	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Calcium	µg/L	NS	NS	**84600**	**8100**	**8290 J**	**11600 J**	**8760 J**	**42100 J**	**89300**
Chromium	µg/L	100	110	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	µg/L	NS	730	5.0 U	**1.9 J**	5.0 U	5.0 U	**2.8 J**	5.0 U	5.0 U
Copper	µg/L	1300	1500	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cyanide	mg/L	0.2	0.73	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	µg/L	300	11000	**188**	**362**	**33.1 J**	**126 J**	**8910 J**	**81.4 J**	**415**
Lead	µg/L	15	NS	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Magnesium	µg/L	NS	NS	**37800**	**3210**	**2620 J**	**6180 J**	**3320 J**	**11600 J**	**41400**
Manganese	µg/L	50	880	**1170 J**	**1130 J**	**2.2 JB**	**6.9 JB**	**1360 J**	**1170 J**	**64.6 J**
Mercury	µg/L	2	11	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	NS	730	**4.3 J**	10.0 U	10.0 U	**10.1**	10.0 U	10.0 U	10.0 U
Potassium	µg/L	NS	NS	710 UJB	**1260 J**	**907 J**	755 UJ	**1130 J**	**1220 J**	**1290 J**
Selenium	µg/L	50	180	5.0 U	5.0 U	5.0 U	5.0 U	**4.7 J**	5.0 U	5.0 U
Silver	µg/L	100	180	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Sodium	µg/L	NS	NS	**6930**	**1610**	1000 U	**2050**	**1900**	**2790**	**12900**
Thallium	µg/L	2	2.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vanadium	µg/L	NS	36	10.0 U	10.0 U	10.0 U	10.0 U	**1.7 JB**	10.0 U	10.0 U
Zinc	µg/L	5000	11000	**8.2 JB**	**6.2 JB**	**4.0 JB**	**11.6 B**	**8.8 JB**	**3.7 JB**	**4.1 JB**

Notes:

NS = no standard

Bold = detected compound above the MDL

N/A = Not Analyzed

Table 3-6 FWGWMP January 2009 VOCs Analytical results

Station ID				EBGmw-130	FBQmw-166	FBQmw-167	FBQmw-168	FBQmw-169	FBQmw-170	FBQmw-171	FBQmw-172
Sample ID		MCL	Region 9 PRG	FWGEBGmw-130C-1209-GW	FWGFBQmw-166C-1210-GW	FWGFBQmw-167C-1211-GW	FWGFBQmw-168C-1212-GW	FWGFBQmw-169C-1213-GW	FWGFBQmw-170C-1214-GW	FWGFBQmw-171C-1215-GW	FWGFBQmw-172C-1216-GW
Date Collected				1/21/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units										
1,1,1-Trichloroethane	µg/L	NS	3200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.052	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	NS	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	NS	810	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene (total)	µg/L	7	340	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	µg/L	NS	0.0056	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	5	0.12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	µg/L	NS	NS	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	5	0.16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	µg/L	NS	7000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	NS	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	µg/L	NS	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	NS	5500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	µg/L	5	0.35	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	NS	0.18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	NS	8.5	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U
Bromomethane	µg/L	NS	8.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	NS	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	5	0.17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	NS	110	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	NS	4.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	NS	0.17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	NS	160	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-dichloroethene	µg/L	70	61	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	NS	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	NS	0.13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-xylenes	µg/L	NS	NS	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 U
Methylene chloride	µg/L	NS	4.3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-xylene	µg/L	NS	NS	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U
Styrene	µg/L	100	1600	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Tetrachloroethene	µg/L	5	0.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1000	720	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	µg/L	10000	210	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
trans-1,2-dichloroethene	µg/L	100	120	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	NS	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	5	0.028	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2	0.02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

NS = no standard

Bold = detected compound above the MDL

Table 3-6 FWGWMP January 2009 VOCs Analytical results

Station ID				FBQmw-173	FBQmw-174	FBQmw-175	FBQmw-176	FBQmw-177	LNWmw-024	LNWmw-025	LNWmw-026
Sample ID		MCL	Region 9 PRG	FWGFBQmw-173C-1217-GW	FWGFBQmw-174C-1218-GW	FWGFBQmw-175C-1219-GW	FWGFBQmw-176C-1220-GW	FWGFBQmw-177C-1221-GW	FWGLNWmw-024C-1222-GW	FWGLNWmw-025C-1223-GW	FWGLNWmw-026C-1224-GW
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units										
1,1,1-Trichloroethane	µg/L	NS	3200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NS	0.052	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	NS	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	NS	810	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene (total)	µg/L	7	340	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	µg/L	NS	0.0056	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	5	0.12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	5	0.16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	µg/L	NS	7000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	NS	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	µg/L	NS	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	NS	5500	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	µg/L	5	0.35	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	NS	0.18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	NS	8.5	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	µg/L	NS	8.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	NS	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	5	0.17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	NS	110	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	NS	4.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	NS	0.17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	NS	160	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-dichloroethene	µg/L	70	61	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	NS	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	NS	0.13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-xylenes	µg/L	NS	NS	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ
Methylene chloride	µg/L	NS	4.3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-xylene	µg/L	NS	NS	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Styrene	µg/L	100	1600	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ
Tetrachloroethene	µg/L	5	0.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1000	720	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	µg/L	10000	210	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
trans-1,2-dichloroethene	µg/L	100	120	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	NS	0.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	5	0.028	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2	0.02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

NS = no standard

Bold = detected compound above the MDL

Table 3-7 FWGWMP January 2009 SVOCs Analytical Results

Station ID				EBGmw-128	EBGmw-129	EBGmw-130	FBQmw-166	FBQmw-167	FBQmw-168	FBQmw-169
Sample ID		MCL	Region 9 PRG	FWGEBGmw-128C-1207-GW	FWGEBGmw-129C-1208-GW	FWGEBGmw-130C-1209-GW	FWGFBQmw-166C-1210-GW	FWGFBQmw-167C-1211-GW	FWGFBQmw-168C-1212-GW	FWGFBQmw-169C-1213-GW
Date Collected				1/20/2009	1/20/2009	1/21/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
Benzo(k)fluoranthene	µg/L	NS	0.92	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzoic acid	µg/L	NS	150000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl alcohol	µg/L	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-Chloroethoxy)methane	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-Chloroethyl) ether	µg/L	NS	0.001	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-Ethylhexyl) phthalate	µg/L	NS	4.8	**1.8 JB**	**1.7 JB**	10 U	**1.7 JB**	**1.8 JB**	**1.2 JB**	**1.6 JB**
Butyl benzyl phthalate	µg/L	NS	7300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole	µg/L	NS	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chrysene	µg/L	NS	9.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dibenzo(a,h)anthracene	µg/L	NS	0.0093	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dibenzofuran	µg/L	NS	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Diethyl phthalate	µg/L	NS	29,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dimethyl phthalate	µg/L	NS	360000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Di-n-butyl phthalate	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Di-n-octyl phthalate	µg/L	NS	1500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Fluorene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Hexachlorobenzene	µg/L	1	0.042	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Hexachlorobutadiene	µg/L	NS	0.86	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorocyclopentadiene	µg/L	50	220	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	µg/L	NS	4.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Isophorone	µg/L	NS	71	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	µg/L	NS	6.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nitrobenzene	µg/L	NS	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitroso-di-n-propylamine	µg/L	NS	9600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitrosodiphenylamine	µg/L	NS	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	µg/L	1	0.56	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Phenol	µg/L	NS	11000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

Notes:

NS = no standard

Bold = detected compound above the MDL

N/A = Not Analyzed

Table 3-7 FWGWMP January 2009 SVOCs Analytical Results

Station ID				FBQmw-170	FBQmw-171	FBQmw-172	FBQmw-173	FBQmw-174	FBQmw-175	FBQmw-176
Sample ID		MCL	Region 9 PRG	FWGFBQmw-170C-1214-GW	FWGFBQmw-171C-1215-GW	FWGFBQmw-172C-1216-GW	FWGFBQmw-173C-1217-GW	FWGFBQmw-174C-1218-GW	FWGFBQmw-175C-1219-GW	FWGFBQmw-176C-1220-GW
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units									
1,2,4-Trichlorobenzene	µg/L	NS	7.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	NS	370	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	NS	180	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	NS	0.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,2-oxybis (1-chloropropane)	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,4,5-Trichlorophenol	µg/L	NS	3600	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4,6-Trichlorophenol	µg/L	NS	3.6	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dichlorophenol	µg/L	NS	110	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	µg/L	NS	730	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dinitrophenol	µg/L	NS	73	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dinitrotoluene	µg/L	NS	73	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,6-Dinitrotoluene	µg/L	NS	36	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Chloronaphthalene	µg/L	NS	490	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorophenol	µg/L	NS	30	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
2-Methylphenol	µg/L	NS	1800	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Nitroaniline	µg/L	NS	110	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Nitrophenol	µg/L	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
3,3'-Dichlorobenzidine	µg/L	NS	0.15	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
3-Nitroaniline	µg/L	NS	3.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Bromophenyl phenyl ether	µg/L	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloro-3-methylphenol	µg/L	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline	µg/L	NS	150	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorophenyl phenyl ether	µg/L	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methylphenol	µg/L	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Nitroanaline	µg/L	NS	3.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Nitrophenol	µg/L	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acenaphthene	µg/L	NS	370	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Acenaphthylene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Anthracene	µg/L	NS	1800	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(a)anthracene	µg/L	NS	0.092	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(a)pyrene	µg/L	0.2	0.0092	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(b)fluoranthene	µg/L	NS	0.092	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Benzo(g,h,i)perylene	µg/L	NS	NS	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

Table 3-8 FWGWMP January 2009 Pesticides and PCBs Analytical Results

Station ID				FBQmw-166	FBQmw-167	FBQmw-168	FBQmw-169	FBQmw-170	FBQmw-171	FBQmw-172	FBQmw-173
Sample ID		MCL	Region 9 PRG	FWGFBQmw-166C-1210-GW	FWGFBQmw-167C-1211-GW	FWGFBQmw-168C-1212-GW	FWGFBQmw-169C-1213-GW	FWGFBQmw-170C-1214-GW	FWGFBQmw-171C-1215-GW	FWGFBQmw-172C-1216-GW	FWGFBQmw-173C-1217-GW
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units										
4,4'-DDD	µg/L	NS	0.28	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
4,4'-DDE	µg/L	NS	0.2	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
4,4'-DDT	µg/L	NS	0.2	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Aldrin	µg/L	NS	0.004	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	**0.029 J**	0.030 U
alpha-BHC	µg/L	NS	0.011	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
alpha-Chordane	µg/L	NS	NS	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
beta-BHC	µg/L	NS	0.037	**0.015 J**	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
delta-BHC	µg/L	NS	NS	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Dieldrin	µg/L	NS	0.0042	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Endosulfan I	µg/L	NS	0.022	0.025 U	0.025 UJ	0.025 U	0.025 UJ	0.025 U	0.025 U	0.025 U	0.025 U
Endosulfan II	µg/L	NS	0.022	0.025 U	0.025 UJ	0.025 U	0.025 UJ	0.025 U	0.025 U	0.025 U	0.025 U
Endosulfan sulfate	µg/L	NS	NS	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Endrin	µg/L	2	11	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Endrin aldehyde	µg/L	NS	11	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Endrin ketone	µg/L	NS	NS	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Gamma-BHC	µg/L	0.2	0.052	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
gamma-Chlordane	µg/L	NS	NS	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Heptachlor	µg/L	0.4	0.015	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Heptachlor epoxide	µg/L	0.2	0.0074	0.030 U	0.030 UJ	0.030 U	0.030 UJ	0.030 U	0.030 U	0.030 U	0.030 U
Methoxychlor	µg/L	40	180	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
Toxaphene	µg/L	3	0.061	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
PCB- 1016	µg/L	0.5	0.96	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
PCB- 1221	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
PCB- 1232	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
PCB- 1242	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
PCB- 1248	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
PCB- 1254	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
PCB- 1260	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U

Notes:

NS = no standard

Bold = detected compound above the MDL

N/A = Not Analyzed

Table 3-8 FWGWMP January 2009 Pesticides and PCBs Analytical Results

Station ID				FBQmw-174	FBQmw-175	FBQmw-176	FBQmw-177	LNWmw-024	LNWmw-025	LNWmw-026	LNWmw-027
Sample ID		MCL	Region 9 PRG	FWGFBQmw-174C-1218-GW	FWGFBQmw-175C-1219-GW	FWGFBQmw-176C-1220-GW	FWGFBQmw-177C-1221-GW	FWGLNWmw-024C-1222-GW	FWGLNWmw-025C-1223-GW	FWGLNWmw-026C-1224-GW	FWGLNWmw-027C-1225-GW
Date Collected				1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009	1/27/2009
Sample Type				Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Analyte	Units										
4,4'-DDD	µg/L	NS	0.28	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
4,4'-DDE	µg/L	NS	0.2	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
4,4'-DDT	µg/L	NS	0.2	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Aldrin	µg/L	NS	0.004	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
alpha-BHC	µg/L	NS	0.011	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
alpha-Chordane	µg/L	NS	NS	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
beta-BHC	µg/L	NS	0.037	0.15 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	**0.012 J**	0.030 UJ	0.030 U
delta-BHC	µg/L	NS	NS	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Dieldrin	µg/L	NS	0.0042	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Endosulfan I	µg/L	NS	0.022	0.025 U	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.025 U
Endosulfan II	µg/L	NS	0.022	0.025 U	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.025 UJ	0.025 U
Endosulfan sulfate	µg/L	NS	NS	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Endrin	µg/L	2	11	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Endrin aldehyde	µg/L	NS	11	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Endrin ketone	µg/L	NS	NS	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Gamma-BHC	µg/L	0.2	0.052	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
gamma-Chlordane	µg/L	NS	NS	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Heptachlor	µg/L	0.4	0.015	0.030 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Heptachlor epoxide	µg/L	0.2	0.0074	0.15 U	0.030 U	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 UJ	0.030 U
Methoxychlor	µg/L	40	180	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U
Toxaphene	µg/L	3	0.061	2.0 UJ	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U
PCB- 1016	µg/L	0.5	0.96	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
PCB- 1221	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
PCB- 1232	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
PCB- 1242	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
PCB- 1248	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
PCB- 1254	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
PCB- 1260	µg/L	0.5	0.034	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U

Notes:

NS = no standard

Bold = detected compound above the MDL

N/A = Not Analyzed

Appendix L – Automated Data Review Report

(Provided in the attached CD)

Prudent Technologies, Inc. Saturday, February 23, 2013

8374 Cypresswood Dr.

Cincinnati, Ohio 45249

ATTN: Mr. John Jent, MS, PE

SUBJECT: Ravenna CC-78

Dear Mr. John Jent, MS, PE

Enclosed are all pertinent ADR reports for the laboratory electronic data deliverables (EDDs) and test categories listed below.

SDG	Fraction
240-5866-1	**Metals** (7471A) **Semi-volatiles** (8081A, 8082, 8270C, 8330) **Volatiles** (8260B)

The following deliverables are submitted under this report.

SDG Sample Summary
ADR Qualifier Summary
ADR Outlier Reports

Data review was performed in accordance with the following documents:

QSM v 4 May 2009

Please feel free to contact us if you have any questions.

Sincerely,

Samir Mansy,

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 6020							
C78SB-021M-0001-SO	240-5866-5	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0001-SO	240-5866-5	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0001-SO	240-5866-5	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-021M-0001-SO	240-5866-5	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-29-2011
C78SB-021M-0001-SO	240-5866-5	RES/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0002-SO	240-5866-7	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0002-SO	240-5866-7	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0002-SO	240-5866-7	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0002-SO	240-5866-7	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0003-SO	240-5866-9	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0003-SO	240-5866-9	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0003-SO	240-5866-9	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0003-SO	240-5866-9	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0004-SO	240-5866-12	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0004-SO	240-5866-12	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0004-SO	240-5866-12	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-021M-0004-SO	240-5866-12	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0005-SO	240-5866-13	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0005-SO	240-5866-13	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0005-SO	240-5866-13	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-021M-0005-SO	240-5866-13	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0006-SO	240-5866-15	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0006-SO	240-5866-15	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-021M-0006-SO	240-5866-15	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 6020							
C78SB-021M-0006-SO	240-5866-15	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0101-SO	240-5866-1	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-021M-0101-SO	240-5866-1	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-21-2011
C78SB-021M-0101-SO	240-5866-1	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-21-2011
C78SB-021M-0101-SO	240-5866-1	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-021M-0102-SO	240-5866-3	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-21-2011
C78SB-021M-0102-SO	240-5866-3	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-021M-0102-SO	240-5866-3	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-29-2011
C78SB-021M-0102-SO	240-5866-3	RES/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0001-SO	240-5866-21	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0001-SO	240-5866-21	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0001-SO	240-5866-21	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0001-SO	240-5866-21	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-29-2011
C78SB-022M-0001-SO	240-5866-21	RES/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0002-SO	240-5866-23	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0002-SO	240-5866-23	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0002-SO	240-5866-23	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0002-SO	240-5866-23	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0002-SO	240-5866-23	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0003-SO	240-5866-25	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0003-SO	240-5866-25	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0003-SO	240-5866-25	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0003-SO	240-5866-25	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0004-SO	240-5866-27	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011

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Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 6020							
C78SB-022M-0004-SO	240-5866-27	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0004-SO	240-5866-27	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0004-SO	240-5866-27	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0005-SO	240-5866-29	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0005-SO	240-5866-29	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0005-SO	240-5866-29	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0005-SO	240-5866-29	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0006-SO	240-5866-31	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0006-SO	240-5866-31	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0006-SO	240-5866-31	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0006-SO	240-5866-31	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0101-SO	240-5866-17	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SB-022M-0101-SO	240-5866-17	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0101-SO	240-5866-17	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0101-SO	240-5866-17	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0101-SO	240-5866-17	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SB-022M-0102-SO	240-5866-19	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0102-SO	240-5866-19	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SB-022M-0102-SO	240-5866-19	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SB-022M-0102-SO	240-5866-19	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-29-2011
C78SB-022M-0102-SO	240-5866-19	RES/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SS-001M-0001-SO	240-5866-41	RE2/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	12-05-2011
C78SS-001M-0001-SO	240-5866-41	RES/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	11-29-2011
C78SS-003M-0001-SO	240-5866-43	RE2/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	12-05-2011

EDD Summary Report by Analysis Method

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Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 6020							
C78SS-003M-0001-SO	240-5866-43	RES/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	11-29-2011
C78SS-007-0001-SO	240-5866-45	RE2/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	12-05-2011
C78SS-007-0001-SO	240-5866-45	RES/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	11-29-2011
C78SS-010M-0001-SO	240-5866-37	RE2/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	12-05-2011
C78SS-010M-0001-SO	240-5866-37	RES/TOT(TOT)	3050B	SO	11-10-2011	11-23-2011 09:37	11-29-2011
C78SS-013M-0001-SO	240-5866-33	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
C78SS-013M-0001-SO	240-5866-33	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SS-013M-0001-SO	240-5866-33	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SS-013M-0001-SO	240-5866-33	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SS-013M-0001-SO	240-5866-33	RES/TOT(TOT)	3050B	SO	11-09-2011	11-18-2011 11:43	11-29-2011
C78SS-015M-0001-SO	240-5866-35	RE2/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SS-015M-0001-SO	240-5866-35	RE3/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-22-2011
C78SS-015M-0001-SO	240-5866-35	RE4/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-28-2011
C78SS-015M-0001-SO	240-5866-35	RE5/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-29-2011
C78SS-015M-0001-SO	240-5866-35	RES/TOT(TOT)	3050B	SO	11-09-2011	12-01-2011 09:13	12-05-2011
Method: 7471A							
C78SB-021M-0001-SO	240-5866-5	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0002-SO	240-5866-7	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0003-SO	240-5866-9	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0004-SO	240-5866-12	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0005-SO	240-5866-13	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0006-SO	240-5866-15	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0101-SO	240-5866-1	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-021M-0102-SO	240-5866-3	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011

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Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 7471A							
C78SB-022M-0001-SO	240-5866-21	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0002-SO	240-5866-23	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0003-SO	240-5866-25	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0004-SO	240-5866-27	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0005-SO	240-5866-29	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0006-SO	240-5866-31	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0101-SO	240-5866-17	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SB-022M-0102-SO	240-5866-19	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SS-001M-0001-SO	240-5866-41	RES/TOT(TOT)	7471A	SO	11-10-2011	11-23-2011 13:00	11-30-2011
C78SS-003M-0001-SO	240-5866-43	RES/TOT(TOT)	7471A	SO	11-10-2011	11-23-2011 13:00	11-30-2011
C78SS-007-0001-SO	240-5866-45	RES/TOT(TOT)	7471A	SO	11-10-2011	11-23-2011 13:00	11-30-2011
C78SS-010M-0001-SO	240-5866-37	RES/TOT(TOT)	7471A	SO	11-10-2011	11-23-2011 13:00	11-30-2011
C78SS-013M-0001-SO	240-5866-33	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
C78SS-015M-0001-SO	240-5866-35	RES/TOT(TOT)	7471A	SO	11-09-2011	11-18-2011 15:15	11-30-2011
Method: 8081A							
C78SB-021M-0001-SO	240-5866-5	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-021M-0002-SO	240-5866-7	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-021M-0003-SO	240-5866-9	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-021M-0004-SO	240-5866-12	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-021M-0005-SO	240-5866-13	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-021M-0006-SO	240-5866-15	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-021M-0101-SO	240-5866-1	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-021M-0102-SO	240-5866-3	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-19-2011
C78SB-022M-0001-SO	240-5866-21	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011

EDD Summary Report by Analysis Method

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Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8081A							
C78SB-022M-0002-SO	240-5866-23	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0003-SO	240-5866-25	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0004-SO	240-5866-27	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0005-SO	240-5866-29	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0006-SO	240-5866-31	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0101-SO	240-5866-17	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SB-022M-0102-SO	240-5866-19	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SS-001M-0001-SO	240-5866-41	RES	3540C	SO	11-10-2011	11-18-2011 08:35	11-20-2011
C78SS-003M-0001-SO	240-5866-43	RES	3540C	SO	11-10-2011	11-22-2011 09:18	11-24-2011
C78SS-007-0001-SO	240-5866-45	RES	3540C	SO	11-10-2011	11-22-2011 09:18	11-24-2011
C78SS-010M-0001-SO	240-5866-37	RES	3540C	SO	11-10-2011	11-18-2011 08:35	11-20-2011
C78SS-013M-0001-SO	240-5866-33	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
C78SS-015M-0001-SO	240-5866-35	RES	3540C	SO	11-09-2011	11-18-2011 08:35	11-20-2011
Method: 8082							
C78SB-021M-0001-SO	240-5866-5	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0002-SO	240-5866-7	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0003-SO	240-5866-9	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0004-SO	240-5866-12	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0005-SO	240-5866-13	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0006-SO	240-5866-15	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0101-SO	240-5866-1	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-021M-0102-SO	240-5866-3	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0001-SO	240-5866-21	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0002-SO	240-5866-23	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011

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Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8082							
C78SB-022M-0003-SO	240-5866-25	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0004-SO	240-5866-27	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0005-SO	240-5866-29	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0006-SO	240-5866-31	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0101-SO	240-5866-17	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SB-022M-0102-SO	240-5866-19	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SS-001M-0001-SO	240-5866-41	RES	3540C	SO	11-10-2011	11-18-2011 08:22	11-21-2011
C78SS-003M-0001-SO	240-5866-43	RES	3540C	SO	11-10-2011	11-22-2011 09:12	11-29-2011
C78SS-007-0001-SO	240-5866-45	RES	3540C	SO	11-10-2011	11-22-2011 09:12	11-30-2011
C78SS-010M-0001-SO	240-5866-37	RES	3540C	SO	11-10-2011	11-18-2011 08:22	11-22-2011
C78SS-013M-0001-SO	240-5866-33	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
C78SS-015M-0001-SO	240-5866-35	RES	3540C	SO	11-09-2011	11-18-2011 08:22	11-21-2011
Method: 8260B							
C78SB-021V-0001-SO	240-5866-6	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-021V-0001-SO	240-5866-6	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0002-SO	240-5866-8	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-021V-0002-SO	240-5866-8	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0003-SO	240-5866-10	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-021V-0003-SO	240-5866-10	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0004-SO	240-5866-11	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-021V-0004-SO	240-5866-11	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0005-SO	240-5866-14	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-021V-0005-SO	240-5866-14	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0006-SO	240-5866-16	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8260B							
C78SB-021V-0006-SO	240-5866-16	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-021V-0101-SO	240-5866-2	RE2	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-021V-0101-SO	240-5866-2	RES	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-021V-0102-SO	240-5866-4	RE2	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-021V-0102-SO	240-5866-4	RES	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-022V-0001-SO	240-5866-22	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0001-SO	240-5866-22	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0002-SO	240-5866-24	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0002-SO	240-5866-24	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0003-SO	240-5866-26	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0003-SO	240-5866-26	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0004-SO	240-5866-28	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0004-SO	240-5866-28	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0005-SO	240-5866-30	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0005-SO	240-5866-30	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0006-SO	240-5866-32	RE2	5035	SO	11-20-2011	11-20-2011 20:24	11-23-2011
C78SB-022V-0006-SO	240-5866-32	RES	5035	SO	11-20-2011	11-20-2011 20:24	11-21-2011
C78SB-022V-0101-SO	240-5866-18	RE2	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-022V-0101-SO	240-5866-18	RES	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SB-022V-0102-SO	240-5866-20	RE2	5035	SO	11-21-2011	11-21-2011 18:52	11-23-2011
C78SB-022V-0102-SO	240-5866-20	RES	5035	SO	11-21-2011	11-21-2011 18:52	11-22-2011
C78SS-002-0001-SO	240-5866-42	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011
C78SS-002-0001-SO	240-5866-42	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
C78SS-004-0001-SO	240-5866-44	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8260B							
C78SS-004-0001-SO	240-5866-44	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
C78SS-007-0002-SO	240-5866-46	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011
C78SS-007-0002-SO	240-5866-46	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
C78SS-011-0001-SO	240-5866-38	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011
C78SS-011-0001-SO	240-5866-38	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
C78SS-014-0001-SO	240-5866-34	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011
C78SS-014-0001-SO	240-5866-34	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
C78SS-016-0001-SO	240-5866-36	RE2	5035	SO	11-19-2011	11-19-2011 17:28	11-23-2011
C78SS-016-0001-SO	240-5866-36	RES	5035	SO	11-19-2011	11-19-2011 17:28	11-21-2011
Method: 8270C							
C78SB-021M-0001-SO	240-5866-5	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0002-SO	240-5866-7	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0003-SO	240-5866-9	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0004-SO	240-5866-12	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0005-SO	240-5866-13	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0006-SO	240-5866-15	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0101-SO	240-5866-1	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-021M-0102-SO	240-5866-3	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0001-SO	240-5866-21	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0002-SO	240-5866-23	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0003-SO	240-5866-25	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0004-SO	240-5866-27	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0005-SO	240-5866-29	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0006-SO	240-5866-31	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8270C							
C78SB-022M-0101-SO	240-5866-17	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SB-022M-0102-SO	240-5866-19	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SS-001M-0001-SO	240-5866-41	RES	3540C	SO	11-10-2011	11-21-2011 11:49	12-05-2011
C78SS-003M-0001-SO	240-5866-43	RES	3540C	SO	11-10-2011	11-23-2011 08:51	12-07-2011
C78SS-007-0001-SO	240-5866-45	RES	3540C	SO	11-10-2011	11-23-2011 08:51	12-06-2011
C78SS-010M-0001-SO	240-5866-37	RES	3540C	SO	11-10-2011	11-21-2011 11:49	12-05-2011
C78SS-013M-0001-SO	240-5866-33	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
C78SS-015M-0001-SO	240-5866-35	RES	3540C	SO	11-09-2011	11-21-2011 11:49	12-05-2011
Method: 8330							
C78SB-021M-0001-SO	240-5866-5	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0002-SO	240-5866-7	RES/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0003-SO	240-5866-9	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0004-SO	240-5866-12	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0005-SO	240-5866-13	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0006-SO	240-5866-15	RES/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0101-SO	240-5866-1	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-021M-0102-SO	240-5866-3	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-022M-0001-SO	240-5866-21	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SB-022M-0002-SO	240-5866-23	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SB-022M-0003-SO	240-5866-25	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SB-022M-0004-SO	240-5866-27	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SB-022M-0005-SO	240-5866-29	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SB-022M-0006-SO	240-5866-31	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SB-022M-0101-SO	240-5866-17	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8330							
C78SB-022M-0102-SO	240-5866-19	RES/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-27-2011
C78SS-001M-0001-SO	240-5866-41	DL/WET	8330	SO	11-10-2011	11-21-2011 14:00	11-28-2011
C78SS-003M-0001-SO	240-5866-43	DL/WET	8330	SO	11-10-2011	11-21-2011 14:00	11-28-2011
C78SS-007-0001-SO	240-5866-45	DL/WET	8330	SO	11-10-2011	11-21-2011 14:00	11-28-2011
C78SS-007-0001-SORE	240-5866-45RE	DL2/WET	8330	SO	11-10-2011	11-21-2011 14:00	11-28-2011
C78SS-010M-0001-SO	240-5866-37	RES/WET	8330	SO	11-10-2011	11-21-2011 14:00	11-28-2011
C78SS-013M-0001-SO	240-5866-33	RES/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
C78SS-015M-0001-SO	240-5866-35	DL/WET	8330	SO	11-09-2011	11-21-2011 14:00	11-28-2011
Method: 8330 MODIFIED							
C78SB-021M-0001-SO	240-5866-5	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0002-SO	240-5866-7	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0003-SO	240-5866-9	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0004-SO	240-5866-12	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0005-SO	240-5866-13	RES/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0006-SO	240-5866-15	RES/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0101-SO	240-5866-1	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-021M-0102-SO	240-5866-3	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0001-SO	240-5866-21	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0002-SO	240-5866-23	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0003-SO	240-5866-25	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0004-SO	240-5866-27	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0005-SO	240-5866-29	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0006-SO	240-5866-31	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SB-022M-0101-SO	240-5866-17	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1

Laboratory: TA CAN

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: 8330 MODIFIED							
C78SB-022M-0102-SO	240-5866-19	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SS-001M-0001-SO	240-5866-41	DL/WET	3550A	SO	11-10-2011	11-22-2011 08:00	11-27-2011
C78SS-003M-0001-SO	240-5866-43	RES/WET	3550A	SO	11-10-2011	11-22-2011 08:00	11-27-2011
C78SS-007-0001-SO	240-5866-45	RES/WET	3550A	SO	11-10-2011	11-22-2011 08:00	11-27-2011
C78SS-010M-0001-SO	240-5866-37	DL/WET	3550A	SO	11-10-2011	11-22-2011 08:00	11-27-2011
C78SS-013M-0001-SO	240-5866-33	RES/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
C78SS-015M-0001-SO	240-5866-35	DL/WET	3550A	SO	11-09-2011	11-22-2011 08:00	11-27-2011
Method: WS-WC-0050							
C78SB-021M-0001-SO	240-5866-5	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0002-SO	240-5866-7	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0003-SO	240-5866-9	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0004-SO	240-5866-12	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0005-SO	240-5866-13	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0006-SO	240-5866-15	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0101-SO	240-5866-1	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-021M-0102-SO	240-5866-3	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0001-SO	240-5866-21	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0002-SO	240-5866-23	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0003-SO	240-5866-25	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0004-SO	240-5866-27	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0005-SO	240-5866-29	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0006-SO	240-5866-31	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0101-SO	240-5866-17	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SB-022M-0102-SO	240-5866-19	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011

EDD Summary Report by Analysis Method

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

Client Sample ID	Lab Sample ID	Analysis Type	Preparation Method	Matrix	Collection Date	Preparation Date	Analysis Date
Method: WS-WC-0050							
C78SS-001M-0001-SO	240-5866-41	RES/TOT(TOT)	Gen Prep	SO	11-10-2011	11-29-2011 07:00	12-02-2011
C78SS-003M-0001-SO	240-5866-43	RES/TOT(TOT)	Gen Prep	SO	11-10-2011	11-29-2011 07:00	12-02-2011
C78SS-007-0001-SO	240-5866-45	RES/TOT(TOT)	Gen Prep	SO	11-10-2011	11-29-2011 07:00	12-02-2011
C78SS-010M-0001-SO	240-5866-37	RES/TOT(TOT)	Gen Prep	SO	11-10-2011	11-29-2011 07:00	12-02-2011
C78SS-013M-0001-SO	240-5866-33	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011
C78SS-015M-0001-SO	240-5866-35	RES/TOT(TOT)	Gen Prep	SO	11-09-2011	11-29-2011 07:00	12-02-2011

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0001-SO** ***Collected:*** **11/9/2011 8:54:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.062	J	0.0093	MDL	0.067	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0002-SO** ***Collected:*** **11/9/2011 9:43:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.032	J	0.0088	MDL	0.063	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0003-SO** ***Collected:*** **11/9/2011 10:23:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.030	J	0.014	MDL	0.10	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0004-SO** ***Collected:*** **11/9/2011 11:09:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.018	J	0.0096	MDL	0.068	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0005-SO** ***Collected:*** **11/9/2011 11:43:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.011	J	0.010	MDL	0.074	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0006-SO** ***Collected:*** **11/9/2011 12:25:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.011	J	0.011	MDL	0.080	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.033	J	0.0097	MDL	0.069	LOD	mg/Kg	J	RI

Sample ID: **C78SB-021M-0102-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.026	J	0.0096	MDL	0.069	LOD	mg/Kg	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0001-SO** ***Collected:*** **11/9/2011 9:12:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.041	J	0.011	MDL	0.075	LOD	mg/Kg	J	RI

Sample ID: **C78SB-022M-0002-SO** ***Collected:*** **11/9/2011 9:50:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.053	J	0.0098	MDL	0.070	LOD	mg/Kg	J	RI

Sample ID: **C78SB-022M-0004-SO** ***Collected:*** **11/9/2011 11:20:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.018	J	0.010	MDL	0.074	LOD	mg/Kg	J	RI

Sample ID: **C78SB-022M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.026	J	0.0095	MDL	0.068	LOD	mg/Kg	J	RI

Sample ID: **C78SB-022M-0102-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.036	J	0.011	MDL	0.076	LOD	mg/Kg	J	RI

Sample ID: **C78SS-001M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.064	J	0.012	MDL	0.084	LOD	mg/Kg	J	RI

Sample ID: **C78SS-003M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.043	J	0.013	MDL	0.094	LOD	mg/Kg	J	RI

Sample ID: **C78SS-007-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.057	J	0.014	MDL	0.097	LOD	mg/Kg	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: C78SS-013M-0001-SO **Collected:** 11/9/2011 3:30:00 **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.045	J	0.012	MDL	0.084	LOD	mg/Kg	J	Rl

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: C78SB-021M-0001-SO **Collected:** 11/9/2011 8:54:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIELDRIN	5.1	J D	2.4	MDL	8.6	LOD	ug/Kg	J	Rl

Sample ID: C78SB-021M-0002-SO **Collected:** 11/9/2011 9:43:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	17	J D	15	MDL	50	LOD	ug/Kg	J	Rl, Ms, Surr

Sample ID: C78SB-021M-0006-SO **Collected:** 11/9/2011 12:25:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	1.4	J	1.3	MDL	4.1	LOD	ug/Kg	J	Rl, Ms
METHOXYCHLOR	4.5	J	3.0	MDL	10	LOD	ug/Kg	J	Rl, Ms

Sample ID: C78SB-021M-0102-SO **Collected:** 11/9/2011 12:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIELDRIN	1.0	J	0.95	MDL	3.4	LOD	ug/Kg	J	Rl

Sample ID: C78SB-022M-0001-SO **Collected:** 11/9/2011 9:12:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	13	J D	7.6	MDL	25	LOD	ug/Kg	J	Rl, Ms

Sample ID: C78SB-022M-0002-SO **Collected:** 11/9/2011 9:50:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	6.8	J D M	6.3	MDL	20	LOD	ug/Kg	J	Rl, Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8081A** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0004-SO** ***Collected:*** **11/9/2011 11:20:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	9.6	J	3.0	MDL	10	LOD	ug/Kg	J	Rl, Ms

Sample ID: **C78SB-022M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHOXYCHLOR	33	J D	15	MDL	51	LOD	ug/Kg	J	Rl, Ms

Sample ID: **C78SB-022M-0102-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDT	0.70	J	0.63	MDL	2.0	LOD	ug/Kg	J	Rl, Ms

Sample ID: **C78SS-003M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	7.0	J D	4.0	MDL	17	LOD	ug/Kg	J	Rl
4,4'-DDT	7.1	J D	6.4	MDL	20	LOD	ug/Kg	J	Rl, Ms
ENDOSULFAN SULFATE	14	U	8.9	MDL	31	LOD	ug/Kg	UJ	Ms
METHOXYCHLOR	34	U	15	MDL	51	LOD	ug/Kg	UJ	Ms

Sample ID: **C78SS-007-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	9.3	J D M	4.0	MDL	17	LOD	ug/Kg	J	Rl
4,4'-DDT	14	D J	6.4	MDL	20	LOD	ug/Kg	J	Rl, Ms
ENDOSULFAN SULFATE	14	U J	8.8	MDL	30	LOD	ug/Kg	UJ	Ms
METHOXYCHLOR	34	U J	15	MDL	51	LOD	ug/Kg	UJ	Ms

Sample ID: **C78SS-010M-0001-SO** ***Collected:*** **11/10/2011 8:30:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	5.0	J D	2.0	MDL	8.6	LOD	ug/Kg	J	Rl, Ms
4,4'-DDT	8.1	J D	3.2	MDL	10	LOD	ug/Kg	J	Rl, Ms
BETA-BHC	9.0	J D	5.6	MDL	18	LOD	ug/Kg	J	Rl
DIELDRIN	4.2	J D	2.4	MDL	8.6	LOD	ug/Kg	J	Rl

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: SVOA

Method: 8081A **Matrix: SO**

Sample ID: C78SS-015M-0001-SO **Collected:** 11/9/2011 3:55:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDE	5.8	J D	2.0	MDL	8.7	LOD	ug/Kg	J	Rl, Ms, Surr
METHOXYCHLOR	9.0	J D	7.7	MDL	26	LOD	ug/Kg	J	Rl, Ms, Surr

Method Category: SVOA

Method: 8082 **Matrix: SO**

Sample ID: C78SB-022M-0001-SO **Collected:** 11/9/2011 9:12:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	37	J	17	MDL	56	LOD	ug/Kg	J	Rl

Sample ID: C78SB-022M-0102-SO **Collected:** 11/9/2011 12:30:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	22	J	17	MDL	55	LOD	ug/Kg	J	Rl

Sample ID: C78SS-015M-0001-SO **Collected:** 11/9/2011 3:55:00 **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
AROCLOR 1254	32	J	17	MDL	56	LOD	ug/Kg	J	Rl

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: C78SB-021M-0001-SO **Collected:** 11/9/2011 8:54:00 **Analysis Type:** RES-ACID **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	810	U	810	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	810	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	270	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
BENZO(K)FLUORANTHENE	59	J D M	33	MDL	67	LOD	ug/Kg	J	Rl

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0001-SO** ***Collected:*** **11/9/2011 8:54:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **10**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
FLUORANTHENE	200	D	33	MDL	67	LOD	ug/Kg	J-	Ms
INDENO(1,2,3-CD)PYRENE	59	J D	33	MDL	67	LOD	ug/Kg	J	RI
PENTACHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	100	D	33	MDL	67	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0002-SO** ***Collected:*** **11/9/2011 9:43:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **4**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2,4-TRICHLOROBENZENE	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROBENZENE	110	U	39	MDL	200	LOD	ug/Kg	UJ	Surr
1,3-DICHLOROBENZENE	110	U	44	MDL	200	LOD	ug/Kg	UJ	Surr
1,4-DICHLOROBENZENE	110	U	81	MDL	200	LOD	ug/Kg	UJ	Surr
2,4,5-TRICHLOROPHENOL	110	U	100	MDL	610	LOD	ug/Kg	UJ	Surr
2,4,6-TRICHLOROPHENOL	320	U	320	MDL	610	LOD	ug/Kg	UJ	Ms, Surr
2,4-DICHLOROPHENOL	110	U	81	MDL	610	LOD	ug/Kg	UJ	Surr
2,4-DIMETHYLPHENOL	320	U	81	MDL	610	LOD	ug/Kg	UJ	Surr
2,4-DINITROPHENOL	320	U	320	MDL	1300	LOD	ug/Kg	UJ	Ms, Surr
2,4-DINITROTOLUENE	110	U	110	MDL	810	LOD	ug/Kg	UJ	Surr
2,6-DINITROTOLUENE	110	U	85	MDL	810	LOD	ug/Kg	UJ	Surr
2-CHLORONAPHTHALENE	13	U	13	MDL	200	LOD	ug/Kg	UJ	Surr
2-CHLOROPHENOL	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
2-METHYLNAPHTHALENE	200		13	MDL	27	LOD	ug/Kg	J-	Surr
2-METHYLPHENOL	320	U	320	MDL	810	LOD	ug/Kg	UJ	Ms, Surr
2-NITROANILINE	110	U	37	MDL	810	LOD	ug/Kg	UJ	Surr
2-NITROPHENOL	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
3,3'-DICHLOROBENZIDINE	320	U	73	MDL	400	LOD	ug/Kg	UJ	Ms, Surr
3-NITROANILINE	320	U	65	MDL	810	LOD	ug/Kg	UJ	Surr
4,6-DINITRO-2-METHYLPHENOL	320	U	320	MDL	610	LOD	ug/Kg	UJ	Ms, Surr
4-BROMOPHENYL-PHENYLETHER	110	U	53	MDL	200	LOD	ug/Kg	UJ	Surr
4-CHLORO-3-METHYLPHENOL	110	U	85	MDL	610	LOD	ug/Kg	UJ	Surr
4-CHLOROANILINE	110	U	69	MDL	610	LOD	ug/Kg	UJ	Ms, Surr
4-CHLOROPHENYL-PHENYLETHER	110	U	53	MDL	200	LOD	ug/Kg	UJ	Surr
4-NITROANILINE	110	U	110	MDL	810	LOD	ug/Kg	UJ	Surr
4-NITROPHENOL	320	U	320	MDL	1300	LOD	ug/Kg	UJ	Ms, Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0002-SO** ***Collected:*** **11/9/2011 9:43:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **4**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ACENAPHTHENE	13	U	13	MDL	27	LOD	ug/Kg	UJ	Surr
ACENAPHTHYLENE	13	U	13	MDL	27	LOD	ug/Kg	UJ	Surr
ANTHRACENE	270		13	MDL	27	LOD	ug/Kg	J-	Surr
BENZO(A)ANTHRACENE	710		13	MDL	27	LOD	ug/Kg	J-	Surr
BENZO(A)PYRENE	620		13	MDL	27	LOD	ug/Kg	J-	Surr
BENZO(B)FLUORANTHENE	870		13	MDL	27	LOD	ug/Kg	J-	Surr
BENZO(G,H,I)PERYLENE	420		13	MDL	27	LOD	ug/Kg	J-	Surr
BENZO(K)FLUORANTHENE	370	M	13	MDL	27	LOD	ug/Kg	J-	Surr
BENZOIC ACID	1300	U	1300	MDL	2700	LOD	ug/Kg	UJ	Surr
BENZYL ALCOHOL	110	U	85	MDL	1300	LOD	ug/Kg	UJ	Surr
BIS(2-CHLOROETHOXY)METHANE	110	U	89	MDL	400	LOD	ug/Kg	UJ	Surr
CARBAZOLE	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
CHRYSENE	720		4.4	MDL	27	LOD	ug/Kg	J-	Surr
DIBENZO(A,H)ANTHRACENE	13	U	13	MDL	27	LOD	ug/Kg	UJ	Surr
DIBENZOFURAN	57	J	13	MDL	200	LOD	ug/Kg	J	RI, Surr
DI-N-BUTYL PHTHALATE	110	U	61	MDL	200	LOD	ug/Kg	UJ	Surr
DI-N-OCTYL PHTHALATE	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
FLUORANTHENE	1600		13	MDL	27	LOD	ug/Kg	J-	Ms, Surr
FLUORENE	45		13	MDL	27	LOD	ug/Kg	J-	Surr
HEXACHLOROBENZENE	13	U	8.5	MDL	27	LOD	ug/Kg	UJ	Surr
HEXACHLOROBUTADIENE	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
HEXACHLOROETHANE	110	U	36	MDL	200	LOD	ug/Kg	UJ	Surr
INDENO(1,2,3-CD)PYRENE	370		13	MDL	27	LOD	ug/Kg	J-	Surr
ISOPHORONE	110	U	53	MDL	200	LOD	ug/Kg	UJ	Surr
NAPHTHALENE	130		13	MDL	27	LOD	ug/Kg	J-	Surr
NITROBENZENE	13	U	8.9	MDL	400	LOD	ug/Kg	UJ	Surr
N-NITROSO-DI-N-PROPYLAMINE	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
N-NITROSODIPHENYLAMINE	110	U	85	MDL	200	LOD	ug/Kg	UJ	Surr
PENTACHLOROPHENOL	320	U	320	MDL	610	LOD	ug/Kg	UJ	Ms, Surr
PHENANTHRENE	710		13	MDL	27	LOD	ug/Kg	J-	Ms, Surr
PHENOL	110	U	110	MDL	200	LOD	ug/Kg	UJ	Surr
PYRENE	1200		13	MDL	27	LOD	ug/Kg	J-	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0003-SO** ***Collected:*** **11/9/2011 10:23:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	82	U	82	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	82	U	82	MDL	340	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	82	U	82	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	82	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	82	U	82	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	28	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	82	U	82	MDL	340	LOD	ug/Kg	UJ	Ms
ACENAPHTHYLENE	3.9	J	3.4	MDL	6.8	LOD	ug/Kg	J	Rl
ANTHRACENE	5.8	J	3.4	MDL	6.8	LOD	ug/Kg	J	Rl
FLUORANTHENE	64		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	82	U	82	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	27		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0004-SO** ***Collected:*** **11/9/2011 11:09:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	81	U	81	MDL	340	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	81	U	81	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	81	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	81	U	81	MDL	340	LOD	ug/Kg	UJ	Ms
ACENAPHTHYLENE	5.1	J	3.4	MDL	6.8	LOD	ug/Kg	J	Rl
DIBENZOFURAN	20	J	3.4	MDL	51	LOD	ug/Kg	J	Rl
FLUORANTHENE	120		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	120		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0005-SO** ***Collected:*** **11/9/2011 11:43:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	810	U	810	MDL	3400	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	810	U	810	MDL	2000	LOD	ug/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0005-SO** ***Collected:*** **11/9/2011 11:43:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	810	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	270	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	810	U	810	MDL	3400	LOD	ug/Kg	UJ	Ms
ANTHRACENE	50	J D	34	MDL	68	LOD	ug/Kg	J	Rl
FLUORANTHENE	310	D	34	MDL	68	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	160	D	34	MDL	68	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0006-SO** ***Collected:*** **11/9/2011 12:25:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	81	U	81	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	81	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
DIBENZOFURAN	8.8	J	3.3	MDL	51	LOD	ug/Kg	J	Rl
DI-N-BUTYL PHTHALATE	17	J	15	MDL	51	LOD	ug/Kg	J	Rl
FLUORANTHENE	76		3.3	MDL	6.7	LOD	ug/Kg	J-	Ms
FLUORENE	5.2	J	3.3	MDL	6.7	LOD	ug/Kg	J	Rl
PENTACHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	38		3.3	MDL	6.7	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	820	U	820	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	820	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	280	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-021M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
ANTHRACENE	53	J D	34	MDL	68	LOD	ug/Kg	J	RI
FLUORANTHENE	530	D	34	MDL	68	LOD	ug/Kg	J-	Ms
NAPHTHALENE	61	J D	34	MDL	68	LOD	ug/Kg	J	RI
PENTACHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	250	D	34	MDL	68	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-021M-0102-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	81	U	81	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	81	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
ACENAPHTHYLENE	5.5	J	3.3	MDL	6.8	LOD	ug/Kg	J	RI
ANTHRACENE	4.3	J	3.3	MDL	6.8	LOD	ug/Kg	J	RI
DIBENZOFURAN	5.2	J	3.3	MDL	51	LOD	ug/Kg	J	RI
DI-N-BUTYL PHTHALATE	23	J	15	MDL	51	LOD	ug/Kg	J	RI
FLUORANTHENE	31		3.3	MDL	6.8	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	21		3.3	MDL	6.8	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0001-SO** ***Collected:*** **11/9/2011 9:12:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	1600	U	1600	MDL	6600	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	1600	U	1600	MDL	4000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	1600	U	360	MDL	2000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	540	U	340	MDL	3000	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	1600	U	1600	MDL	6600	LOD	ug/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0001-SO** ***Collected:*** **11/9/2011 9:12:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACENAPHTHYLENE	100	J D	66	MDL	130	LOD	ug/Kg	J	RI
ANTHRACENE	69	J D	66	MDL	130	LOD	ug/Kg	J	RI
FLUORANTHENE	620	D	66	MDL	130	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	250	D	66	MDL	130	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0002-SO** ***Collected:*** **11/9/2011 9:50:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	810	U	810	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	810	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	270	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
ACENAPHTHYLENE	54	J D	33	MDL	68	LOD	ug/Kg	J	RI
DIBENZOFURAN	99	J D	33	MDL	510	LOD	ug/Kg	J	RI
FLUORANTHENE	3200	D	33	MDL	68	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	1100	D	33	MDL	68	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0003-SO** ***Collected:*** **11/9/2011 10:40:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
2-METHYLNAPHTHALENE	5.6	J	3.3	MDL	6.8	LOD	ug/Kg	J	RI
2-METHYLPHENOL	81	U	81	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	81	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	81	U	81	MDL	330	LOD	ug/Kg	UJ	Ms
ANTHRACENE	3.9	J	3.3	MDL	6.8	LOD	ug/Kg	J	RI
DI-N-BUTYL PHTHALATE	15	J	15	MDL	51	LOD	ug/Kg	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0003-SO** ***Collected:*** **11/9/2011 10:40:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
FLUORANTHENE	32		3.3	MDL	6.8	LOD	ug/Kg	J-	Ms
FLUORENE	5.6	J	3.3	MDL	6.8	LOD	ug/Kg	J	Rl
INDENO(1,2,3-CD)PYRENE	6.7	J	3.3	MDL	6.8	LOD	ug/Kg	J	Rl
NAPHTHALENE	6.3	J	3.3	MDL	6.8	LOD	ug/Kg	J	Rl
PENTACHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	28		3.3	MDL	6.8	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0004-SO** ***Collected:*** **11/9/2011 11:20:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	81	U	81	MDL	340	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	81	U	81	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	81	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	81	U	81	MDL	340	LOD	ug/Kg	UJ	Ms
DIBENZOFURAN	5.8	J	3.4	MDL	51	LOD	ug/Kg	J	Rl
DI-N-BUTYL PHTHALATE	20	J	15	MDL	51	LOD	ug/Kg	J	Rl
FLUORANTHENE	390		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms
NAPHTHALENE	6.3	J	3.4	MDL	6.8	LOD	ug/Kg	J	Rl
PENTACHLOROPHENOL	81	U	81	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	190		3.4	MDL	6.8	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0005-SO** ***Collected:*** **11/9/2011 11:55:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	810	U	810	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	810	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	270	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
FLUORANTHENE	690	D	33	MDL	67	LOD	ug/Kg	J-	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0005-SO** ***Collected:*** **11/9/2011 11:55:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PENTACHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	290	D	33	MDL	67	LOD	ug/Kg	J-	Ms

Sample ID: **C78SB-022M-0006-SO** ***Collected:*** **11/9/2011 12:28:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	1600	U	1600	MDL	6700	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	1600	U	1600	MDL	4000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	1600	U	360	MDL	2000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	550	U	340	MDL	3000	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	1600	U	1600	MDL	6700	LOD	ug/Kg	UJ	Ms
FLUORANTHENE	88	J D	67	MDL	130	LOD	ug/Kg	J	Rl, Ms
PENTACHLOROPHENOL	1600	U	1600	MDL	3000	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	67	U	67	MDL	130	LOD	ug/Kg	UJ	Ms

Sample ID: **C78SB-022M-0101-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	810	U	810	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	810	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	270	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	810	U	810	MDL	3300	LOD	ug/Kg	UJ	Ms
ACENAPHTHYLENE	48	J D	33	MDL	68	LOD	ug/Kg	J	Rl
FLUORANTHENE	1500	D	33	MDL	68	LOD	ug/Kg	J-	Ms
FLUORENE	41	J D	33	MDL	68	LOD	ug/Kg	J	Rl
PENTACHLOROPHENOL	810	U	810	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	590	D	33	MDL	68	LOD	ug/Kg	J-	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SB-022M-0102-SO** ***Collected:*** **11/9/2011 12:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	80	U	80	MDL	150	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	80	U	80	MDL	330	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	80	U	80	MDL	200	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	80	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	80	U	80	MDL	150	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	80	U	80	MDL	330	LOD	ug/Kg	UJ	Ms
BENZO(B)FLUORANTHENE	6.6	J	3.3	MDL	6.7	LOD	ug/Kg	J	Rl
DI-N-BUTYL PHTHALATE	15	J	15	MDL	50	LOD	ug/Kg	J	Rl
FLUORANTHENE	8.9		3.3	MDL	6.7	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	80	U	80	MDL	150	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	9.5		3.3	MDL	6.7	LOD	ug/Kg	J-	Ms

Sample ID: **C78SS-001M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
2-METHYLNAPHTHALENE	42	J D	34	MDL	68	LOD	ug/Kg	J	Rl
2-METHYLPHENOL	820	U	820	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	820	U J	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	280	U J	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
ANTHRACENE	56	J D	34	MDL	68	LOD	ug/Kg	J	Rl
FLUORANTHENE	450	D J	34	MDL	68	LOD	ug/Kg	J-	Ms
FLUORENE	40	J D	34	MDL	68	LOD	ug/Kg	J	Rl
PENTACHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	300	D J	34	MDL	68	LOD	ug/Kg	J-	Ms

Sample ID: **C78SS-003M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,3'-DICHLOROBENZIDINE	82	U	18	MDL	100	LOD	ug/Kg	UJ	Ms
3-NITROANILINE	82	U	16	MDL	200	LOD	ug/Kg	UJ	Ms, Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SS-003M-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-BROMOPHENYL-PHENYLETHER	28	U	13	MDL	51	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	28	U	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROANILINE	28	U	27	MDL	200	LOD	ug/Kg	UJ	Ms
ACENAPHTHENE	5.6	J	3.4	MDL	6.8	LOD	ug/Kg	J	Rl
BENZOIC ACID	520	J	340	MDL	670	LOD	ug/Kg	J	Rl, Ms, Ms
DIBENZOFURAN	10	J	3.4	MDL	51	LOD	ug/Kg	J	Rl
DI-N-BUTYL PHTHALATE	28	U	15	MDL	51	LOD	ug/Kg	UJ	Ms, Ms
FLUORANTHENE	180		3.4	MDL	6.8	LOD	ug/Kg	J	Ms
N-NITROSODIPHENYLAMINE	28	U	21	MDL	51	LOD	ug/Kg	UJ	Ms, Ms
PHENANTHRENE	92		3.4	MDL	6.8	LOD	ug/Kg	J	Ms

Sample ID: **C78SS-007-0001-SO** ***Collected:*** **11/10/2011 10:10:00** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	71	J	27	MDL	200	LOD	ug/Kg	J	Rl
3,3'-DICHLOROBENZIDINE	81	U J	18	MDL	100	LOD	ug/Kg	UJ	Ms
3-NITROANILINE	81	U J	16	MDL	200	LOD	ug/Kg	UJ	Ms, Ms
4-BROMOPHENYL-PHENYLETHER	27	U J	13	MDL	51	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	27	U J	17	MDL	150	LOD	ug/Kg	UJ	Ms
4-NITROANILINE	27	U J	26	MDL	200	LOD	ug/Kg	UJ	Ms
BENZOIC ACID	2600	J	340	MDL	670	LOD	ug/Kg	J	Ms, Ms
DI-N-BUTYL PHTHALATE	27	U J	15	MDL	51	LOD	ug/Kg	UJ	Ms, Ms
FLUORANTHENE	230	J	3.4	MDL	6.8	LOD	ug/Kg	J	Ms
N-NITROSODIPHENYLAMINE	27	U J	21	MDL	51	LOD	ug/Kg	UJ	Ms, Ms
PHENANTHRENE	120	J	3.4	MDL	6.8	LOD	ug/Kg	J	Ms

Sample ID: **C78SS-010M-0001-SO** ***Collected:*** **11/10/2011 8:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	820	U	820	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	820	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	280	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **SVOA**

Method: **8270C** ***Matrix:*** **SO**

Sample ID: **C78SS-010M-0001-SO** ***Collected:*** **11/10/2011 8:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
FLUORANTHENE	87	D	34	MDL	68	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	100	D	34	MDL	68	LOD	ug/Kg	J-	Ms
PYRENE	57	J D	34	MDL	68	LOD	ug/Kg	J	Rl

Sample ID: **C78SS-013M-0001-SO** ***Collected:*** **11/9/2011 3:30:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	820	U	820	MDL	2000	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	820	U	180	MDL	1000	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	280	U	170	MDL	1500	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	820	U	820	MDL	3400	LOD	ug/Kg	UJ	Ms
DIBENZOFURAN	80	J D	34	MDL	510	LOD	ug/Kg	J	Rl
FLUORANTHENE	3800	D	34	MDL	68	LOD	ug/Kg	J-	Ms
PENTACHLOROPHENOL	820	U	820	MDL	1500	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	1400	D	34	MDL	68	LOD	ug/Kg	J-	Ms

Sample ID: **C78SS-015M-0001-SO** ***Collected:*** **11/9/2011 3:55:00** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRICHLOROPHENOL	1600	U	1600	MDL	3100	LOD	ug/Kg	UJ	Ms
2,4-DINITROPHENOL	1600	U	1600	MDL	6800	LOD	ug/Kg	UJ	Ms
2-METHYLPHENOL	1600	U	1600	MDL	4100	LOD	ug/Kg	UJ	Ms
3,3'-DICHLOROBENZIDINE	1600	U	370	MDL	2100	LOD	ug/Kg	UJ	Ms
4,6-DINITRO-2-METHYLPHENOL	1600	U	1600	MDL	3100	LOD	ug/Kg	UJ	Ms
4-CHLOROANILINE	560	U	350	MDL	3100	LOD	ug/Kg	UJ	Ms
4-NITROPHENOL	1600	U	1600	MDL	6800	LOD	ug/Kg	UJ	Ms
BENZO(A)ANTHRACENE	120	J D	68	MDL	140	LOD	ug/Kg	J	Rl
BENZO(A)PYRENE	84	J D	68	MDL	140	LOD	ug/Kg	J	Rl
FLUORANTHENE	240	D	68	MDL	140	LOD	ug/Kg	J-	Ms
INDENO(1,2,3-CD)PYRENE	92	J D	68	MDL	140	LOD	ug/Kg	J	Rl

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: SVOA

Method: 8270C **Matrix: SO**

Sample ID: C78SS-015M-0001-SO **Collected:** 11/9/2011 3:55:00 **Analysis Type:** RES-ACID **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PENTACHLOROPHENOL	1600	U	1600	MDL	3100	LOD	ug/Kg	UJ	Ms
PHENANTHRENE	560	D	68	MDL	140	LOD	ug/Kg	J-	Ms

Method Category: SVOA

Method: 8330 **Matrix: SO**

Sample ID: C78SB-022M-0002-SO **Collected:** 11/9/2011 9:50:00 **Analysis Type:** DL/WET **Dilution:** 0.98

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.24	U	0.020	MDL	0.24	PQL	mg/kg	UJ	Ms

Sample ID: C78SB-022M-0003-SO **Collected:** 11/9/2011 10:40:00 **Analysis Type:** DL/WET **Dilution:** 0.97

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.24	U	0.019	MDL	0.24	PQL	mg/kg	UJ	Ms

Sample ID: C78SB-022M-0004-SO **Collected:** 11/9/2011 11:20:00 **Analysis Type:** DL/WET **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.25	U	0.020	MDL	0.25	PQL	mg/kg	UJ	Ms

Sample ID: C78SB-022M-0005-SO **Collected:** 11/9/2011 11:55:00 **Analysis Type:** DL/WET **Dilution:** 1.01

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.25	U	0.020	MDL	0.25	PQL	mg/kg	UJ	Ms

Sample ID: C78SB-022M-0006-SO **Collected:** 11/9/2011 12:28:00 **Analysis Type:** DL/WET **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.25	U	0.020	MDL	0.25	PQL	mg/kg	UJ	Ms

Sample ID: C78SS-001M-0001-SO **Collected:** 11/10/2011 10:10:00 **Analysis Type:** DL/WET- **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.057	J	0.020	MDL	0.25	PQL	mg/kg	J	RI, Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: SVOA

Method: 8330 **Matrix:** SO

Sample ID: C78SS-001M-0001-SO **Collected:** 11/10/2011 10:10:00 **Analysis Type:** DL/WET **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	2.0		0.020	MDL	0.25	PQL	mg/kg	J	Ms, Surr
2,4-DINITROTOLUENE	0.024	J PG	0.020	MDL	0.25	PQL	mg/kg	J	RI, Surr
2-AMINO-4,6-DINITROTOLUENE	0.30		0.099	MDL	0.25	PQL	mg/kg	J+	Surr
4-AMINO-2,6-DINITROTOLUENE	2.0	PG	0.020	MDL	0.25	PQL	mg/kg	J+	Ms, Surr

Sample ID: C78SS-003M-0001-SO **Collected:** 11/10/2011 10:10:00 **Analysis Type:** DL/WET- **Dilution:** 0.99

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.047	J	0.020	MDL	0.25	PQL	mg/kg	J	RI, Surr
2,4,6-TRINITROTOLUENE	1.2		0.020	MDL	0.25	PQL	mg/kg	J	Ms, Surr
2,4-DINITROTOLUENE	0.039	J PG	0.020	MDL	0.25	PQL	mg/kg	J	RI, Surr
2-AMINO-4,6-DINITROTOLUENE	0.22	J	0.099	MDL	0.25	PQL	mg/kg	J	RI, Surr
4-AMINO-2,6-DINITROTOLUENE	0.77	PG	0.020	MDL	0.25	PQL	mg/kg	J+	Ms, Surr

Sample ID: C78SS-007-0001-SO **Collected:** 11/10/2011 10:10:00 **Analysis Type:** DL/WET- **Dilution:** 0.98

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.14	J	0.020	MDL	0.24	PQL	mg/kg	J	RI, Surr
2,4,6-TRINITROTOLUENE	250	E	0.020	MDL	0.24	PQL	mg/kg	J	Ms, Surr
2,4-DINITROTOLUENE	0.12	J PG	0.020	MDL	0.24	PQL	mg/kg	J	RI, Surr
2-AMINO-4,6-DINITROTOLUENE	0.90		0.098	MDL	0.24	PQL	mg/kg	J+	Surr

Sample ID: C78SS-007-0001-SORE **Collected:** 11/10/2011 10:10:00 **Analysis Type:** DL2/WET **Dilution:** 49.26

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	260		0.99	MDL	12	PQL	mg/kg	J-	Ms

Sample ID: C78SS-010M-0001-SO **Collected:** 11/10/2011 8:30:00 **Analysis Type:** RES/WET- **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.30		0.020	MDL	0.25	PQL	mg/kg	J+	Surr
2,4,6-TRINITROTOLUENE	5.8		0.020	MDL	0.25	PQL	mg/kg	J	Ms, Surr
2,4-DINITROTOLUENE	0.070	J PG	0.020	MDL	0.25	PQL	mg/kg	J	RI, Surr
2-AMINO-4,6-DINITROTOLUENE	1.0		0.10	MDL	0.25	PQL	mg/kg	J+	Surr
4-AMINO-2,6-DINITROTOLUENE	1.1	PG	0.020	MDL	0.25	PQL	mg/kg	J+	Ms, Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: SVOA

Method: 8330 **Matrix: SO**

Sample ID: C78SS-013M-0001-SO **Collected:** 11/9/2011 3:30:00 **Analysis Type:** RES/WET **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.25	U	0.020	MDL	0.25	PQL	mg/kg	UJ	Ms

Sample ID: C78SS-015M-0001-SO **Collected:** 11/9/2011 3:55:00 **Analysis Type:** DL/WET- **Dilution:** 0.97

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.065	J	0.019	MDL	0.24	PQL	mg/kg	J	RI, Surr
2,4,6-TRINITROTOLUENE	0.32		0.019	MDL	0.24	PQL	mg/kg	J	Ms, Surr
2,4-DINITROTOLUENE	0.030	J PG	0.019	MDL	0.24	PQL	mg/kg	J	RI, Surr
2-AMINO-4,6-DINITROTOLUENE	1.7		0.097	MDL	0.24	PQL	mg/kg	J+	Surr
4-AMINO-2,6-DINITROTOLUENE	0.83	PG	0.019	MDL	0.24	PQL	mg/kg	J+	Ms, Surr

Method Category: VOA

Method: 8260B **Matrix: SO**

Sample ID: C78SB-021V-0001-SO **Collected:** 11/20/2011 8:24:00 **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	25	U	25	MDL	290	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	29	U	10	MDL	290	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	29	U	20	MDL	290	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	29	U	21	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	29	U	12	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	29	U	12	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	12	U	9.7	MDL	290	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	120	U	57	MDL	1200	LOD	ug/Kg	UJ	Surr
ACETONE	240	U	200	MDL	1200	LOD	ug/Kg	UJ	Surr
BENZENE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	29	U	15	MDL	290	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	29	U	12	MDL	290	LOD	ug/Kg	UJ	Surr
BROMOFORM	29	U	22	MDL	290	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	59	U	34	MDL	290	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	12	U	7.5	MDL	290	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0001-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROBENZENE	12	U	7.5	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	120	U	72	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROFORM	29	U	10	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	29	U	16	MDL	290	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	12	U	8.1	MDL	290	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	12	U Q	9.3	MDL	290	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	240	J B	91	MDL	290	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	12	U	6.6	MDL	290	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
TOLUENE	29	U	20	MDL	290	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	29	U	24	MDL	290	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	29	U	21	MDL	290	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-021V-0002-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	27	U	27	MDL	320	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	32	U	12	MDL	320	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	32	U	16	MDL	320	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	32	U	22	MDL	320	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	32	U	23	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	13	U	11	MDL	320	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	130	U	62	MDL	1300	LOD	ug/Kg	UJ	Surr
ACETONE	260	U	220	MDL	1300	LOD	ug/Kg	UJ	Surr
BENZENE	32	U	16	MDL	320	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	32	U	17	MDL	320	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
BROMOFORM	32	U	25	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	65	U	38	MDL	320	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0002-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	57	J	16	MDL	320	LOD	ug/Kg	J	RI, Surr
CARBON TETRACHLORIDE	13	U	8.3	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	13	U	8.3	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	130	U	79	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROFORM	32	U	11	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	32	U	18	MDL	320	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	13	U	8.9	MDL	320	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	13	U Q	10	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	32	U	16	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	270	J B	100	MDL	320	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	13	U	7.2	MDL	320	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	32	U	16	MDL	320	LOD	ug/Kg	UJ	Surr
TOLUENE	96	J	22	MDL	320	LOD	ug/Kg	J	RI, Surr
TRANS-1,2-DICHLOROETHENE	32	U	12	MDL	320	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	32	U	26	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	32	U	23	MDL	320	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-021V-0003-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOFORM	29	U	22	MDL	290	LOD	ug/Kg	UJ	Lcs
CIS-1,3-DICHLOROPROPENE	12	U Q	9.3	MDL	290	LOD	ug/Kg	UJ	Lcs
DIBROMOCHLOROMETHANE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Lcs
METHYLENE CHLORIDE	200	J B	90	MDL	290	LOD	ug/Kg	U	Mb
TRANS-1,3-DICHLOROPROPENE	29	U	23	MDL	290	LOD	ug/Kg	UJ	Lcs

Sample ID: **C78SB-021V-0004-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	26	U	26	MDL	310	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	31	U	21	MDL	310	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	31	U	22	MDL	310	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0004-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2-DIBROMOETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	12	U	10	MDL	310	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	120	U	59	MDL	1200	LOD	ug/Kg	UJ	Surr
ACETONE	250	U	210	MDL	1200	LOD	ug/Kg	UJ	Surr
BENZENE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	31	U	16	MDL	310	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
BROMOFORM	31	U	23	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	61	U	36	MDL	310	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	12	U	7.9	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	12	U	7.9	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	120	U	75	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROFORM	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	31	U	17	MDL	310	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	12	U	8.5	MDL	310	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	12	U Q	9.7	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	240	J B	95	MDL	310	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	12	U	6.9	MDL	310	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
TOLUENE	31	U	21	MDL	310	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	31	U	25	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	31	U	22	MDL	310	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-021V-0005-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	25	U	25	MDL	300	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	30	U	11	MDL	300	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	30	U	14	MDL	300	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0005-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1-DICHLOROETHANE	30	U	20	MDL	300	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	30	U	22	MDL	300	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	30	U	12	MDL	300	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	30	U	12	MDL	300	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	12	U	9.9	MDL	300	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	120	U	58	MDL	1200	LOD	ug/Kg	UJ	Surr
ACETONE	240	U	200	MDL	1200	LOD	ug/Kg	UJ	Surr
BENZENE	30	U	14	MDL	300	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	30	U	16	MDL	300	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	30	U	12	MDL	300	LOD	ug/Kg	UJ	Surr
BROMOFORM	30	U	23	MDL	300	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	60	U	35	MDL	300	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	30	U	14	MDL	300	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	12	U	7.7	MDL	300	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	12	U	7.7	MDL	300	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	120	U	73	MDL	300	LOD	ug/Kg	UJ	Surr
CHLOROFORM	30	U	11	MDL	300	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	30	U	17	MDL	300	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	12	U	8.3	MDL	300	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	12	U Q	9.5	MDL	300	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	30	U	14	MDL	300	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	250	J B	93	MDL	300	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	12	U	6.7	MDL	300	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	30	U	14	MDL	300	LOD	ug/Kg	UJ	Surr
TOLUENE	30	U	20	MDL	300	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	30	U	11	MDL	300	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	30	U	24	MDL	300	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	30	U	12	MDL	300	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	30	U	22	MDL	300	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-021V-0006-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	20	U	20	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0006-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,2,2-TETRACHLOROETHANE	24	U	8.4	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	24	U	11	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	24	U	9.4	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	24	U	9.4	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.4	U	7.7	MDL	240	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	94	U	45	MDL	940	LOD	ug/Kg	UJ	Surr
ACETONE	190	U	160	MDL	940	LOD	ug/Kg	UJ	Surr
BENZENE	24	U	11	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	24	U	9.3	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOFORM	24	U	18	MDL	240	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	47	U	27	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	24	U	11	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.4	U	6.0	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	9.4	U	6.0	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	94	U	58	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROFORM	24	U	8.3	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.4	U	6.5	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.4	U Q	7.5	MDL	240	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	24	U	11	MDL	240	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	220	J B	73	MDL	240	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	9.4	U	5.3	MDL	240	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	24	U	11	MDL	240	LOD	ug/Kg	UJ	Surr
TOLUENE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	24	U	8.7	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	24	U	19	MDL	240	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	24	U	9.2	MDL	240	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0101-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
2-BUTANONE	110	U	49	MDL	1100	LOD	ug/Kg	UJ	Surr
2-HEXANONE	57	U	23	MDL	1100	LOD	ug/Kg	UJ	Surr
ACETONE	230	U	190	MDL	1100	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	110	U Q	70	MDL	290	LOD	ug/Kg	UJ	Lcs, Surr

Sample ID: **C78SB-021V-0101-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	24	U	24	MDL	290	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	29	U	10	MDL	290	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	29	U	19	MDL	290	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	29	U	21	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	11	U	9.4	MDL	290	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	110	U	55	MDL	1100	LOD	ug/Kg	UJ	Surr
BENZENE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	29	U	15	MDL	290	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
BROMOFORM	29	U	22	MDL	290	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	57	U	33	MDL	290	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	11	U	7.3	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	11	U	7.3	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROFORM	29	U	10	MDL	290	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	29	U	16	MDL	290	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	11	U	7.9	MDL	290	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	11	U	9.0	MDL	290	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	93	J	88	MDL	290	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	11	U	6.4	MDL	290	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	29	U	14	MDL	290	LOD	ug/Kg	UJ	Surr
TOLUENE	43	J	19	MDL	290	LOD	ug/Kg	J	RI, Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0101-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,2-DICHLOROETHENE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	29	U	23	MDL	290	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	29	U	11	MDL	290	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	29	U	21	MDL	290	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-021V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROETHANE	99	U Q	60	MDL	250	LOD	ug/Kg	UJ	Lcs

Sample ID: **C78SB-021V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	21	U	21	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	25	U	8.8	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	25	U	9.9	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	25	U	9.9	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.9	U	8.1	MDL	250	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	99	U	47	MDL	990	LOD	ug/Kg	UJ	Surr
BENZENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	25	U	13	MDL	250	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	25	U	9.8	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOFORM	25	U	19	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	49	U	29	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.9	U	6.3	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	9.9	U	6.3	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROFORM	25	U	8.7	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	25	U	14	MDL	250	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.9	U	6.8	MDL	250	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.9	U	7.8	MDL	250	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-021V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
METHYLENE CHLORIDE	99	U	76	MDL	250	LOD	ug/Kg	UJ	Surr
STYRENE	9.9	U	5.5	MDL	250	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
TOLUENE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	25	U	9.1	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	25	U	20	MDL	250	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	25	U	9.6	MDL	250	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0001-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	21	U	21	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	25	U	9.0	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	25	U	10	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	25	U	10	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	10	U	8.3	MDL	250	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	100	U	48	MDL	1000	LOD	ug/Kg	UJ	Surr
ACETONE	200	U	170	MDL	1000	LOD	ug/Kg	UJ	Surr
BENZENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	25	U	13	MDL	250	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	25	U	10	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOFORM	25	U	19	MDL	250	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	50	U	29	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	10	U	6.5	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	10	U	6.5	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	100	U	62	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROFORM	25	U	8.9	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	25	U	14	MDL	250	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	10	U	7.0	MDL	250	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0001-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CIS-1,3-DICHLOROPROPENE	10	U Q	8.0	MDL	250	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	220	J B	78	MDL	250	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	10	U	5.7	MDL	250	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
TOLUENE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	25	U	9.3	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	25	U	20	MDL	250	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	25	U	9.8	MDL	250	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0002-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	27	U	27	MDL	320	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	32	U	11	MDL	320	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	32	U	15	MDL	320	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	32	U	22	MDL	320	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	32	U	23	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	13	U	11	MDL	320	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	130	U	62	MDL	1300	LOD	ug/Kg	UJ	Surr
ACETONE	260	U	220	MDL	1300	LOD	ug/Kg	UJ	Surr
BENZENE	32	U	15	MDL	320	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	32	U	17	MDL	320	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
BROMOFORM	32	U	25	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	65	U	37	MDL	320	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	32	U	15	MDL	320	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	13	U	8.3	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	13	U	8.3	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	130	U	79	MDL	320	LOD	ug/Kg	UJ	Surr
CHLOROFORM	32	U	11	MDL	320	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0002-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROMETHANE	32	U	18	MDL	320	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	13	U	8.9	MDL	320	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	13	U Q	10	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	32	U	15	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	250	J B	99	MDL	320	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	13	U	7.2	MDL	320	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	32	U	15	MDL	320	LOD	ug/Kg	UJ	Surr
TOLUENE	130	J	22	MDL	320	LOD	ug/Kg	J	Rl, Surr
TRANS-1,2-DICHLOROETHENE	32	U	12	MDL	320	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	32	U	26	MDL	320	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	32	U	13	MDL	320	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	32	U	23	MDL	320	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0003-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	29	U	29	MDL	340	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	34	U	12	MDL	340	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	34	U	16	MDL	340	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	34	U	23	MDL	340	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	34	U	25	MDL	340	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	34	U	14	MDL	340	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	34	U	14	MDL	340	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	14	U	11	MDL	340	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	140	U	66	MDL	1400	LOD	ug/Kg	UJ	Surr
ACETONE	270	U	230	MDL	1400	LOD	ug/Kg	UJ	Surr
BENZENE	34	U	16	MDL	340	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	34	U	18	MDL	340	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	34	U	14	MDL	340	LOD	ug/Kg	UJ	Surr
BROMOFORM	34	U	26	MDL	340	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	69	U	40	MDL	340	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	34	U	16	MDL	340	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	14	U	8.8	MDL	340	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	14	U	8.8	MDL	340	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0003-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROETHANE	140	U	84	MDL	340	LOD	ug/Kg	UJ	Surr
CHLOROFORM	34	U	12	MDL	340	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	34	U	19	MDL	340	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	14	U	9.5	MDL	340	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	14	U Q	11	MDL	340	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	34	U	16	MDL	340	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	330	J B	110	MDL	340	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	14	U	7.7	MDL	340	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	34	U	16	MDL	340	LOD	ug/Kg	UJ	Surr
TOLUENE	34	U	23	MDL	340	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	34	U	13	MDL	340	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	34	U	27	MDL	340	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	34	U	13	MDL	340	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	34	U	25	MDL	340	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0004-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	24	U	24	MDL	280	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	28	U	19	MDL	280	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	28	U	20	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	11	U	9.3	MDL	280	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	110	U	54	MDL	1100	LOD	ug/Kg	UJ	Surr
ACETONE	230	U	190	MDL	1100	LOD	ug/Kg	UJ	Surr
BENZENE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	28	U	15	MDL	280	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
BROMOFORM	28	U	21	MDL	280	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	57	U	33	MDL	280	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0004-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON TETRACHLORIDE	11	U	7.2	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	11	U	7.2	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	110	U	69	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROFORM	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	28	U	16	MDL	280	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	11	U	7.8	MDL	280	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	11	U Q	8.9	MDL	280	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	260	J B	87	MDL	280	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	11	U	6.3	MDL	280	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
TOLUENE	28	U	19	MDL	280	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	28	U	23	MDL	280	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	28	U	20	MDL	280	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0005-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	28	U	28	MDL	330	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	33	U	12	MDL	330	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	33	U	16	MDL	330	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	33	U	23	MDL	330	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	33	U	24	MDL	330	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	33	U	13	MDL	330	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	33	U	13	MDL	330	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	13	U	11	MDL	330	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	130	U	64	MDL	1300	LOD	ug/Kg	UJ	Surr
ACETONE	270	U	230	MDL	1300	LOD	ug/Kg	UJ	Surr
BENZENE	33	U	16	MDL	330	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	33	U	17	MDL	330	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	33	U	13	MDL	330	LOD	ug/Kg	UJ	Surr
BROMOFORM	33	U	25	MDL	330	LOD	ug/Kg	UJ	Lcs, Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0005-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOMETHANE	67	U	39	MDL	330	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	33	U	16	MDL	330	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	13	U	8.5	MDL	330	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	13	U	8.5	MDL	330	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	130	U	81	MDL	330	LOD	ug/Kg	UJ	Surr
CHLOROFORM	33	U	12	MDL	330	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	33	U	19	MDL	330	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	13	U	9.2	MDL	330	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	13	U Q	11	MDL	330	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	33	U	16	MDL	330	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	260	J B	100	MDL	330	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	13	U	7.5	MDL	330	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	33	U	16	MDL	330	LOD	ug/Kg	UJ	Surr
TOLUENE	33	U	23	MDL	330	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	33	U	12	MDL	330	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	33	U	27	MDL	330	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	33	U	13	MDL	330	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	33	U	24	MDL	330	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0006-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	120	U	53	MDL	1200	LOD	ug/Kg	UJ	Surr
2-HEXANONE	62	U	25	MDL	1200	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0006-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	26	U	26	MDL	310	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	31	U	21	MDL	310	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	31	U	22	MDL	310	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0006-SO** ***Collected:*** **11/20/2011 8:24:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2-DICHLOROPROPANE	12	U	10	MDL	310	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	120	U	59	MDL	1200	LOD	ug/Kg	UJ	Surr
ACETONE	250	U	210	MDL	1200	LOD	ug/Kg	UJ	Surr
BENZENE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	31	U	16	MDL	310	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
BROMOFORM	31	U	24	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
BROMOMETHANE	62	U	36	MDL	310	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	12	U	7.9	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	12	U	7.9	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	120	U	75	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROFORM	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	31	U	17	MDL	310	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	12	U	8.5	MDL	310	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	12	U Q	9.8	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
DIBROMOCHLOROMETHANE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
METHYLENE CHLORIDE	230	J B	95	MDL	310	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	12	U	6.9	MDL	310	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	31	U	15	MDL	310	LOD	ug/Kg	UJ	Surr
TOLUENE	31	U	21	MDL	310	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	31	U	11	MDL	310	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	31	U	25	MDL	310	LOD	ug/Kg	UJ	Lcs, Surr
TRICHLOROETHENE	31	U	12	MDL	310	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	31	U	22	MDL	310	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SB-022V-0101-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
2-BUTANONE	100	U	44	MDL	1000	LOD	ug/Kg	UJ	Surr
2-HEXANONE	51	U	21	MDL	1000	LOD	ug/Kg	UJ	Surr
ACETONE	210	U	180	MDL	1000	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	100	U Q	63	MDL	260	LOD	ug/Kg	UJ	Lcs, Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0101-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	22	U	22	MDL	260	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	26	U	9.2	MDL	260	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	26	U	12	MDL	260	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	26	U	18	MDL	260	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	26	U	19	MDL	260	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	26	U	10	MDL	260	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	26	U	10	MDL	260	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	10	U	8.4	MDL	260	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	100	U	49	MDL	1000	LOD	ug/Kg	UJ	Surr
BENZENE	26	U	12	MDL	260	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	26	U	13	MDL	260	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	26	U	10	MDL	260	LOD	ug/Kg	UJ	Surr
BROMOFORM	26	U	20	MDL	260	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	51	U	30	MDL	260	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	26	U	12	MDL	260	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	10	U	6.6	MDL	260	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	10	U	6.6	MDL	260	LOD	ug/Kg	UJ	Surr
CHLOROFORM	26	U	9.1	MDL	260	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	26	U	14	MDL	260	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	10	U	7.1	MDL	260	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	10	U	8.1	MDL	260	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	26	U	12	MDL	260	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	83	J	79	MDL	260	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	10	U	5.8	MDL	260	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	26	U	12	MDL	260	LOD	ug/Kg	UJ	Surr
TOLUENE	38	J	18	MDL	260	LOD	ug/Kg	J	RI, Surr
TRANS-1,2-DICHLOROETHENE	26	U	9.5	MDL	260	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	26	U	21	MDL	260	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	26	U	10	MDL	260	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	26	U	19	MDL	260	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROETHANE	100	U Q	61	MDL	250	LOD	ug/Kg	UJ	Lcs

Sample ID: **C78SB-022V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	21	U	21	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	25	U	8.9	MDL	250	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	25	U	10	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	25	U	10	MDL	250	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	10	U	8.2	MDL	250	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	100	U	48	MDL	1000	LOD	ug/Kg	UJ	Surr
BENZENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	25	U	13	MDL	250	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	25	U	9.9	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOFORM	25	U	19	MDL	250	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	50	U	29	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	10	U	6.4	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	10	U	6.4	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROFORM	25	U	8.8	MDL	250	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	25	U	14	MDL	250	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	10	U	6.9	MDL	250	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	10	U	7.9	MDL	250	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	94	J	77	MDL	250	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	10	U	5.6	MDL	250	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	25	U	12	MDL	250	LOD	ug/Kg	UJ	Surr
TOLUENE	25	U	17	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	25	U	9.2	MDL	250	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	25	U	20	MDL	250	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	25	U	9.7	MDL	250	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SB-022V-0102-SO** ***Collected:*** **11/21/2011 6:52:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
VINYL CHLORIDE	25	U	18	MDL	250	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-002-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	96	U	41	MDL	960	LOD	ug/Kg	UJ	Surr
2-HEXANONE	48	U	19	MDL	960	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-002-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	20	U	20	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	24	U	8.6	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	24	U	9.6	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	24	U	9.6	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.6	U	7.9	MDL	240	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	96	U	46	MDL	960	LOD	ug/Kg	UJ	Surr
ACETONE	190	U	160	MDL	960	LOD	ug/Kg	UJ	Surr
BENZENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	24	U	9.5	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOFORM	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	48	U	28	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.6	U	6.2	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	9.6	U	6.2	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	96	U	59	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROFORM	24	U	8.5	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.6	U	6.6	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.6	U	7.6	MDL	240	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-002-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	170	J B	74	MDL	240	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	9.6	U	5.4	MDL	240	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
TOLUENE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	24	U	8.9	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	24	U	19	MDL	240	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	24	U	9.3	MDL	240	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-004-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	98	U	42	MDL	980	LOD	ug/Kg	UJ	Surr
2-HEXANONE	49	U	20	MDL	980	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-004-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	21	U	21	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	24	U	8.7	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	24	U	9.8	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	24	U	9.8	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.8	U	8.0	MDL	240	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	98	U	47	MDL	980	LOD	ug/Kg	UJ	Surr
ACETONE	200	U	170	MDL	980	LOD	ug/Kg	UJ	Surr
BENZENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	24	U	9.7	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOFORM	24	U	19	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	49	U	28	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.8	U	6.3	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-004-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROBENZENE	9.8	U	6.3	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	98	U	60	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROFORM	24	U	8.6	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	24	U	14	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.8	U	6.8	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.8	U	7.7	MDL	240	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	190	J B	75	MDL	240	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	9.8	U	5.5	MDL	240	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
TOLUENE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	24	U	9.0	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	24	U	20	MDL	240	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	24	U	9.5	MDL	240	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-007-0002-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	110	U	49	MDL	1100	LOD	ug/Kg	UJ	Surr
2-HEXANONE	57	U	23	MDL	1100	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-007-0002-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	24	U	24	MDL	280	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	28	U	19	MDL	280	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	28	U	21	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	11	U	9.3	MDL	280	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	110	U	55	MDL	1100	LOD	ug/Kg	UJ	Surr
ACETONE	230	U	190	MDL	1100	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-007-0002-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	28	U	15	MDL	280	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
BROMOFORM	28	U	22	MDL	280	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	57	U	33	MDL	280	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	11	U	7.3	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	11	U	7.3	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	110	U	70	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROFORM	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	28	U	16	MDL	280	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	11	U	7.9	MDL	280	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	11	U	9.0	MDL	280	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	280	B	88	MDL	280	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	11	U	6.4	MDL	280	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	28	U	14	MDL	280	LOD	ug/Kg	UJ	Surr
TOLUENE	28	U	19	MDL	280	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	28	U	10	MDL	280	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	28	U	23	MDL	280	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	28	U	11	MDL	280	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	28	U	21	MDL	280	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-011-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	96	U	41	MDL	960	LOD	ug/Kg	UJ	Surr
2-HEXANONE	48	U	19	MDL	960	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-011-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	20	U	20	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	24	U	8.5	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-011-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1-DICHLOROETHANE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	24	U	9.6	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	24	U	9.6	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.6	U	7.9	MDL	240	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	96	U	46	MDL	960	LOD	ug/Kg	UJ	Surr
ACETONE	190	U	160	MDL	960	LOD	ug/Kg	UJ	Surr
BENZENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	24	U	9.5	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOFORM	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	48	U	28	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.6	U	6.1	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	9.6	U	6.1	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	96	U	59	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROFORM	24	U	8.5	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.6	U	6.6	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.6	U	7.6	MDL	240	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	140	J B	74	MDL	240	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	9.6	U	5.4	MDL	240	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
TOLUENE	24	U	16	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	24	U	8.8	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	24	U	19	MDL	240	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	24	U	9.3	MDL	240	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-014-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
2-BUTANONE	97	U	42	MDL	970	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-014-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
2-HEXANONE	49	U	19	MDL	970	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-014-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE	20	U	20	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	24	U	8.7	MDL	240	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	24	U	9.7	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	24	U	9.7	MDL	240	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	9.7	U	8.0	MDL	240	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	97	U	47	MDL	970	LOD	ug/Kg	UJ	Surr
ACETONE	190	U	170	MDL	970	LOD	ug/Kg	UJ	Surr
BENZENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	24	U	13	MDL	240	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	24	U	9.6	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOFORM	24	U	19	MDL	240	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	49	U	28	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	9.7	U	6.2	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	9.7	U	6.2	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	97	U	59	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROFORM	24	U	8.6	MDL	240	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	24	U	14	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	9.7	U	6.7	MDL	240	LOD	ug/Kg	UJ	Surr
CIS-1,3-DICHLOROPROPENE	9.7	U	7.7	MDL	240	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	140	J B	75	MDL	240	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	9.7	U	5.5	MDL	240	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	24	U	12	MDL	240	LOD	ug/Kg	UJ	Surr
TOLUENE	24	U	17	MDL	240	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	24	U	9.0	MDL	240	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-014-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRANS-1,3-DICHLOROPROPENE	24	U	19	MDL	240	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	24	U	9.4	MDL	240	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	24	U	18	MDL	240	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-016-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RE2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE	58	U	25	MDL	580	LOD	ug/Kg	UJ	Surr
2-HEXANONE	29	U	12	MDL	580	LOD	ug/Kg	UJ	Surr

Sample ID: **C78SS-016-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE	12	U	12	MDL	150	LOD	ug/Kg	UJ	Surr
1,1,2,2-TETRACHLOROETHANE	15	U	5.2	MDL	150	LOD	ug/Kg	UJ	Surr
1,1,2-TRICHLOROETHANE	15	U	7.0	MDL	150	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHANE	15	U	9.9	MDL	150	LOD	ug/Kg	UJ	Surr
1,1-DICHLOROETHENE	15	U	10	MDL	150	LOD	ug/Kg	UJ	Surr
1,2-DIBROMOETHANE	15	U	5.8	MDL	150	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROETHANE	15	U	5.8	MDL	150	LOD	ug/Kg	UJ	Surr
1,2-DICHLOROPROPANE	5.8	U	4.8	MDL	150	LOD	ug/Kg	UJ	Surr
4-METHYL-2-PENTANONE	58	U	28	MDL	580	LOD	ug/Kg	UJ	Surr
ACETONE	120	U	99	MDL	580	LOD	ug/Kg	UJ	Surr
BENZENE	15	U	7.0	MDL	150	LOD	ug/Kg	UJ	Surr
BROMOCHLOROMETHANE	15	U	7.5	MDL	150	LOD	ug/Kg	UJ	Surr
BROMODICHLOROMETHANE	15	U	5.7	MDL	150	LOD	ug/Kg	UJ	Surr
BROMOFORM	15	U	11	MDL	150	LOD	ug/Kg	UJ	Surr
BROMOMETHANE	29	U	17	MDL	150	LOD	ug/Kg	UJ	Surr
CARBON DISULFIDE	15	U	7.0	MDL	150	LOD	ug/Kg	UJ	Surr
CARBON TETRACHLORIDE	5.8	U	3.7	MDL	150	LOD	ug/Kg	UJ	Surr
CHLOROBENZENE	5.8	U	3.7	MDL	150	LOD	ug/Kg	UJ	Surr
CHLOROETHANE	58	U	35	MDL	150	LOD	ug/Kg	UJ	Surr
CHLOROFORM	15	U	5.1	MDL	150	LOD	ug/Kg	UJ	Surr
CHLOROMETHANE	15	U	8.1	MDL	150	LOD	ug/Kg	UJ	Surr
CIS-1,2-DICHLOROETHENE	5.8	U	4.0	MDL	150	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Project Name and Number: W912QR-10-P-0052 - RVAAP

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method Category: **VOA**

Method: **8260B** ***Matrix:*** **SO**

Sample ID: **C78SS-016-0001-SO** ***Collected:*** **11/19/2011 5:28:00** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CIS-1,3-DICHLOROPROPENE	5.8	U	4.6	MDL	150	LOD	ug/Kg	UJ	Surr
DIBROMOCHLOROMETHANE	15	U	7.0	MDL	150	LOD	ug/Kg	UJ	Surr
METHYLENE CHLORIDE	110	J B	45	MDL	150	LOD	ug/Kg	UJ	Mb, Surr
STYRENE	5.8	U	3.2	MDL	150	LOD	ug/Kg	UJ	Surr
TETRACHLOROETHENE	15	U	7.0	MDL	150	LOD	ug/Kg	UJ	Surr
TOLUENE	15	U	9.9	MDL	150	LOD	ug/Kg	UJ	Surr
TRANS-1,2-DICHLOROETHENE	15	U	5.3	MDL	150	LOD	ug/Kg	UJ	Surr
TRANS-1,3-DICHLOROPROPENE	15	U	12	MDL	150	LOD	ug/Kg	UJ	Surr
TRICHLOROETHENE	15	U	5.6	MDL	150	LOD	ug/Kg	UJ	Surr
VINYL CHLORIDE	15	U	10	MDL	150	LOD	ug/Kg	UJ	Surr

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Reason Code Legend

Reason Code	*Description*
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Ccv	Continuing Calibration Verification Percent Difference Lower Rejection
Ccv	Continuing Calibration Verification Percent Difference Upper Estimation
Ccv	Continuing Calibration Verification Percent Difference Upper Rejection
Ccv	Continuing Calibration Verification Percent Recovery Lower Estimation
Ccv	Continuing Calibration Verification Percent Recovery Lower Rejection
Ccv	Continuing Calibration Verification Percent Recovery Upper Estimation
Ccv	Continuing Calibration Verification Percent Recovery Upper Rejection
CcvCC	Continuing Calibration Verification Correlation Coefficient
CcvRrf	Continuing Calibration Verification Relative Response Factor
ContTune	Continuing Tune
Dup=0	Duplicate Sample Count = 0
Dup>1	Duplicate Sample Count > 1
Eb	Equipment Blank Contamination
EtoA	Extraction to Analysis Estimation
EtoA	Extraction to Analysis Rejection
Fb	Field Blank Contamination
Fd	Field Duplicate Precision
IcCC	Initial Calibration Correlation Coefficient
IcRrf	Initial Calibration Relative Response Factor
IcRsd	Initial Calibration Percent Relative Standard Deviation
Icv	Initial Calibration Verification Percent Difference Lower Estimation
Icv	Initial Calibration Verification Percent Difference Lower Rejection
Icv	Initial Calibration Verification Percent Difference Upper Estimation
Icv	Initial Calibration Verification Percent Difference Upper Rejection
Icv	Initial Calibration Verification Percent Recovery Lower Estimation
Icv	Initial Calibration Verification Percent Recovery Lower Rejection
Icv	Initial Calibration Verification Percent Recovery Upper Estimation
Icv	Initial Calibration Verification Percent Recovery Upper Rejection

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

IcvCC	Initial Calibration Verification Correlation Coefficient
IcvRrf	Initial Calibration Verification Relative Response Factor
IllogicalFraction	Illogical Fraction
InitTune	Initial Tune
Is	Internal Standard Estimation
Is	Internal Standard Rejection
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Lcs	Laboratory Control Spike Upper Estimation
Lcs	Laboratory Control Spike Upper Rejection
Lcs=0	Laboratory Control Sample Count = 0
Lcs>1	Laboratory Control Sample Count > 1
Ld	Laboratory Duplicate Precision
Mb	Method Blank Contamination
Mb=0	Method Blank Sample Count = 0
Mb>1	Method Blank Sample Count > 1
Moist	Percent Moisture
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
Ms	Matrix Spike Upper Rejection
Ms=0	Matrix Spike Sample Count = 0
Ms>1	Matrix Spike Sample Count > 1
PEM	Performance Evaluation Mixture
Preservation	Preservation
ProfJudg	Professional Judgment
REM	Resolution Check Mixture
Rl	Reporting Limit
Rl	Reporting Limit > Project Maximum Contamination Limit
Rl	Reporting Limit Trace Value

* denotes a non-reportable result

StoA	Sampling to Analysis Estimation
StoA	Sampling to Analysis Rejection
StoE	Sampling to Extraction Estimation
StoE	Sampling to Extraction Rejection
StoL	Sampling to Leaching Estimation
StoL	Sampling to Leaching Rejection
Surr	Surrogate/Tracer Recovery Lower Estimation
Surr	Surrogate/Tracer Recovery Lower Rejection
Surr	Surrogate/Tracer Recovery Upper Estimation
Surr	Surrogate/Tracer Recovery Upper Rejection
Tb	Trip Blank Contamination
TempEst	Temperature Estimation
TempRej	Temperature Rejection

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: **8330**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
C78SB-021M-0101-SOMSD (C78SB-021M-0001-SO C78SB-021M-0002-SO C78SB-021M-0003-SO C78SB-021M-0004-SO C78SB-021M-0005-SO C78SB-021M-0006-SO C78SB-021M-0101-SO C78SB-021M-0102-SO C78SB-022M-0001-SO C78SB-022M-0101-SO C78SB-022M-0102-SO)	2-AMINO-4,6-DINITROTOLUENE	-	127	80.00-125.00	-	2-AMINO-4,6-DINITROTOLUEN	J+ (all detects)
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SS-001M-0001-SO C78SS-003M-0001-SO C78SS-007-0001-SO C78SS-007-0001-SORE C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	2,4,6-TRINITROTOLUENE	0	0	55.00-140.00	-	2,4,6-TRINITROTOLUENE	J-(all detects) UJ(all non-detects)
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SS-001M-0001-SO C78SS-003M-0001-SO C78SS-007-0001-SO C78SS-007-0001-SORE C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	4-AMINO-2,6-DINITROTOLUENE	321	302	80.00-125.00	-	4-AMINO-2,6-DINITROTOLUEN	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: 8082
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
C78SS-001M-0001-SOMSD (C78SB-021M-0001-SO C78SB-021M-0002-SO C78SB-021M-0003-SO C78SB-021M-0004-SO C78SB-021M-0005-SO C78SB-021M-0006-SO C78SB-021M-0101-SO C78SB-021M-0102-SO C78SB-022M-0001-SO C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SB-022M-0101-SO C78SB-022M-0102-SO C78SS-001M-0001-SO C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	AROCLOR 1260	-	145	60.00-130.00	-	AROCLOR 1260	J+(all detects)

Method: 8081A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
C78SS-001M-0001-SOMS **C78SS-001M-0001-SOMSD** (C78SB-021M-0001-SO C78SB-021M-0002-SO C78SB-021M-0003-SO C78SB-021M-0004-SO C78SB-021M-0005-SO C78SB-021M-0006-SO C78SB-021M-0101-SO C78SB-021M-0102-SO C78SB-022M-0001-SO C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SB-022M-0101-SO C78SB-022M-0102-SO C78SS-001M-0001-SO C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	4,4'-DDE 4,4'-DDT ENDRIN ALDEHYDE GAMMA-CHLORDANE METHOXYCHLOR	586 179 166 255 162	579 158 156 210 161	70.00-125.00 45.00-140.00 35.00-145.00 65.00-125.00 55.00-145.00	- - - - -	4,4'-DDE 4,4'-DDT ENDRIN ALDEHYDE GAMMA-CHLORDANE METHOXYCHLOR	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: 8270C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
C78SS-001M-0001-SOMS **C78SS-001M-0001-SOMSD** (C78SB-021M-0001-SO C78SB-021M-0002-SO C78SB-021M-0003-SO C78SB-021M-0004-SO C78SB-021M-0005-SO C78SB-021M-0006-SO C78SB-021M-0101-SO C78SB-021M-0102-SO C78SB-022M-0001-SO C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SB-022M-0101-SO C78SB-022M-0102-SO C78SS-001M-0001-SO C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	2,4,6-TRICHLOROPHENOL 2,4-DINITROPHENOL 2-METHYLPHENOL 3,3'-DICHLOROBENZIDINE 4,6-DINITRO-2-METHYLPHENOL 4-CHLOROANILINE 4-NITROPHENOL FLUORANTHENE PENTACHLOROPHENOL PHENANTHRENE	0 0 0 0 0 0 0 48 0 -	0 0 0 0 0 0 0 44 0 44	45.00-110.00 15.00-130.00 40.00-105.00 10.00-130.00 30.00-135.00 10.00-100.00 15.00-140.00 55.00-115.00 25.00-120.00 50.00-110.00	- - - - - - - - - -	2,4,6-TRICHLOROPHENOL 2,4-DINITROPHENOL 2-METHYLPHENOL 3,3'-DICHLOROBENZIDINE 4,6-DINITRO-2-METHYLPHEN 4-CHLOROANILINE 4-NITROPHENOL FLUORANTHENE PENTACHLOROPHENOL PHENANTHRENE	J-(all detects) UJ(all non-detects)
C78SS-001M-0001-SOMS **C78SS-001M-0001-SOMSD** (C78SB-021M-0001-SO C78SB-021M-0002-SO C78SB-021M-0003-SO C78SB-021M-0004-SO C78SB-021M-0005-SO C78SB-021M-0006-SO C78SB-021M-0101-SO C78SB-021M-0102-SO C78SB-022M-0001-SO C78SB-022M-0002-SO C78SB-022M-0003-SO C78SB-022M-0004-SO C78SB-022M-0005-SO C78SB-022M-0006-SO C78SB-022M-0101-SO C78SB-022M-0102-SO C78SS-001M-0001-SO C78SS-010M-0001-SO C78SS-013M-0001-SO C78SS-015M-0001-SO)	PHENOL	111	120	40.00-100.00	-	PHENOL	J+(all detects)

Method: 8081A
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
C78SS-007-0001-SOMSD (C78SS-003M-0001-SO C78SS-007-0001-SO)	ENDOSULFAN SULFATE METHOXYCHLOR	- -	- 186	60.00-135.00 55.00-145.00	47 (30.00) 52 (30.00)	ENDOSULFAN SULFATE METHOXYCHLOR	J(all detects) UJ(all non-detects)
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SS-003M-0001-SO C78SS-007-0001-SO)	4,4'-DDD 4,4'-DDT DIELDRIN ENDOSULFAN II ENDRIN GAMMA-CHLORDANE HEPTACHLOR EPOXIDE	- - 219 252 137 179 440	136 166 209 286 150 185 328	30.00-135.00 45.00-140.00 65.00-125.00 35.00-140.00 60.00-135.00 65.00-125.00 65.00-130.00	- - - - - - -	4,4'-DDD 4,4'-DDT DIELDRIN ENDOSULFAN II ENDRIN GAMMA-CHLORDANE HEPTACHLOR EPOXIDE	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: **8270C**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SS-003M-0001-SO C78SS-007-0001-SO)	BENZOIC ACID	-71	-	0.00-110.00	31 (30.00)	BENZOIC ACID	J(all detects) R(all non-detects)
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SS-003M-0001-SO C78SS-007-0001-SO)	3-NITROANILINE DI-N-BUTYL PHTHALATE FLUORANTHENE N-NITROSODIPHENYLAMINE PHENANTHRENE	0 0 - 0 -	- - - - -	25.00-110.00 55.00-110.00 55.00-115.00 50.00-115.00 50.00-110.00	200 (30.00) 200 (30.00) 31 (30.00) 200 (30.00) 36 (30.00)	3-NITROANILINE DI-N-BUTYL PHTHALATE FLUORANTHENE N-NITROSODIPHENYLAMINE PHENANTHRENE	J(all detects) UJ(all non-detects)
C78SS-007-0001-SOMS **C78SS-007-0001-SOMSD** (C78SS-003M-0001-SO C78SS-007-0001-SO)	3,3'-DICHLOROBENZIDINE 4-BROMOPHENYL-PHENYLETH 4-CHLOROANILINE 4-NITROANILINE	0 0 0 33	0 0 0 30	10.00-130.00 45.00-115.00 10.00-100.00 35.00-115.00	- - - -	3,3'-DICHLOROBENZIDINE 4-BROMOPHENYL-PHENYLET 4-CHLOROANILINE 4-NITROANILINE	J-(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: **8260B**
Matrix: **SO**

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
LCS 240-24114/2-A (C78SB-021V-0001-SO C78SB-021V-0002-SO C78SB-021V-0003-SO C78SB-021V-0004-SO C78SB-021V-0005-SO C78SB-021V-0006-SO C78SB-022V-0001-SO C78SB-022V-0002-SO C78SB-022V-0003-SO C78SB-022V-0004-SO C78SB-022V-0005-SO C78SB-022V-0006-SO)	BROMOFORM CIS-1,3-DICHLOROPROPENE DIBROMOCHLOROMETHANE TRANS-1,3-DICHLOROPROPEN	36 66 55 61	- - - -	55.00-135.00 70.00-125.00 65.00-130.00 65.00-125.00	- - - -	BROMOFORM CIS-1,3-DICHLOROPROPENE DIBROMOCHLOROMETHANE TRANS-1,3-DICHLOROPROPE	J- (all detects) UJ (all non-detects)
LCS 240-24253/2-A (C78SB-021V-0101-SO C78SB-021V-0102-SO C78SB-022V-0101-SO C78SB-022V-0102-SO)	CHLOROETHANE	27	-	40.00-155.00	-	CHLOROETHANE	J-(all detects) UJ(all non-detects)

Project Name and Number: W912QR-10-P-0052 - RVAAP

Method Blank Outlier Report

Lab Reporting Batch ID: 240-5866-1 **Laboratory: TA CAN**

EDD Filename: Prep240-5866-1 **eQAPP Name: DoD QSM v4 Master_27May09**

Method: **8260B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 240-24100/1-A	11/21/2011 6:08:00 PM	METHYLENE CHLORIDE	182 ug/Kg	C78SS-002-0001-SO C78SS-004-0001-SO C78SS-007-0002-SO C78SS-011-0001-SO C78SS-014-0001-SO C78SS-016-0001-SO
MB 240-24114/1-A	11/21/2011 1:08:00 PM	METHYLENE CHLORIDE	239 ug/Kg	C78SB-021V-0001-SO C78SB-021V-0002-SO C78SB-021V-0003-SO C78SB-021V-0004-SO C78SB-021V-0005-SO C78SB-021V-0006-SO C78SB-022V-0001-SO C78SB-022V-0002-SO C78SB-022V-0003-SO C78SB-022V-0004-SO C78SB-022V-0005-SO C78SB-022V-0006-SO
MB 240-24253/1-A	11/22/2011 6:32:00 PM	METHYLENE CHLORIDE	97.5 ug/Kg	C78SB-021V-0101-SO C78SB-021V-0102-SO C78SB-022V-0101-SO C78SB-022V-0102-SO

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
C78SB-021V-0001-SO(RES)	METHYLENE CHLORIDE	240 ug/Kg	240U ug/Kg
C78SB-021V-0002-SO(RES)	METHYLENE CHLORIDE	270 ug/Kg	270U ug/Kg
C78SB-021V-0003-SO(RES)	METHYLENE CHLORIDE	200 ug/Kg	200U ug/Kg
C78SB-021V-0004-SO(RES)	METHYLENE CHLORIDE	240 ug/Kg	240U ug/Kg
C78SB-021V-0005-SO(RES)	METHYLENE CHLORIDE	250 ug/Kg	250U ug/Kg
C78SB-021V-0006-SO(RES)	METHYLENE CHLORIDE	220 ug/Kg	220U ug/Kg
C78SB-021V-0101-SO(RES)	METHYLENE CHLORIDE	93 ug/Kg	93U ug/Kg
C78SB-022V-0001-SO(RES)	METHYLENE CHLORIDE	220 ug/Kg	220U ug/Kg
C78SB-022V-0002-SO(RES)	METHYLENE CHLORIDE	250 ug/Kg	250U ug/Kg
C78SB-022V-0003-SO(RES)	METHYLENE CHLORIDE	330 ug/Kg	330U ug/Kg
C78SB-022V-0004-SO(RES)	METHYLENE CHLORIDE	260 ug/Kg	260U ug/Kg
C78SB-022V-0005-SO(RES)	METHYLENE CHLORIDE	260 ug/Kg	260U ug/Kg
C78SB-022V-0006-SO(RES)	METHYLENE CHLORIDE	230 ug/Kg	230U ug/Kg
C78SB-022V-0101-SO(RES)	METHYLENE CHLORIDE	83 ug/Kg	83U ug/Kg
C78SB-022V-0102-SO(RES)	METHYLENE CHLORIDE	94 ug/Kg	94U ug/Kg
C78SS-002-0001-SO(RES)	METHYLENE CHLORIDE	170 ug/Kg	170U ug/Kg
C78SS-004-0001-SO(RES)	METHYLENE CHLORIDE	190 ug/Kg	190U ug/Kg
C78SS-007-0002-SO(RES)	METHYLENE CHLORIDE	280 ug/Kg	280U ug/Kg
C78SS-011-0001-SO(RES)	METHYLENE CHLORIDE	140 ug/Kg	140U ug/Kg
C78SS-014-0001-SO(RES)	METHYLENE CHLORIDE	140 ug/Kg	140U ug/Kg
C78SS-016-0001-SO(RES)	METHYLENE CHLORIDE	110 ug/Kg	110U ug/Kg

Appendix M – Chemical Results for ISM Samples for the Burn Area, Debris Piles A, B, and C

Table M-1. Results for Metals in Soil Samples from Burn Area

		Location	Burn Area	
		Sample ID	C78SS-015M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 1	
Analyte		Units	Value	Q
Metals	Aluminum	mg/kg	6,300	
	Antimony	mg/kg	3.8	
	Arsenic (0-1')	mg/kg	14	
	Barium	mg/kg	420	
	Beryllium	mg/kg	0.6	
	Cadmium	mg/kg	3.4	
	Calcium*	mg/kg	2,800	
	Chromium	mg/kg	1,200	
	Cobalt	mg/kg	12	
	Copper	mg/kg	12,000	
	Iron*	mg/kg	52,000	
	Lead	mg/kg	450	
	Magnesium*	mg/kg	2,100	
	Manganese	mg/kg	640	
	Nickel	mg/kg	400	
	Potassium*	mg/kg	1,000	
	Selenium	mg/kg	2.3	J
	Silver	mg/kg	1.2	
	Sodium*	mg/kg	130	J
	Thallium	mg/kg	1.9	U
	Vanadium	mg/kg	4.8	U
	Zinc	mg/kg	5,300	
	Mercury	mg/kg	0.22	

Table M-2. Results for Explosives in Soil Samples from Burn Area

		Location	Burn Area	
		Sample ID	C78SS-015M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 1	
Analyte		Units	Value	Q
Explosives and Propellants	1,3,5-Trinitrobenzene	mg/kg	0.065	J
	1,3-Dinitrobenzene	mg/kg	0.097	U
	2,4,6-Trinitrotoluene	mg/kg	0.32	J
	2,4-Dinitrotoluene	mg/kg	0.03	J
	2,6,-Dinitrotoluene	mg/kg	0.097	U
	2-Amino-4,6-dinitrotoluene	mg/kg	1.7	J+
	2-Nitrotoluene	mg/kg	0.097	U
	3-Nitrotoluene	mg/kg	0.097	U
	4-Amino-2,6-dinitrotoluene	mg/kg	0.83	J+
	4-Nitrotoluene	mg/kg	0.097	U
	RDX	mg/kg	0.097	U
	Tetryl	mg/kg	0.097	U
	Nitrobenzene	mg/kg	0.097	U
	Nitroglycerin	mg/kg	0.24	U
	HMX	mg/kg	0.097	U
	PETN	mg/kg	0.24	U
	Nitroguanadine	mg/kg	0.04	U
	Nitrocellulose	mg/kg	2.2	J
Asbestos				
	Considered as asbestos-containing material (ACM) if the material contains >1% of asbestos.		ND	

Table M-3. Results for SVOCs in Soil Samples from Burn Area

		Location	Burn Area	
		Sample ID	C78SS-015M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 1	
Parameter		Units	Value	Q
Semivolatile Organics	Benzo[g,h,i]perylene	mg/kg	0.19	
	Benzo[k]fluoranthene	mg/kg	0.14	U
	Benzoic acid	mg/kg	14	U
	Benzyl alcohol	mg/kg	6.8	U
	bis (2-Chloroisopropyl) ether	mg/kg	2.1	U
	Bis(2-chloroethoxy)methane	mg/kg	2.1	U
	Bis(2-chloroethyl)ether	mg/kg	2.1	U
	Bis(2-ethylhexyl) phthalate	mg/kg	1	U
	Butyl benzyl phthalate	mg/kg	1	U
	Carbazole	mg/kg	1	U
	Chrysene	mg/kg	0.29	
	Dibenz(a,h)anthracene	mg/kg	0.14	U
	Dibenzofuran	mg/kg	1	U
	Diethyl phthalate	mg/kg	1	U
	Dimethyl phthalate	mg/kg	1	U
	Di-n-butyl phthalate	mg/kg	1	U
	Di-n-octyl phthalate	mg/kg	1	U
	Fluoranthene	mg/kg	0.24	J-
	Fluorene	mg/kg	0.14	U
	Hexachlorobenzene	mg/kg	0.14	U
	Hexachlorobutadiene	mg/kg	1	U
	Hexachlorocyclopentadiene	mg/kg	6.8	U
	Hexachloroethane	mg/kg	1	U
	Indeno[1,2,3-cd]pyrene	mg/kg	0.092	J
	Isophorone	mg/kg	1	U
	Naphthalene	mg/kg	0.14	U
	Nitrobenzene	mg/kg	2.1	U
	N-Nitrosodi-n-propylamine	mg/kg	1	U
	N-Nitrosodiphenylamine	mg/kg	1	U
	Pentachlorophenol	mg/kg	1.6	U J
	Phenanthrene	mg/kg	0.56	J-
	Phenol	mg/kg	1	U
	Pyrene	mg/kg	0.16	

Table M-4. Results for VOCs in Soil Samples from Burn Area

			Location		Burn Area	
			Sample ID		C78SS-016-0001SO	
			Type Sample		Primary	
			Sample Date		11/10/2011	
			Sample Depth (Ft)		0.5	
			Min REC or RSL			
	Analyte	Units	Value	REC or RSL	Value	Q
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.012	U J
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.015	U J
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.015	U J
	1,1-Dichloroethane	mg/kg	33	RSL	0.015	U J
	1,1-Dichloroethene	mg/kg	120	R9	0.015	U J
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.015	U J
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.015	U J
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.29	U
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.0058	U J
	2-Butanone	mg/kg	22,000	R9	0.058	U J
	2-Hexanone	mg/kg	210	RSL	0.029	U J
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.058	U J
	Acetone	mg/kg	61,000	RSL	0.12	U J
	Benzene	mg/kg	11	RSL	0.015	U J
	Bromochloromethane	mg/kg	8.2	R9	0.015	U J
	Bromodichloromethane	mg/kg	2.7	RSL	0.015	U J
	Bromoform	mg/kg	610	RSL	0.015	U J
	Bromomethane	mg/kg	7.3	RSL	0.029	U J
	Carbon disulfide	mg/kg	820	RSL	0.015	U J
	Carbon tetrachloride	mg/kg	6.1	RSL	0.0058	U J
	Chlorobenzene	mg/kg	290	RSL	0.0058	U J
	Chloroethane	mg/kg	30	R9	0.058	U J
	Chloroform	mg/kg	2.9	RSL	0.015	U J
	Chloromethane	mg/kg	120	RSL	0.015	U J
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.0058	U J
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.0058	U J
	Dibromochloromethane	mg/kg	6.8	RSL	0.015	U J
	Ethylbenzene	mg/kg	54	RSL	0.15	U
	Methylene chloride	mg/kg	110	RSL	0.11	U J
	Styrene	mg/kg	6,300	RSL	0.0058	U J
	Tetrachloroethene	mg/kg	4.8	R9	0.015	U J
	Toluene	mg/kg	5,000	RSL	0.015	U J
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.015	U J
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.015	U J
	Trichloroethene	mg/kg	0.53	R9	0.015	U J
	Vinyl chloride	mg/kg	0.6	RSL	0.015	U J
	Xylene (Total)	mg/kg	630	RSL	0.016	J

Table M-5. Results for Pesticides and PCBs in Soil Samples from Burn Area

		Location	Burn Area	
		Sample ID	C78SS-015M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 1	
Parameter		Units	Value	Q
Pesticides and PCBs	4,4'-DDD	mg/kg	0.01	U
	4,4'-DDE	mg/kg	0.0058	J
	4,4'-DDT	mg/kg	0.01	U
	Aldrin	mg/kg	0.021	U
	alpha-BHC	mg/kg	0.013	U
	alpha-Chlordane	mg/kg	0.015	U
	beta-BHC	mg/kg	0.018	U
	delta-BHC	mg/kg	0.021	U
	Dieldrin	mg/kg	0.0087	U
	Endosulfan I	mg/kg	0.0087	U
	Endosulfan II	mg/kg	0.013	U
	Endosulfan sulfate	mg/kg	0.015	U
	Endrin	mg/kg	0.0087	U
	Endrin aldehyde	mg/kg	0.015	U
	Endrin ketone	mg/kg	0.01	U
	gamma-BHC (Lindane)	mg/kg	0.013	U
	gamma-Chlordane	mg/kg	0.0087	U
	Heptachlor	mg/kg	0.018	U
	Heptachlor epoxide	mg/kg	0.013	U
	Methoxychlor	mg/kg	0.009	J
	Toxaphene	mg/kg	0.34	U
	Aroclor 1016	mg/kg	0.067	U
	Aroclor 1221	mg/kg	0.051	U
	Aroclor 1232	mg/kg	0.046	U
	Aroclor 1242	mg/kg	0.041	U
	Aroclor 1248	mg/kg	0.056	U
	Aroclor 1254	mg/kg	0.032	J
	Aroclor 1260	mg/kg	0.056	U

Table M-6. Results for Metals in Soil Samples from Debris Pile A

		Location	Debris Pile A						
			C78SS-001M-0001-SO		C78SS-003M-0001-SO		C78SS-005M-0001-SO		% RSD
		Type Sample	Primary		QC		QA		
		Sample Date	11/10/2011		11/10/2011		11/10/2011		
		Sample Depth (Ft)	0 - 0.8		0 - 0.8		0 - 0.8		
			Value	Q	Value	Q	Value	Q	
	Aluminum	mg/kg	4,400		4,500		5,830		16.3
	Antimony	mg/kg	1.3		1.9		2.4		29.5
	Arsenic (0-1')	mg/kg	8.4		6.9		7.6		9.8
	Barium	mg/kg	82		65		73		11.6
	Beryllium	mg/kg	0.64		0.62		0.59		4.1
	Cadmium	mg/kg	0.57	J	0.52	J	0.52		5.4
	Calcium*	mg/kg	3,900		2,700		3,030		19.3
	Chromium	mg/kg	28		21		70.9		67.6
	Cobalt	mg/kg	8.2		7.6		7		7.9
	Copper	mg/kg	34		37		37.2		5.0
	Iron*	mg/kg	35,000		31,000		31,400		6.8
	Lead	mg/kg	120		110		145		14.4
	Magnesium*	mg/kg	1,600		1,600		1,600		0.0
	Manganese	mg/kg	650		580		604		5.8
	Nickel	mg/kg	25		21		17.7		17.2
	Potassium*	mg/kg	550		590		733		15.4
	Selenium	mg/kg	0.91		0.96		0.44		37.3
	Silver	mg/kg	0.15	J	0.12	J	0.085	J	27.5
	Sodium*	mg/kg	18	J	16	J	4.2	U	
	Thallium	mg/kg	0.1	J	0.095	J	0.5		100.3
	Vanadium	mg/kg	11		12		12.9		7.9
	Zinc	mg/kg	150		150		131		7.6
	Mercury	mg/kg	0.064	J	0.043	J	0.043		24.2
								% RSD Average =	17.8

Table M-7. Results for Explosives in Soil Samples from Debris Pile A

		Location	Debris Pile A									
		Sample ID	C78SS-001M-0001-SO		C78SS-003M-0001-SO		C78SS-005M-0001-SO		% RSD	C78SB-009-0001-BD		C78SB-009-0002-BD	
		Type Sample	Primary		QC		QA			Primary		QA	
		Sample Date	11/10/2011		11/10/2011		11/10/2011			11/10/2011		11/10/2011	
		Sample Depth (Ft)	0 - 0.8		0 - 0.8		0 - 0.8			Small Piece		Small Piece	
Analyte		Units	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q
Explosives and Propellants	1,3,5-Trinitrobenzene	mg/kg	0.057	J	0.047	J	0.13	U					
	1,3-Dinitrobenzene	mg/kg	0.099	U	0.099	U	0.08	U					
	2,4,6-Trinitrotoluene	mg/kg	2	J	1.2	J	4.5		67.1				
	2,4-Dinitrotoluene	mg/kg	0.024	J	0.039	J	0.08	U					
	2,6,-Dinitrotoluene	mg/kg	0.099	U	0.099	U	0.07	U					
	2-Amino-4,6-dinitrotoluene	mg/kg	0.3	J+	0.22	J	0.44		34.8				
	2-Nitrotoluene	mg/kg	0.099	U	0.099	U	0.09	U					
	3-Nitrotoluene	mg/kg	0.099	U	0.099	U	0.11	U					
	4-Amino-2,6-dinitrotoluene	mg/kg	2	J+	0.77	J+	0.74		61.4				
	4-Nitrotoluene	mg/kg	0.099	U	0.099	U	0.1	U					
	RDX	mg/kg	0.099	U	0.099	U	0.14	U					
	Tetryl	mg/kg	0.099	U	0.099	U	0.09	U					
	Nitrobenzene	mg/kg	0.099	U	0.099	U	0.1	U					
	Nitroglycerin	mg/kg	0.25	U	0.25	U	0.5	U					
	HMX	mg/kg	0.099	U	0.099	U	0.12	U					
	PETN	mg/kg	0.25	U	0.25	U	0.6	U					
	Nitroguanidine	mg/kg	0.039	U	0.04	U	0.12	J					
	Nitrocellulose	mg/kg	4	J	2	J	13	U					
						%RSD Average =			54.4				
Asbestos	Considered as asbestos-containing material (ACM) if the material contains >1% of asbestos.		<1% Chrysotile		<1% Amosite <1% Chrysotile		ND			30% Chrysotile		15% Chrysotile	

Table M-8. Results for SVOCs in Soil Samples from Debris Pile A

		Location	Debris Pile A						
		Sample ID	C78SS-001M-0001-SO		C78SS-003M-0001-SO		C78SS-005M-0001-SO		% RSD
		Type Sample	Primary		QC		QA		
		Sample Date	11/10/2011		11/10/2011		11/10/2011		
		Sample Depth (Ft)	0 - 0.8		0 - 0.8		0 - 0.8		
	Parameter	Units	Value	Q	Value	Q	Value	Q	
Semivolatile Organics	4,6-Dinitro-2-methylphenol	mg/kg	0.82	U J	0.15	U	0.28	U	
	4-Bromophenyl phenyl ether	mg/kg	0.51	U	0.028	U J	0.026	U	
	4-Chloro-3-methylphenol	mg/kg	1.5	U	0.15	U	0.4	U	
	4-Chloroaniline	mg/kg	0.28	U J	0.028	U J	0.041	U Y	
	4-Chlorophenyl phenyl ether	mg/kg	0.51	U	0.051	U	0.027	U	
	4-Nitroaniline	mg/kg	2	U	0.028	U J	0.031	U	
	4-Nitrophenol	mg/kg	0.82	U J	0.34	U	0.42	U	
	Acenaphthene	mg/kg	0.068	U	0.0056	J	0.053		
	Acenaphthylene	mg/kg	0.068	U	0.011		0.01		
	Anthracene	mg/kg	0.056	J	0.023		0.12		74.3
	Benzo[a]anthracene	mg/kg	0.19		0.092		0.28		50.2
	Benzo[a]pyrene	mg/kg	0.17		0.088		0.24		45.8
	Benzo[b]fluoranthene	mg/kg	0.28		0.14		0.41		48.8
	Benzo[g,h,i]perylene	mg/kg	0.13		0.087		0.08		27.3
	Benzo[k]fluoranthene	mg/kg	0.14		0.085		0.13		24.8
	Benzoic acid	mg/kg	6.7		0.52	J	0.85	J	
	Benzyl alcohol	mg/kg	3.4	U	0.34	U	0.086	U	
	bis (2-Chloroisopropyl) ether	mg/kg	1	U	0.1	U			
	Bis(2-chloroethoxy)methane	mg/kg	1	U	0.1	U	0.024	U	
	Bis(2-chloroethyl)ether	mg/kg	1	U	0.1	U	0.026	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.51	U	0.051	U			
	Butyl benzyl phthalate	mg/kg	0.51	U	0.051	U	0.076	U	
	Carbazole	mg/kg	0.51	U	0.051	U	0.07	J	
	Chrysene	mg/kg	0.21		0.099		0.31		51.2
	Dibenz(a,h)anthracene	mg/kg	0.068	U	0.0068	U	0.027		
	Dibenzofuran	mg/kg	0.51	U	0.01	J	0.034	J	
	Diethyl phthalate	mg/kg	0.51	U	0.019	J	0.067	U	
	Dimethyl phthalate	mg/kg	0.51	U	0.051	U	0.066	U	
	Di-n-butyl phthalate	mg/kg	0.51	U	0.028	U J	0.082	U	
	Di-n-octyl phthalate	mg/kg	0.51	U	0.051	U	0.061	U	
	Fluoranthene	mg/kg	0.45	J-	0.18	J	0.72		60.0
	Fluorene	mg/kg	0.04	J	0.01		0.062		69.9
	Hexachlorobenzene	mg/kg	0.068	U	0.0068	U	0.029	U	
	Hexachlorobutadiene	mg/kg	0.51	U	0.051	U	0.065	U	
	Hexachlorocyclopentadiene	mg/kg	3.4	U	0.34	U	0.054	U	
	Hexachloroethane	mg/kg	0.51	U	0.051	U	0.034	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.11		0.058		0.12		34.7
	Isophorone	mg/kg	0.51	U	0.051	U	0.052	U	
	Naphthalene	mg/kg	0.068	U	0.024		0.041		
	Nitrobenzene	mg/kg	1	U	0.1	U	0.061	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.51	U	0.051	U	0.073	U	
	N-Nitrosodiphenylamine	mg/kg	0.51	U	0.028	U J	0.052	U	
	Pentachlorophenol	mg/kg	0.82	U J	0.15	U	0.25	U	
	Phenanthrene	mg/kg	0.3	J-	0.092	J	0.5		68.6
	Phenol	mg/kg	0.51	U J	0.12		0.17	U	
	Pyrene	mg/kg	0.3		0.12		0.54		65.8
							%RSD Average =		49.5

Table M-9. Results for VOCs in Soil Samples from Debris Pile A

			Location		Debris Pile A					
			Sample ID		C78SS-002-0001-SO		C78SS-004-0001-SO		C78SS-006-0001-SO	
			Type Sample		Primary		QC		QA	
			Sample Date		11/10/2011		11/10/2011		11/10/2011	
			Sample Depth (Ft)		0.5		0.5		0.5	
			Min REC or RSL							
	Analyte	Units	Value	REC or RSL	Value	Q	Value	Q	Value	Q
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.02	U J	0.021	U J	0.011	U
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.024	U J	0.024	U J	0.0064	U
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.024	U J	0.024	U J	0.0085	U
	1,1-Dichloroethane	mg/kg	33	RSL	0.024	U J	0.024	U J	0.012	U
	1,1-Dichloroethene	mg/kg	120	R9	0.024	U J	0.024	U J	0.017	U
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.024	U J	0.024	U J	0.011	U
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.024	U J	0.024	U J	0.013	U
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.48	U	0.49	U		
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.0096	U J	0.0098	U J	0.0075	U
	2-Butanone	mg/kg	22,000	R9	0.096	U J	0.098	U J	0.11	U
	2-Hexanone	mg/kg	210	RSL	0.048	U J	0.049	U J	0.073	U
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.096	U J	0.098	U J	0.088	U
	Acetone	mg/kg	61,000	RSL	0.19	U J	0.2	U J	0.084	J B
	Benzene	mg/kg	11	RSL	0.024	U J	0.024	U J	0.0053	U
	Bromochloromethane	mg/kg	8.2	R9	0.024	U J	0.024	U J	0.0085	U
	Bromodichloromethane	mg/kg	2.7	RSL	0.024	U J	0.024	U J	0.0096	U
	Bromoform	mg/kg	610	RSL	0.024	U J	0.024	U J	0.0064	U
	Bromomethane	mg/kg	7.3	RSL	0.048	U J	0.049	U J	0.032	U
	Carbon disulfide	mg/kg	820	RSL	0.024	U J	0.024	U J	0.016	U
	Carbon tetrachloride	mg/kg	6.1	RSL	0.0096	U J	0.0098	U J	0.012	U
	Chlorobenzene	mg/kg	290	RSL	0.0096	U J	0.0098	U J	0.0085	U
	Chloroethane	mg/kg	30	R9	0.096	U J	0.098	U J	0.02	U
	Chloroform	mg/kg	2.9	RSL	0.024	U J	0.024	U J	0.0096	U
	Chloromethane	mg/kg	120	RSL	0.024	U J	0.024	U J	0.027	U
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.0096	U J	0.0098	U J	0.011	U
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.0096	U J	0.0098	U J	0.011	U
	Dibromochloromethane	mg/kg	6.8	RSL	0.024	U J	0.024	U J	0.0085	U
	Ethylbenzene	mg/kg	54	RSL	0.24	U	0.24	U	0.0085	U
	Methylene chloride	mg/kg	110	RSL	0.17	U J	0.19	U J	0.043	U
	Styrene	mg/kg	6,300	RSL	0.0096	U J	0.0098	U J	0.0064	U
	Tetrachloroethene	mg/kg	4.8	R9	0.024	U J	0.024	U J	0.0085	U
	Toluene	mg/kg	5,000	RSL	0.024	U J	0.024	U J	0.0075	U
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.024	U J	0.024	U J	0.012	U
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.024	U J	0.024	U J	0.0075	U
	Trichloroethene	mg/kg	0.53	R9	0.024	U J	0.024	U J	0.011	U
	Vinyl chloride	mg/kg	0.6	RSL	0.024	U J	0.024	U J	0.015	U
	Xylene (Total)	mg/kg	630	RSL	0.48	U	0.49	U	0.019	U

Table M-10. Results for Pesticides and PCBs in Soil Samples from Debris Pile A

		Location	Debris Pile A						
		Sample ID	C78SS-001M-0001-SO		C78SS-003M-0001-SO		C78SS-005M-0001-SO		% RSD
		Type Sample	Primary		QC		QA		
		Sample Date	11/10/2011		11/10/2011		11/10/2011		
		Sample Depth (Ft)	0 - 0.8		0 - 0.8		0 - 0.8		
Parameter		Units	Value	Q	Value	Q	Value	Q	
Pesticides and PCBs	4,4'-DDD	mg/kg	0.02	U	0.02	U	0.0016	U	
	4,4'-DDE	mg/kg	0.017	U J	0.007	J	0.0016	U	
	4,4'-DDT	mg/kg	0.02	U J	0.0071	J	0.029	P	
	Aldrin	mg/kg	0.041	U	0.041	U	0.0026	U	
	alpha-BHC	mg/kg	0.025	U	0.025	U	0.0032	U	
	alpha-Chlordane	mg/kg	0.031	U	0.031	U	0.0016	U	
	beta-BHC	mg/kg	0.036	U	0.036	U	0.0032	U	
	Chlordane (Technical)	mg/kg					0.021	U	
	delta-BHC	mg/kg	0.041	U	0.041	U	0.0016	J P	
	Dieldrin	mg/kg	0.017	U	0.017	U	0.029	P	
	Endosulfan I	mg/kg	0.017	U	0.017	U	0.17	P	
	Endosulfan II	mg/kg	0.025	U	0.025	U	0.0026	J P	
	Endosulfan sulfate	mg/kg	0.031	U	0.014	U J	0.0048	U	
	Endrin	mg/kg	0.017	U	0.017	U	0.0079	J P	
	Endrin aldehyde	mg/kg	0.031	U J	0.031	U	0.0058	U	
	Endrin ketone	mg/kg	0.02	U	0.02	U	0.0042	U	
	gamma-BHC (Lindane)	mg/kg	0.025	U	0.025	U	0.0026	U	
	gamma-Chlordane	mg/kg	0.017	U J	0.017	U	0.0016	U	
	Heptachlor	mg/kg	0.036	U	0.036	U	0.021	U P	
	Heptachlor epoxide	mg/kg	0.025	U	0.025	U	0.0026	U	
	Methoxychlor	mg/kg	0.051	U J	0.034	U J	0.05	P	
	Toxaphene	mg/kg	0.68	U	0.68	U	0.026	U	
	Aroclor 1016	mg/kg	0.33	U	0.066	U	0.011	U	
	Aroclor 1221	mg/kg	0.25	U	0.051	U	0.021	U	
	Aroclor 1232	mg/kg	0.23	U	0.046	U	0.029	U	
	Aroclor 1242	mg/kg	0.2	U	0.041	U	0.031	U	
	Aroclor 1248	mg/kg	0.28	U	0.056	U	0.031	U	
	Aroclor 1254	mg/kg	0.55		0.2		1.1		73.6
	Aroclor 1260	mg/kg	0.28	U J	0.056	U	0.013	U	
						%RSD Average =			73.6

Table M-11. Results for Metals in Soil Samples from Debris Pile B

		Location	Debris Pile B	
		Sample ID	C78SS-010M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 0.8	
Analyte		Units	Value	Q
Metals	Aluminum	mg/kg	5,000	
	Antimony	mg/kg	2.3	
	Arsenic (0-1')	mg/kg	27	
	Barium	mg/kg	150	
	Beryllium	mg/kg	0.98	
	Cadmium	mg/kg	0.73	J
	Calcium*	mg/kg	2,300	
	Chromium	mg/kg	23	
	Cobalt	mg/kg	7.4	
	Copper	mg/kg	36	
	Iron*	mg/kg	31,000	
	Lead	mg/kg	230	
	Magnesium*	mg/kg	1,500	
	Manganese	mg/kg	500	
	Nickel	mg/kg	22	
	Potassium*	mg/kg	680	
	Selenium	mg/kg	4	
	Silver	mg/kg	0.33	J
	Sodium*	mg/kg	64	J
	Thallium	mg/kg	1.1	
	Vanadium	mg/kg	13	
	Zinc	mg/kg	230	
	Mercury	mg/kg	0.23	

* Essential Nutrients

Table M-12. Results for Explosives in Soil Samples from Debris Pile B

		Location	Debris Pile B					
		Sample ID	C78SS-010M-0001-SO		C78SB-012-0001-DB		C78SB-012-0002-DB	
		Type Sample	Primary		Primary		Primary	
		Sample Date	11/10/2011		11/10/2011		11/10/2011	
		Sample Depth (Ft)	0 - 0.8		Small Piece		Small Piece	
Analyte		Units	Value	Q	Value	Q	Value	Q
Explosives and Propellants	1,3,5-Trinitrobenzene	mg/kg	0.3	J+				
	1,3-Dinitrobenzene	mg/kg	0.1	U				
	2,4,6-Trinitrotoluene	mg/kg	5.8	J				
	2,4-Dinitrotoluene	mg/kg	0.07	J				
	2,6,-Dinitrotoluene	mg/kg	0.1	U				
	2-Amino-4,6-dinitrotoluene	mg/kg	1	J+				
	2-Nitrotoluene	mg/kg	0.1	U				
	3-Nitrotoluene	mg/kg	0.1	U				
	4-Amino-2,6-dinitrotoluene	mg/kg	1.1	J+				
	4-Nitrotoluene	mg/kg	0.1	U				
	RDX	mg/kg	0.1	U				
	Tetryl	mg/kg	0.1	U				
	Nitrobenzene	mg/kg	0.1	U				
	Nitroglycerin	mg/kg	0.25	U				
	HMX	mg/kg	0.1	U				
	PETN	mg/kg	0.25	U				
	Nitroguanadine	mg/kg	0.039	U				
	Nitrocellulose	mg/kg	3	J				
Asbestos	Considered as asbestos-containing material (ACM) if the material contains >1% of asbestos.		ND		40% Chrysotile		35% Chrysotile	

Table M-13. Results for SVOCs in Soil Samples from Debris Pile B

		Location	Debris Pile B	
		Sample ID	C78SS-010M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 0.8	
	Parameter	Units	Value	Q
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.51	U
	1,2,4- Trichlorobenzene	mg/kg	0.51	U
	1,3-Dichlorobenzene	mg/kg	0.51	U
	1,4-Dichlorobenzene	mg/kg	0.51	U
	2,4- Dichlorophenol	mg/kg	1.5	U
	2,4- Dimethylphenol	mg/kg	1.5	U
	2,4- Dinitrophenol	mg/kg	0.82	U J
	2,4- Dinitrotoluene	mg/kg	2	U
	2,4,5-Trichlorophenol	mg/kg	1.5	U
	2,4,6- Trichlorophenol	mg/kg	0.82	U J
	2,6- Dinitrotoluene	mg/kg	2	U
	2-Chloronaphthalene	mg/kg	0.51	U
	2-Chlorophenol	mg/kg	0.51	U
	2-Methylnaphthalene	mg/kg	0.068	U
	2-Methylphenol	mg/kg	0.82	U J
	2-Nitroaniline	mg/kg	2	U
	2-Nitrophenol	mg/kg	0.51	U
	3 & 4 Methylphenol	mg/kg	4.1	U
	3,3'-Dichlorobenzidine	mg/kg	0.82	U J
	3-Nitroaniline	mg/kg	2	U
	4,6-Dinitro-2-methylphenol	mg/kg	0.82	U J
	4-Bromophenyl phenyl ether	mg/kg	0.51	U
	4-Chloro-3-methylphenol	mg/kg	1.5	U
	4-Chloroaniline	mg/kg	0.28	U J
	4-Chlorophenyl phenyl ether	mg/kg	0.51	U
	4-Nitroaniline	mg/kg	2	U
	4-Nitrophenol	mg/kg	0.82	U J
	Acenaphthene	mg/kg	0.068	U
	Acenaphthylene	mg/kg	0.068	U
	Anthracene	mg/kg	0.068	U
	Benzo[a]anthracene	mg/kg	0.068	U
	Benzo[a]pyrene	mg/kg	0.068	U
	Benzo[b]fluoranthene	mg/kg	0.068	U
Semivolatile Organics	Benzo[g,h,i]perylene	mg/kg	0.068	U
	Benzo[k]fluoranthene	mg/kg	0.068	U
	Benzoic acid	mg/kg	6.7	U
	Benzyl alcohol	mg/kg	3.4	U
	bis (2-Chloroisopropyl) ether	mg/kg	1	U
	Bis(2-chloroethoxy)methane	mg/kg	1	U
	Bis(2-chloroethyl)ether	mg/kg	1	U
	Bis(2-ethylhexyl) phthalate	mg/kg	0.51	U
	Butyl benzyl phthalate	mg/kg	0.51	U
	Carbazole	mg/kg	0.51	U
	Chrysene	mg/kg	0.068	U
	Dibenz(a,h)anthracene	mg/kg	0.068	U
	Dibenzofuran	mg/kg	0.51	U
	Diethyl phthalate	mg/kg	0.51	U
	Dimethyl phthalate	mg/kg	0.51	U
	Di-n-butyl phthalate	mg/kg	0.51	U
	Di-n-octyl phthalate	mg/kg	0.51	U
	Fluoranthene	mg/kg	0.087	J-
	Fluorene	mg/kg	0.068	U
	Hexachlorobenzene	mg/kg	0.068	U
	Hexachlorobutadiene	mg/kg	0.51	U
	Hexachlorocyclopentadiene	mg/kg	3.4	U
	Hexachloroethane	mg/kg	0.51	U
	Indeno[1,2,3-cd]pyrene	mg/kg	0.068	U
	Isophorone	mg/kg	0.51	U
	Naphthalene	mg/kg	0.068	U
	Nitrobenzene	mg/kg	1	U
	N-Nitrosodi-n-propylamine	mg/kg	0.51	U
	N-Nitrosodiphenylamine	mg/kg	0.51	U
	Pentachlorophenol	mg/kg	0.82	U J
	Phenanthrene	mg/kg	0.1	J-
	Phenol	mg/kg	0.51	U
	Pyrene	mg/kg	0.057	J

Table M-14. Results for VOCs in Soil Samples from Debris Pile B

			Location		Debris Pile B	
			Sample ID		C78SS-011-0001-SO	
			Type Sample		Primary	
			Sample Date		11/10/2011	
			Sample Depth (Ft)		0.5	
			Min REC or RSL			
	Analyte	Units	Value	REC or RSL	Value	Q
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.02	U J
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.024	U J
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.024	U J
	1,1-Dichloroethane	mg/kg	33	RSL	0.024	U J
	1,1-Dichloroethene	mg/kg	120	R9	0.024	U J
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.024	U J
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.024	U J
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.48	U
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.0096	U J
	2-Butanone	mg/kg	22,000	R9	0.096	U J
	2-Hexanone	mg/kg	210	RSL	0.048	U J
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.096	U J
	Acetone	mg/kg	61,000	RSL	0.19	U J
	Benzene	mg/kg	11	RSL	0.024	U J
	Bromochloromethane	mg/kg	8.2	R9	0.024	U J
	Bromodichloromethane	mg/kg	2.7	RSL	0.024	U J
	Bromoform	mg/kg	610	RSL	0.024	U J
	Bromomethane	mg/kg	7.3	RSL	0.048	U J
	Carbon disulfide	mg/kg	820	RSL	0.024	U J
	Carbon tetrachloride	mg/kg	6.1	RSL	0.0096	U J
	Chlorobenzene	mg/kg	290	RSL	0.0096	U J
	Chloroethane	mg/kg	30	R9	0.096	U J
	Chloroform	mg/kg	2.9	RSL	0.024	U J
	Chloromethane	mg/kg	120	RSL	0.024	U J
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.0096	U J
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.0096	U J
	Dibromochloromethane	mg/kg	6.8	RSL	0.024	U J
	Ethylbenzene	mg/kg	54	RSL	0.24	U
	Methylene chloride	mg/kg	110	RSL	0.14	U J
	Styrene	mg/kg	6,300	RSL	0.0096	U J
	Tetrachloroethene	mg/kg	4.8	R9	0.024	U J
	Toluene	mg/kg	5,000	RSL	0.024	U J
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.024	U J
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.024	U J
	Trichloroethene	mg/kg	0.53	R9	0.024	U J
	Vinyl chloride	mg/kg	0.6	RSL	0.024	U J
	Xylene (Total)	mg/kg	630	RSL	0.48	U

Table M-15. Results for Pesticides and PCBs in Soil Samples from Debris Pile B

		Location	Debris Pile B	
		Sample ID	C78SS-010M-0001-SO	
		Type Sample	Primary	
		Sample Date	11/10/2011	
		Sample Depth (Ft)	0 - 0.8	
Parameter		Units	Value	Q
Pesticides and PCBs	4,4'-DDD	mg/kg	0.01	U
	4,4'-DDE	mg/kg	0.005	J
	4,4'-DDT	mg/kg	0.0081	J
	Aldrin	mg/kg	0.02	U
	alpha-BHC	mg/kg	0.013	U
	alpha-Chlordane	mg/kg	0.015	U
	beta-BHC	mg/kg	0.009	J
	Chlordane (Technical)	mg/kg		
	delta-BHC	mg/kg	0.02	U
	Dieldrin	mg/kg	0.0042	J
	Endosulfan I	mg/kg	0.0086	U
	Endosulfan II	mg/kg	0.013	U
	Endosulfan sulfate	mg/kg	0.015	U
	Endrin	mg/kg	0.0086	U
	Endrin aldehyde	mg/kg	0.015	U
	Endrin ketone	mg/kg	0.01	U
	gamma-BHC (Lindane)	mg/kg	0.013	U
	gamma-Chlordane	mg/kg	0.0086	U
	Heptachlor	mg/kg	0.018	U
	Heptachlor epoxide	mg/kg	0.013	U
	Methoxychlor	mg/kg	0.025	U
	Toxaphene	mg/kg	0.34	U
	Aroclor 1016	mg/kg	0.066	U
	Aroclor 1221	mg/kg	0.051	U
	Aroclor 1232	mg/kg	0.046	U
	Aroclor 1242	mg/kg	0.04	U
	Aroclor 1248	mg/kg	0.056	U
	Aroclor 1254	mg/kg	0.21	
	Aroclor 1260	mg/kg	0.056	U

Table M-16. Results for Metals in Soil Samples from Debris Pile C

		Location	Debris Pile C																	
		Sample ID	C78SB-021M-0004-SO		C78SB-022M-0004-SO		C78SB-023M-0004-SO		% RSD	C78SB-021M-0005-SO		C78SB-022M-0005-SO		C78SB-023M-0005-SO		% RSD	C78SB-021M-0006-SO		C78SB-022M-0006-SO		C78SB-023M-0006-SO		% RSD
		Type Sample	Primary		QC		QA			Primary		QC		QA			Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Subsurface Vertical ISM							Subsurface Vertical ISM							Subsurface Vertical ISM						
	Analyte	Units	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Metals	Aluminum	mg/kg	6,900		6,400		9,710		23.3	4,700		3,400		6,220		29.6	5,900		5,400		10,700		39.9
	Antimony	mg/kg	0.24		1.7	U	0.65	J		0.11	J	1.8	U	0.55	J		0.16		1.9	U	0.49	J	
	Arsenic (0-1')	mg/kg	9		7.7		9		8.8	7.1		5.1		5.6		17.5	8.8		7.2		9.6		14.3
	Barium	mg/kg	43		39		82.5		43.8	34		27		49		30.7	45		37		76.1		39.2
	Beryllium	mg/kg	0.46		0.41		0.51		10.9	0.36		0.31		0.38		10.3	0.45		0.42		0.55		14.4
	Cadmium	mg/kg	0.29		0.22		0.26		13.7	0.065	J	0.066	J	0.026	J	43.6	0.15	J	0.13	J	0.16		10.4
	Calcium*	mg/kg	1,300		1,100		1,730		23.4	3,400		4,400		9,780		58.6	9,600		7,400		10,200		16.3
	Chromium	mg/kg	13		13		238		147.6	9.3		8.1		291		158.5	12		11		165		141.4
	Cobalt	mg/kg	7.2		6.9		7.5		4.2	5.6		4.6		5.1		9.8	7.7		7.5		8		3.3
	Copper	mg/kg	11		11		17.7		29.2	8.4		6.1		10.3		25.4	9.6		7.7		14.5		33.1
	Iron*	mg/kg	17,000		16,000		25,900		27.8	16,000		13,000		20,200		22.1	18,000		17,000		24,300		20.0
	Lead	mg/kg	13		11		19.6		31.0	10		8.7		12.5		18.6	12		11		16.8		23.4
	Magnesium*	mg/kg	1,500		1,400		1,730		11.0	1,400		950		1,080		20.3	2,500		1,800		2,990		24.6
	Manganese	mg/kg	300		270		450		28.4	190		210		361		36.9	340		270		509		32.9
	Nickel	mg/kg	16		15		15.1		3.6	12		9.7		10.8		10.6	16		13		16.1		11.7
	Potassium*	mg/kg	610		590		1,510		58.2	560		410		1,120		53.7	710		610		1,780		62.8
	Selenium	mg/kg	0.84		0.82		0.26	J	51.4	0.74		0.56		0.34	J	36.6	0.72		0.75		0.89		11.5
	Silver	mg/kg	0.017	J	0.02	J	0.017		9.6	0.088	U	0.012	J	0.017	U		0.021	J	0.022	J	0.017	U	
	Sodium*	mg/kg	21	J	20	J	4	U		22	J	19	J	4	U		29	J	27	J	4	U	
	Thallium	mg/kg	0.11	J	0.091	J	0.41	J	87.9	0.09	J	0.065	J	0.29	J	83.1	0.098	J	0.1	J	0.37	J	82.6
	Vanadium	mg/kg	12		12		16.8		20.4	9.5		7.2		11.2		21.6	11		10		17.1		30.3
	Zinc	mg/kg	100		80		270		69.6	45		43		44.3		2.3	63		64		73.1		8.3
	Mercury	mg/kg	0.018	J	0.018	J	0.014		13.9	0.011	J	0.068	U	0.0046	J		0.011	J	0.072	U	0.014		
							%RSD Average =		34.2					%RSD Average =		36.3					%RSD Average =		32.7

* Essential Nutrients

Table M-17. Results for Explosives in Soil Samples from Debris Pile C

		Location	Debris Pile C																			
		Sample ID	C78SB-021M-0003-SO		C78SB-022M-0003-SO		C78SB-023M-0003-SO		C78SB-021M-0004-SO		C78SB-022M-0004-SO		C78SB-023M-0004-SO		C78SB-021M-0005-SO		C78SB-022M-0005-SO		C78SB-023M-0005-SO		C78SB-021M-0006-SO		C78SB-022M-0006-SO		C78SB-023M-0006-SO	
		Type Sample	Primary		QC		QA		Primary		QC		QA		Primary		QC		QA		Primary		QC		QA	
		Sample Date	11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011		11/9/2011	
		Sample Depth (Ft)	1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5		1 - 5	
			Subsurface Vertical ISM																							
Analyte		Units	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
Explosives and Propellants	1,3,5-Trinitrobenzene	mg/kg	0.099	U	0.097	U	0.13	U	0.1	U	0.099	U	0.13	U	0.096	U	0.1	U	0.13	U	0.1	U	0.099	U	0.13	U
	1,3-Dinitrobenzene	mg/kg	0.099	U	0.097	U	0.08	U	0.1	U	0.099	U	0.079	U	0.096	U	0.1	U	0.079	U	0.1	U	0.099	U	0.079	U
	2,4,6-Trinitrotoluene	mg/kg	0.099	U	0.24	U J	0.09	U	0.1	U	0.25	U J	0.089	U	0.096	U	0.25	U J	0.089	U	0.1	U	0.25	U J	0.089	U
	2,4-Dinitrotoluene	mg/kg	0.099	U	0.097	U	0.08	U	0.1	U	0.099	U	0.079	U	0.096	U	0.1	U	0.079	U	0.1	U	0.099		0.079	U
	2,6-Dinitrotoluene	mg/kg	0.099	U	0.097	U	0.07	U	0.1	U	0.099	U	0.069	U	0.096	U	0.1	U	0.069	U	0.1	U	0.099	U	0.069	U
	2-Amino-4,6-dinitrotoluene	mg/kg	0.099	U	0.097	U	0.09	U	0.1	U	0.099	U	0.089	U	0.096	U	0.1	U	0.089	U	0.1	U	0.099	U	0.089	U
	2-Nitrotoluene	mg/kg	0.099	U	0.097	U	0.09	U	0.1	U	0.099	U	0.089	U	0.096	U	0.1	U	0.089	U	0.1	U	0.099	U	0.089	U
	3-Nitrotoluene	mg/kg	0.099	U	0.097	U	0.11	U	0.1	U	0.099	U	0.11	U	0.096	U	0.1	U	0.011	U	0.1	U	0.099	U	0.11	U
	4-Amino-2,6-dinitrotoluene	mg/kg	0.099	U	0.097	U	0.08	U	0.1	U	0.099	U	0.079	U	0.096	U	0.1	U	0.079	U	0.1	U	0.099	U	0.079	U
	4-Nitrotoluene	mg/kg	0.099	U	0.097	U	0.1	U	0.1	U	0.099	U	0.099	U	0.096	U	0.1	U	0.099	U	0.1	U	0.099	U	0.099	U
	RDX	mg/kg	0.099	U	0.097	U	0.14	U	0.1	U	0.099	U	0.14	U	0.096	U	0.1	U	0.14	U	0.1	U	0.099	U	0.14	U
	Tetryl	mg/kg	0.099	U	0.097	U	0.09	U	0.1	U	0.099	U	0.089	U	0.096	U	0.1	U	0.089	U	0.1	U	0.099	U	0.089	U
	Nitrobenzene	mg/kg	0.099	U	0.097	U	0.1	U	0.1	U	0.099	U	0.099	U	0.096	U	0.1	U	0.099	U	0.1	U	0.099	U	0.099	U
	Nitroglycerin	mg/kg	0.25	U	0.24	U	0.5	U	0.26	U	0.25	U	0.5	U	0.24	U	0.25	U	0.5	U	0.25	U	0.25	U	0.5	U
	HMX	mg/kg	0.099	U	0.097	U	0.12	U	0.1	U	0.099	U	0.12	U	0.096	U	0.1	U	0.12	U	0.1	U	0.099	U	0.12	U
	PETN	mg/kg	0.25	U	0.24	U	0.6	U	0.26	U	0.25	U	0.59	U	0.24	U	0.25	U	0.59	U	0.25	U	0.25	U	0.6	U
	Nitroguanadine	mg/kg	0.039	U	0.038	U	0.06	U	0.038	U	0.04	U	0.06	U	0.04	U	0.039	U	0.06	U	0.04	U	0.04	U	0.061	U
	Nitrocellulose	mg/kg	1.2	J	0.86	J	13	U	1.8	U	1.8	U	13	U	1.8	U	1.8	U	13	U	1.8	U	1.8	U	13	U
Asbestos																										
	Considered as asbestos-containing material (ACM) if the material contains >1% of asbestos.		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

All results were below the RL. No %RSDs were calculated.

ND = Not Detected

Table M-18. Results for SVOCs in Soil Samples from Debris Pile C

		Location	Debris Pile C						
		Sample ID	C78SB-021M-0101-SO		C78SB-022M-0101-SO		C78SB-023M-0101-SO		% RSD
		Type Sample	Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	1 - 3		1 - 3		1 - 3		
			Subsurface Horizontal ISM						
Parameter		Units	Value	Q	Value	Q	Value	Q	
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.51	U	0.51	U	0.024	U	
	1,2,4- Trichlorobenzene	mg/kg	0.51	U	0.51	U	0.021	U	
	1,3-Dichlorobenzene	mg/kg	0.51	U	0.51	U	0.02	U	
	1,4-Dichlorobenzene	mg/kg	0.51	U	0.51	U	0.019	U	
	2,4- Dichlorophenol	mg/kg	1.5	U	1.5	U	0.12	U	
	2,4- Dimethylphenol	mg/kg	1.5	U	1.5	U	0.1	U	
	2,4- Dinitrophenol	mg/kg	0.82	U J	0.81	U J	0.27	U	
	2,4- Dinitrotoluene	mg/kg	2	U	2	U	0.024	U	
	2,4,5-Trichlorophenol	mg/kg	1.5	U	1.5	U	0.13	U	
	2,4,6- Trichlorophenol	mg/kg	0.82	U J	0.81	U J	0.13	U	
	2,6- Dinitrotoluene	mg/kg	2	U	2	U	0.024	U	
	2-Chloronaphthalene	mg/kg	0.51	U	0.51	U	0.023	U	
	2-Chlorophenol	mg/kg	0.51	U	0.51	U	0.34	U	
	2-Methylnaphthalene	mg/kg	0.086		0.11		0.23		54.3
	2-Methylphenol	mg/kg	0.82	U J	0.81	U J	0.43	U	
	2-Nitroaniline	mg/kg	2	U	2	U	0.023	U	
	2-Nitrophenol	mg/kg	0.51	U	0.51	U	0.28	U	
	3 & 4 Methylphenol	mg/kg	4.1	U	4.1	U	0.66	U	
	3,3'-Dichlorobenzidine	mg/kg	0.82	U J	0.81	U J	0.15	U	
	3-Nitroaniline	mg/kg	2	U	2	U	0.022	U	
	4,6-Dinitro-2-methylphenol	mg/kg	0.82	U J	0.81	U J	0.27	U	
	4-Bromophenyl phenyl ether	mg/kg	0.51	U	0.51	U	0.025	U	
Semivolatile Organics	4-Chloro-3-methylphenol	mg/kg	1.5	U	1.5	U	0.39	U	
	4-Chloroaniline	mg/kg	0.28	U J	0.27	U J	0.04	U	
	4-Chlorophenyl phenyl ether	mg/kg	0.51	U	0.51	U	0.026	U	
	4-Nitroaniline	mg/kg	2	U	2	U	0.03	U	
	4-Nitrophenol	mg/kg	0.82	U J	0.81	U J	0.41	U	
	Acenaphthene	mg/kg	0.068	U	0.068	U	0.12		
	Acenaphthylene	mg/kg	0.068	U	0.048	J	0.35		
	Anthracene	mg/kg	0.053	J	0.15		0.74		118.3
	Benzo[a]anthracene	mg/kg	0.24		0.63		2.5		107.5
	Benzo[a]pyrene	mg/kg	0.23		0.65		1.4		78.0
	Benzo[b]fluoranthene	mg/kg	0.32		0.97		2.3		84.3
	Benzo[g,h,i]perylene	mg/kg	0.18		0.45		0.71		59.3
	Benzo[k]fluoranthene	mg/kg	0.17		0.48		0.84		67.5
	Benzoic acid	mg/kg	6.7	U	6.7	U	0.29	U	
	Benzyl alcohol	mg/kg	3.4	U	3.3	U	0.084	U	
	bis (2-Chloroisopropyl) ether	mg/kg	1	U	1	U	0.03	U	
	Bis(2-chloroethoxy)methane	mg/kg	1	U	1	U	0.023	U	
	Bis(2-chloroethyl)ether	mg/kg	1	U	1	U	0.025	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.51	U	0.51	U			
	Butyl benzyl phthalate	mg/kg	0.51	U	0.51	U	0.074	U	
	Carbazole	mg/kg	0.51	U	0.51	U	0.39		
	Chrysene	mg/kg	0.28		0.76		2		87.6
Semivolatile Organics	Dibenz(a,h)anthracene	mg/kg	0.068	U	0.068	U	0.24		
	Dibenzofuran	mg/kg	0.51	U	0.51	U	0.34		
	Diethyl phthalate	mg/kg	0.51	U	0.51	U	0.065	U	
	Dimethyl phthalate	mg/kg	0.51	U	0.51	U	0.064	U	
	Di-n-butyl phthalate	mg/kg	0.51	U	0.51	U	0.08	U	
	Di-n-octyl phthalate	mg/kg	0.51	U	0.51	U	0.06	U	
	Fluoranthene	mg/kg	0.53	J-	1.5	J-	0.00037	U	
	Fluorene	mg/kg	0.068	U	0.041	J	0.43		
	Hexachlorobenzene	mg/kg	0.068	U	0.068	U	0.028	U	
	Hexachlorobutadiene	mg/kg	0.51	U	0.51	U	0.063	U	
	Hexachlorocyclopentadiene	mg/kg	3.4	U	3.3	U	0.053	U	
	Hexachloroethane	mg/kg	0.51	U	0.51	U	0.033	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.15		0.42		1		83.0
	Isophorone	mg/kg	0.51	U	0.51	U	0.051	U	
	Naphthalene	mg/kg	0.061	J	0.075		0.18		61.7
	Nitrobenzene	mg/kg	1	U	1	U	0.06	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.51	U	0.51	U	0.071	U	
	N-Nitrosodiphenylamine	mg/kg	0.51	U	0.51	U	0.051	U	
	Pentachlorophenol	mg/kg	0.82	U J	0.81	U J	0.24	U	
	Phenanthrene	mg/kg	0.25	J-	0.59	J-	4.5		132.7
	Phenol	mg/kg	0.51	U	0.51	U	0.16	U	
	Pyrene	mg/kg	0.4		1.1		4.5		109.7
							%RSD Average =		80.3

Table M-18. Results for SVOCs in Soil Samples from Debris Pile C (continued)

		Location	Debris Pile C											
		Sample ID	C78SB-021M-0102-SO		C78SB-022M-0102-SO		C78SB-023M-0102-SO		% RSD	C78SB-021M-0001-SO		C78SB-022M-0001-SO		C78SB-023M-0001-SO		% RSD
		Type Sample	Primary		QC		QA			Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	3 - 5		3 - 5		3 - 5			1 - 5		1 - 5		1 - 5		
			Subsurface Horizontal ISM							Subsurface Vertical ISM						
Parameter		Units	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.051	U	0.05	U	0.024	U		0.5	U	1	U	0.024	U	
	1,2,4- Trichlorobenzene	mg/kg	0.051	U	0.05	U	0.021	U		0.5	U	1	U	0.021	U	
	1,3-Dichlorobenzene	mg/kg	0.051	U	0.05	U	0.02	U		0.5	U	1	U	0.02	U	
	1,4-Dichlorobenzene	mg/kg	0.051	U	0.05	U	0.019	U		0.5	U	1	U	0.019	U	
	2,4- Dichlorophenol	mg/kg	0.15	U	0.15	U	0.12	U		1.5	U	3	U	0.12	U	
	2,4- Dimethylphenol	mg/kg	0.15	U	0.15	U	0.1	U		1.5	U	3	U	0.099	U	
	2,4- Dinitrophenol	mg/kg	0.081	U J	0.08	U J	0.27	U		0.81	U J	1.6	U J	0.27	U	
	2,4- Dinitrotoluene	mg/kg	0.2	U	0.2	U	0.024	U		2	U	4	U	0.024	U	
	2,4,5-Trichlorophenol	mg/kg	0.15	U	0.15	U	0.13	U		1.5	U	3	U	0.13	U	
	2,4,6- Trichlorophenol	mg/kg	0.081	U J	0.08	U J	0.13	U		0.81	U J	1.6	U J	0.13	U	
	2,6- Dinitrotoluene	mg/kg	0.2	U	0.2	U	0.024	U		2	U	4	U	0.024	U	
	2-Chloronaphthalene	mg/kg	0.051	U	0.05	U	0.023	U		0.5	U	1	U	0.023	U	
	2-Chlorophenol	mg/kg	0.051	U	0.05	U	0.34	U		0.5	U	1	U	0.34	U	
	2-Methylnaphthalene	mg/kg	0.012		0.0067	U	0.036			0.067	U	0.13	U	0.16		
	2-Methylphenol	mg/kg	0.081	U J	0.08	U J	0.42	U		0.81	U J	1.6	U J	0.42	U	
	2-Nitroaniline	mg/kg	0.2	U	0.2	U	0.023	U		2	U	4	U	0.023	U	
	2-Nitrophenol	mg/kg	0.051	U	0.05	U	0.28	U		0.5	U	1	U	0.28	U	
	3 & 4 Methylphenol	mg/kg	0.4	U	0.4	U	0.66	U		4	U	8.1	U	0.65	U	
	3,3'-Dichlorobenzidine	mg/kg	0.081	U J	0.08	U J	0.15	U		0.81	U J	1.6	U J	0.15	U	
	3-Nitroaniline	mg/kg	0.3	U	0.2	U	0.022	U		2	U	4	U	0.022	U	
	4,6-Dinitro-2-methylphenol	mg/kg	0.081	U J	0.08	U J	0.27	U		0.81	U J	1.6	U J	0.27	U	
	4-Bromophenyl phenyl ether	mg/kg	0.051	U	0.05	U	0.025	U		0.5	U	1	U	0.025	U	
Semivolatile Organics	4-Chloro-3-methylphenol	mg/kg	0.15	U	0.15	U	0.38	U		1.5	U	3	U	0.38	U	
	4-Chloroaniline	mg/kg	0.027	U J	0.027	U J	0.039	U		0.27	U J	0.54	U J	0.039	U	
	4-Chlorophenyl phenyl ether	mg/kg	0.051	U	0.05	U	0.026	U		0.5	U	1	U	0.026	U	
	4-Nitroaniline	mg/kg	0.2	U	0.2	U	0.03	U		2	U	4	U	0.03	U	
	4-Nitrophenol	mg/kg	0.081	U J	0.08	U J	0.4	U		0.81	U J	1.6	U J	0.4	U	
	Acenaphthene	mg/kg	0.0068	U	0.0067	U	0.02			0.067	U	0.13	U	0.15		
	Acenaphthylene	mg/kg	0.0055	J	0.0067	U	0.087			0.067	U	0.1	J	0.76		
	Anthracene	mg/kg	0.0043	J	0.0067	U	0.17			0.067	U	0.069	J	1.2		
	Benzo[a]anthracene	mg/kg	0.023		0.0067	U	0.42			0.1		0.28		5		154.9
	Benzo[a]pyrene	mg/kg	0.027		0.0067	U	0.24			0.088		0.27		2.3		138.6
	Benzo[b]fluoranthene	mg/kg	0.038		0.0066	J	0.41		148.1	0.13		0.35		3.9		144.9
	Benzo[g,h,i]perylene	mg/kg	0.023		0.0067	U	0.13			0.075		0.19		0.97		118.3
	Benzo[k]fluoranthene	mg/kg	0.017		0.0067	U	0.15			0.059	J	0.25		1.3		124.6
	Benzoic acid	mg/kg	0.67	U	0.66	U	0.29	U		6.6	U	13	U	0.29	U	
	Benzyl alcohol	mg/kg	0.33	U	0.33	U	0.084	U		3.3	U	6.6	U	0.083	U	
	bis (2-Chloroisopropyl) ether	mg/kg	0.1	U	0.1	U	0.03	U		1	U	2	U	0.03	U	
	Bis(2-chloroethoxy)methane	mg/kg	0.1	U	0.1	U	0.023	U		1	U	2	U	0.023	U	
	Bis(2-chloroethyl)ether	mg/kg	0.1	U	0.1	U	0.025	U		1	U	2	U	0.025	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.019	J	0.041	J				0.5	U	1	U			
	Butyl benzyl phthalate	mg/kg	0.051	U	0.05	U	0.074	U		0.5	U	1	U	0.073	U	
	Carbazole	mg/kg	0.051	U	0.05	U	0.06	J		0.5	U	1	U	0.51		
	Chrysene	mg/kg	0.027		0.0067	U	0.36			0.11		0.34		3.9		146.5
Semivolatile Organics	Dibenz(a,h)anthracene	mg/kg	0.0068	U	0.0067	U	0.042			0.067	U	0.13	U	0.38		
	Dibenzofuran	mg/kg	0.0052	J	0.05	U	0.08	J		0.5	U	1	U	0.61		
	Diethyl phthalate	mg/kg	0.016	J	0.018	J	0.065	U		0.5	U	1	U	0.064	U	
	Dimethyl phthalate	mg/kg	0.051	U	0.05	U	0.064	U		0.5	U	1	U	0.063	U	
	Di-n-butyl phthalate	mg/kg	0.023	J	0.015	J	0.08	J	90.1	0.5	U	1	U	0.13	J	
	Di-n-octyl phthalate	mg/kg	0.051	U	0.05	U	0.059	U		0.5	U	1	U	0.059	U	
	Fluoranthene	mg/kg	0.031	J-	0.0089	J-	1.1		164.1	0.2	J-	0.62	J-	0.00036	U	
	Fluorene	mg/kg	0.0068	U	0.0067	U	0.12			0.067	U	0.13	U	0.86		
	Hexachlorobenzene	mg/kg	0.0068	U	0.0067	U	0.028	U		0.067	U	0.13	U	0.028	U	
	Hexachlorobutadiene	mg/kg	0.051	U	0.05	U	0.062	U		0.5	U	1	U	0.062	U	
	Hexachlorocyclopentadiene	mg/kg	0.33	U	0.33	U	0.052	U		3.3	U	6.6	U	0.052	U	
	Hexachloroethane	mg/kg	0.051	U	0.05	U	0.033	U		0.5	U	1	U	0.033	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.018		0.0067	U	0.18			0.059	J	0.17		1.5		139.1
	Isophorone	mg/kg	0.051	U	0.05	U	0.12	J		0.5	U	1	U	0.12	J	
	Naphthalene	mg/kg	0.015		0.0074		0.051		95.2	0.067	U	0.13	U	0.22		
	Nitrobenzene	mg/kg	0.1	U	0.1	U	0.059	U		1	U	2	U	0.059	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.051	U	0.05	U	0.071	U		0.5	U	1	U	0.07	U	
	N-Nitrosodiphenylamine	mg/kg	0.051	U	0.05	U	0.05	U		0.5	U	1	U	0.05	U	
	Pentachlorophenol	mg/kg	0.081	U J	0.08	U J	0.24	U		0.81	U J	1.6	U J	0.24	U	
	Phenanthrene	mg/kg	0.021	J-	0.0095	J-	0.85		164.2	0.1	J-	0.25	J-	0.00045	U	
	Phenol	mg/kg	0.051	U	0.05	U	0.16	U		0.5	U	1	U	0.16	U	
	Pyrene	mg/kg	0.026		0.0068		0.75		162.4	0.15		0.45		0.00041	U	
							%RSD Average =		137.4					%RSD Average =		120.9

Table M-18. Results for SVOCs in Soil Samples from Debris Pile C (continued)

		Location	Debris Pile C											
		Sample ID	C78SB-021M-0002-SO		C78SB-022M-0002-SO		C78SB-023M-0002-SO		% RSD	C78SB-021M-0003-SO		C78SB-022M-0003-SO		C78SB-023M-0003-SO		% RSD
		Type Sample	Primary		QC		QA			Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Subsurface Vertical ISM							Subsurface Vertical ISM						
Parameter		Units	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.11	U J	0.51	U	0.024	U		0.051	U	0.051	U	0.024	U	
	1,2,4- Trichlorobenzene	mg/kg	0.11	U J	0.51	U	0.021	U		0.051	U	0.051	U	0.021	U	
	1,3-Dichlorobenzene	mg/kg	0.11	U J	0.51	U	0.02	U		0.051	U	0.051	U	0.02	U	
	1,4-Dichlorobenzene	mg/kg	0.11	U J	0.51	U	0.019	U		0.051	U	0.051	U	0.019	U	
	2,4- Dichlorophenol	mg/kg	0.11	U J	1.5	U	0.12	U		0.15	U	0.15	U	0.12	U	
	2,4- Dimethylphenol	mg/kg	0.32	U J	1.5	U	0.1	U		0.15	U	0.15	U	0.1	U	
	2,4- Dinitrophenol	mg/kg	0.32	U J	0.81	U J	0.27	U		0.082	U J	0.081	U J	0.27	U	
	2,4- Dinitrotoluene	mg/kg	0.11	U J	2	U	0.024	U		0.2	U	0.2	U	0.024	U	
	2,4,5-Trichlorophenol	mg/kg	0.11	U J	1.5	U	0.13	U		0.15	U	0.15	U	0.13	U	
	2,4,6- Trichlorophenol	mg/kg	0.32	U J	0.81	U J	0.13	U		0.082	U J	0.081	U J	0.13	U	
	2,6- Dinitrotoluene	mg/kg	0.11	U J	2	U	0.024	U		0.2	U	0.2	U	0.024	U	
	2-Chloronaphthalene	mg/kg	0.013	U J	0.51	U	0.023	U		0.051	U	0.051	U	0.023	U	
	2-Chlorophenol	mg/kg	0.11	U J	0.51	U	0.34	U		0.051	U	0.051	U	0.34	U	
	2-Methylnaphthalene	mg/kg	0.2	J-	0.34		0.94		79.7	0.01		0.0056	J	0.014		42.6
	2-Methylphenol	mg/kg	0.32	U J	0.81	U J	0.43	U		0.2	U	0.081	U J	0.42	U	
	2-Nitroaniline	mg/kg	0.11	U J	2	U	0.023	U		0.2	U	0.2	U	0.023	U	
	2-Nitrophenol	mg/kg	0.11	U J	0.51	U	0.28	U		0.051	U	0.051	U	0.28	U	
	3 & 4 Methylphenol	mg/kg	1.6	U	4.1	U	0.66	U		0.41	U	0.41	U	0.66	U	
	3,3'-Dichlorobenzidine	mg/kg	0.32	U J	0.81	U J	0.15	U		0.082	U J	0.081	U J	0.15	U	
	3-Nitroaniline	mg/kg	0.32	U J	2	U	0.022	U		0.2	U	0.2	U	0.022	U	
	4,6-Dinitro-2-methylphenol	mg/kg	0.32	U J	0.81	U J	0.27	U		0.082	U J	0.081	U J	0.27	U	
	4-Bromophenyl phenyl ether	mg/kg	0.11	U J	0.51	U	0.025	U		0.051	U	0.051	U	0.025	U	
Semivolatile Organics	4-Chloro-3-methylphenol	mg/kg	0.11	U J	1.5	U	0.38	U		0.15	U	0.15	U	0.38	U	
	4-Chloroaniline	mg/kg	0.11	U J	0.27	U J	0.039	U		0.028	U J	0.027	U J	0.039	U	
	4-Chlorophenyl phenyl ether	mg/kg	0.11	U J	0.51	U	0.026	U		0.051	U	0.051	U	0.026	U	
	4-Nitroaniline	mg/kg	0.11	U J	2	U	0.03	U		0.2	U	0.2	U	0.03	U	
	4-Nitrophenol	mg/kg	0.32	U J	0.81	U J	0.4	U		0.082	U J	0.081	U J	0.4	U	
	Acenaphthene	mg/kg	0.013	U J	0.068	U	0.1			0.0068	U	0.0068	U	0.0016	J	
	Acenaphthylene	mg/kg	0.013	U J	0.054	J	0.036			0.0039	J	0.0068	U	0.0031		
	Anthracene	mg/kg	0.27	J-	0.25		0.4		26.6	0.0058	J	0.0039	J	0.0061		22.7
	Benzo[a]anthracene	mg/kg	0.71	J-	1.3		1.1		28.9	0.037		0.012		0.033		49.1
	Benzo[a]pyrene	mg/kg	0.62	J-	1.3		0.84		37.7	0.032		0.01		0.023		51.0
	Benzo[b]fluoranthene	mg/kg	0.87	J-	2		1.7		38.4	0.05		0.015		0.04		51.5
	Benzo[g,h,i]perylene	mg/kg	0.42	J-	0.95		0.34		58.2	0.022		0.0087		0.013		46.6
	Benzo[k]fluoranthene	mg/kg	0.37	J-	0.82		0.52		40.2	0.023		0.0076		0.014		52.0
	Benzoic acid	mg/kg	1.3	U J	6.7	U	0.29	U		0.67	U	0.67	U	0.29	U	
	Benzyl alcohol	mg/kg	0.11	U J	3.3	U	0.084	U		0.34	U	0.33	U	0.084	U	
	bis (2-Chloroisopropyl) ether	mg/kg	0.4	U	1	U	0.03	U		0.1	U	0.1	U	0.03	U	
	Bis(2-chloroethoxy)methane	mg/kg	0.11	U J	1	U	0.023	U		0.1	U	0.1	U	0.023	U	
	Bis(2-chloroethyl)ether	mg/kg	0.4	U	1	U	0.025	U		0.1	U	0.1	U	0.025	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.2	U	0.51	U				0.051	U	0.022	J			
	Butyl benzyl phthalate	mg/kg	0.2	U	0.51	U	0.074	U		0.051	U	0.051	U	0.074	U	
	Carbazole	mg/kg	0.11	U J	0.51	U	0.28			0.051	U	0.051	U	0.028	U	
	Chrysene	mg/kg	0.72	J-	1.5		1.3		34.5	0.038		0.014		0.03		44.7
Semivolatile Organics	Dibenz(a,h)anthracene	mg/kg	0.013	U J	0.068	U	0.1			0.0068	U	0.0068	U	0.0042	B	
	Dibenzofuran	mg/kg	0.057	J	0.099	J	0.2		61.9	0.051	U	0.051	U	0.024	U	
	Diethyl phthalate	mg/kg	0.2	U	0.51	U	0.065	U		0.021	J	0.02	J	0.065	U	
	Dimethyl phthalate	mg/kg	0.2	U	0.51	U	0.064	U		0.051	U	0.051	U	0.064	U	
	Di-n-butyl phthalate	mg/kg	0.11	U J	0.51	U	0.13	J		0.051	U	0.015	J	0.12	J	
	Di-n-octyl phthalate	mg/kg	0.11	U J	0.51	U	0.06	U		0.051	U	0.051	U	0.059	U	
	Fluoranthene	mg/kg	1.6	J-	3.2	J-	3.4		36.1	0.064	J-	0.032	J-	0.066		35.3
	Fluorene	mg/kg	0.045	J-	0.069		0.11		44.0	0.0068	U	0.0056	J	0.0036		
	Hexachlorobenzene	mg/kg	0.013	U J	0.068	U	0.028	U		0.0068	U	0.0068	U	0.028	U	
	Hexachlorobutadiene	mg/kg	0.11	U J	0.51	U	0.063	U		0.051	U	0.051	U	0.063	U	
	Hexachlorocyclopentadiene	mg/kg	1.3	U	3.3	U	0.053	U		0.34	U	0.33	U	0.052	U	
	Hexachloroethane	mg/kg	0.11	U J	0.51	U	0.033	U		0.051	U	0.051	U	0.033	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.37	J-	0.85		0.45		46.2	0.02		0.0067	J	0.019		48.6
	Isophorone	mg/kg	0.11	U J	0.51	U	0.051	U		0.051	U	0.051	U	0.05	U	
	Naphthalene	mg/kg	0.13	J-	0.24		0.61		77.0	0.0081		0.0063	J	0.011		28.0
	Nitrobenzene	mg/kg	0.013	U J	1	U	0.06	U		0.1	U	0.1	U	0.059	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.11	U J	0.51	U	0.071	U		0.051	U	0.051	U	0.071	U	
	N-Nitrosodiphenylamine	mg/kg	0.11	U J	0.51	U	0.051	U		0.051	U	0.051	U	0.05	U	
	Pentachlorophenol	mg/kg	0.32	U J	0.81	U J	0.24	U		0.082	U J	0.081	U J	0.24	U	
	Phenanthrene	mg/kg	0.71	J-	1.1	J-	1.6		39.2	0.027	J-	0.028	J-	0.043		27.4
	Phenol	mg/kg	0.11	U J	0.51	U	0.16	U		0.051	U	0.051	U	0.16	U	
	Pyrene	mg/kg	1.2	J-	2.4		2.5		35.6	0.048		0.022		0.051		39.5
					%RSD Average =				45.6			%RSD Average =				41.5

Table M-18. Results for SVOCs in Soil Samples from Debris Pile C (continued)

		Location	Debris Pile C										
		Sample ID	C78SB-021M-0004-SO		C78SB-022M-0004-SO		C78SB-023M-0004-SO		% RSD	C78SB-021M-0005-SO		C78SB-022M-0005-SO		C78SB-023M-0005-SO		% RSD
		Type Sample	Primary		QC		QA			Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Subsurface Vertical ISM							Subsurface Vertical ISM						
Parameter		Units	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.051	U	0.051	U	0.024	U		0.51	U	0.5	U	0.024	U	
	1,2,4- Trichlorobenzene	mg/kg	0.051	U	0.051	U	0.021	U		0.51	U	0.5	U	0.021	U	
	1,3-Dichlorobenzene	mg/kg	0.051	U	0.051	U	0.02	U		0.51	U	0.5	U	0.02	U	
	1,4-Dichlorobenzene	mg/kg	0.051	U	0.051	U	0.019	U		0.51	U	0.5	U	0.019	U	
	2,4- Dichlorophenol	mg/kg	0.15	U	0.15	U	0.12	U		1.5	U	1.5	U	0.12	U	
	2,4- Dimethylphenol	mg/kg	0.15	U	0.15	U	0.099	U		1.5	U	1.5	U	0.099	U	
	2,4- Dinitrophenol	mg/kg	0.081	U J	0.081	U J	0.27	U		0.81	U J	0.81	U J	0.27	U	
	2,4- Dinitrotoluene	mg/kg	0.2	U	0.2	U	0.024	U		2	U	2	U	0.024	U	
	2,4,5-Trichlorophenol	mg/kg	0.15	U	0.15	U	0.13	U		1.5	U	1.5	U	0.13	U	
	2,4,6- Trichlorophenol	mg/kg	0.081	U J	0.081	U J	0.13	U		0.81	U J	0.81	U J	0.13	U	
	2,6- Dinitrotoluene	mg/kg	0.2	U	0.2	U	0.024	U		2	U	2	U	0.024	U	
	2-Chloronaphthalene	mg/kg	0.051	U	0.051	U	0.023	U		0.51	U	0.5	U	0.023	U	
	2-Chlorophenol	mg/kg	0.051	U	0.051	U	0.34	U		0.51	U	0.5	U	0.34	U	
	2-Methylnaphthalene	mg/kg	0.037		0.0075		0.01		90.0	0.068	U	0.067	U	0.021		
	2-Methylphenol	mg/kg	0.081	U J	0.081	U J	0.42	U		0.81	U J	0.81	U J	0.42	U	
	2-Nitroaniline	mg/kg	0.2	U	0.2	U	0.023	U		2	U	2	U	0.023	U	
	2-Nitrophenol	mg/kg	0.051	U	0.051	U	0.28	U		0.51	U	0.5	U	0.28	U	
	3 & 4 Methylphenol	mg/kg	0.41	U	0.41	U	0.65	U		4.1	U	4	U	0.65	U	
	3,3'-Dichlorobenzidine	mg/kg	0.081	U J	0.081	U J	0.15	U		0.81	U J	0.81	U J	0.15	U	
	3-Nitroaniline	mg/kg	0.2	U	0.2	U	0.022	U		2	U	2	U	0.022	U	
	4,6-Dinitro-2-methylphenol	mg/kg	0.081	U J	0.081	U J	0.27	U		0.81	U J	0.81	U J	0.27	U	
	4-Bromophenyl phenyl ether	mg/kg	0.051	U	0.051	U	0.025	U		0.51	U	0.5	U	0.025	U	
Semivolatile Organics	4-Chloro-3-methylphenol	mg/kg	0.15	U	0.15	U	0.38	U		1.5	U	1.5	U	0.38	U	
	4-Chloroaniline	mg/kg	0.027	U J	0.027	U J	0.039	U		0.27	U J	0.27	U J	0.039	U	
	4-Chlorophenyl phenyl ether	mg/kg	0.051	U	0.051	U	0.026	U		0.51	U	0.5	U	0.026	U	
	4-Nitroaniline	mg/kg	0.2	U	0.2	U	0.03	U		2	U	2	U	0.03	U	
	4-Nitrophenol	mg/kg	0.081	U J	0.081	U J	0.4	U		0.81	U J	0.81	U J	0.4	U	
	Acenaphthene	mg/kg	0.0098		0.0068	U	0.00033	U		0.068	U	0.067	U	0.051		
	Acenaphthylene	mg/kg	0.0051	J	0.029		0.0059		101.8	0.068	U	0.084		0.011		
	Anthracene	mg/kg	0.026		0.042		0.0021	J	85.9	0.05	J	0.11		0.22		68.1
	Benzo[a]anthracene	mg/kg	0.055		0.16		0.043		74.8	0.18		0.45		0.78		63.9
	Benzo[a]pyrene	mg/kg	0.045		0.12		0.034		70.6	0.15		0.43		0.56		55.1
	Benzo[b]fluoranthene	mg/kg	0.063		0.19		0.059		71.6	0.2		0.64		0.96		63.6
	Benzo[g,h,i]perylene	mg/kg	0.031		0.074		0.024		63.0	0.12		0.27		0.24		37.8
	Benzo[k]fluoranthene	mg/kg	0.027		0.081		0.018		81.1	0.11		0.34		0.31		49.4
	Benzoic acid	mg/kg	0.67	U	0.67	U	0.29	U		6.7	U	6.7	U	0.29	U	
	Benzyl alcohol	mg/kg	0.34	U	0.34	U	0.083	U		3.4	U	3.3	U	0.083	U	
	bis (2-Chloroisopropyl) ether	mg/kg	0.1	U	0.1	U	0.03	U		1	U	1	U	0.03	U	
	Bis(2-chloroethoxy)methane	mg/kg	0.1	U	0.1	U	0.023	U		1	U	1	U	0.023	U	
	Bis(2-chloroethyl)ether	mg/kg	0.1	U	0.1	U	0.025	U		1	U	1	U	0.025	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.051	U	0.051	U				0.51	U	0.5	U			
	Butyl benzyl phthalate	mg/kg	0.051	U	0.051	U	0.073	U		0.51	U	0.5	U	0.073	U	
	Carbazole	mg/kg	0.051	U	0.051	U	0.028	U		0.51	U	0.5	U	0.22		
	Chrysene	mg/kg	0.051		0.17		0.037		85.0	0.16		0.44		0.74		64.9
Semivolatile Organics	Dibenz(a,h)anthracene	mg/kg	0.0068	U	0.0068	U	0.0063			0.068	U	0.067	U	0.089		
	Dibenzofuran	mg/kg	0.02	J	0.0058	J	0.024	U		0.51	U	0.5	U	0.057	J	
	Diethyl phthalate	mg/kg	0.022	J	0.03	J	0.064	U		0.51	U	0.5	U	0.064	U	
	Dimethyl phthalate	mg/kg	0.051	U	0.051	U	0.063	U		0.51	U	0.5	U	0.063	U	
	Di-n-butyl phthalate	mg/kg	0.051	U	0.02	J	0.091	J		0.51	U	0.5	U	0.079	U	
	Di-n-octyl phthalate	mg/kg	0.051	U	0.051	U	0.059	U		0.51	U	0.5	U	0.059	U	
	Fluoranthene	mg/kg	0.12	J-	0.39	J-	0.059		92.9	0.31	J-	0.69	J-	1.8		83.0
	Fluorene	mg/kg	0.016		0.013		0.0007	J	81.9	0.068	U	0.067	U	0.088		
	Hexachlorobenzene	mg/kg	0.0068	U	0.0068	U	0.028	U		0.068	U	0.067	U	0.028	U	
	Hexachlorobutadiene	mg/kg	0.051	U	0.051	U	0.062	U		0.51	U	0.5	U	0.062	U	
	Hexachlorocyclopentadiene	mg/kg	0.34	U	0.34	U	0.052	U		3.4	U	3.3	U	0.052	U	
	Hexachloroethane	mg/kg	0.051	U	0.051	U	0.033	U		0.51	U	0.5	U	0.033	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.028		0.072		0.027		60.7	0.11		0.25		0.39		56.0
	Isophorone	mg/kg	0.051	U	0.051	U	0.05	U		0.51	U	0.5	U	0.05	U	
	Naphthalene	mg/kg	0.032		0.0063	J	0.011		83.3	0.068	U	0.067	U	0.022		
	Nitrobenzene	mg/kg	0.1	U	0.1	U	0.059	U		1	U	1	U	0.059	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.051	U	0.051	U	0.07	U		0.51	U	0.5	U	0.07	U	
	N-Nitrosodiphenylamine	mg/kg	0.051	U	0.051	U	0.05	U		0.51	U	0.5	U	0.05	U	
	Pentachlorophenol	mg/kg	0.081	U J	0.081	U J	0.24	U		0.81	U J	0.81	U J	0.24	U	
	Phenanthrene	mg/kg	0.12	J-	0.19	J-	0.021		77.0	0.16	J-	0.29	J-	1.1		98.6
	Phenol	mg/kg	0.051	U	0.051	U	0.16	U		0.51	U	0.5	U	0.16	U	
	Pyrene	mg/kg	0.086		0.26		0.047		86.6	0.23		0.54		1.3		79.8
							%RSD Average =		80.4					%RSD Average =		65.5

Table M-18. Results for SVOCs in Soil Samples from Debris Pile C (continued)

		Location	Debris Pile C						
		Sample ID	C78SB-021M-0006-SO		C78SB-022M-0006-SO		C78SB-023M-0006-SO		% RSD
		Type Sample	Primary		QC		QA		
		Sample Date	11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	1 - 5		1 - 5		1 - 5		
			Subsurface Vertical ISM						
Parameter		Units	Value	Q	Value	Q	Value	Q	
Semivolatile Organics	1,2- Dichlorobenzene	mg/kg	0.051	U	1	U	0.024	U	
	1,2,4- Trichlorobenzene	mg/kg	0.051	U	1	U	0.021	U	
	1,3-Dichlorobenzene	mg/kg	0.051	U	1	U	0.02	U	
	1,4-Dichlorobenzene	mg/kg	0.051	U	1	U	0.019	U	
	2,4- Dichlorophenol	mg/kg	0.15	U	3	U	0.12	U	
	2,4- Dimethylphenol	mg/kg	0.15	U	3	U	0.099	U	
	2,4- Dinitrophenol	mg/kg	0.081	U J	1.6	U J	0.27	U	
	2,4- Dinitrotoluene	mg/kg	0.2	U	4	U	0.024	U	
	2,4,5-Trichlorophenol	mg/kg	0.15	U	3	U	0.13	U	
	2,4,6- Trichlorophenol	mg/kg	0.081	U J	1.6	U J	0.13	U	
	2,6- Dinitrotoluene	mg/kg	0.2		4	U	0.024	U	
	2-Chloronaphthalene	mg/kg	0.051	U	1	U	0.023	U	
	2-Chlorophenol	mg/kg	0.051	U	1	U	0.34	U	
	2-Methylnaphthalene	mg/kg	0.03		0.13	U	0.081		
	2-Methylphenol	mg/kg	0.081	U J	1.6	U J	0.42	U	
	2-Nitroaniline	mg/kg	0.2	U	4	U	0.023	U	
	2-Nitrophenol	mg/kg	0.051	U	1	U	0.28	U	
	3 & 4 Methylphenol	mg/kg	0.4	U	8.1	U	0.65	U	
	3,3'-Dichlorobenzidine	mg/kg	0.081	U J	1.6	U J	0.15	U	
	3-Nitroaniline	mg/kg	0.3	U	4	U	0.022	U	
	4,6-Dinitro-2-methylphenol	mg/kg	0.081	U J	1.6	U J	0.27	U	
	4-Bromophenyl phenyl ether	mg/kg	0.051	U	1	U	0.025	U	
Semivolatile Organics	4-Chloro-3-methylphenol	mg/kg	0.15	U	3	U	0.38	U	
	4-Chloroaniline	mg/kg	0.027	U J	0.55	U J	0.039	U	
	4-Chlorophenyl phenyl ether	mg/kg	0.051	U	1	U	0.026	U	
	4-Nitroaniline	mg/kg	0.2	U	4	U	0.03	U	
	4-Nitrophenol	mg/kg	0.081	U J	1.6	U J	0.4	U	
	Acenaphthene	mg/kg	0.0067	U	0.13	U	0.0071		
	Acenaphthylene	mg/kg	0.012		0.13	U	0.024		
	Anthracene	mg/kg	0.0084		0.13	U	0.016		
	Benzo[a]anthracene	mg/kg	0.052		0.13	U	0.11		
	Benzo[a]pyrene	mg/kg	0.048		0.13	U	0.08		
	Benzo[b]fluoranthene	mg/kg	0.075		0.13	U	0.15		
	Benzo[g,h,i]perylene	mg/kg	0.033		0.13	U	0.044		
	Benzo[k]fluoranthene	mg/kg	0.033		0.13	U	0.046		
	Benzoic acid	mg/kg	0.67	U	13	U	0.29	U	
	Benzyl alcohol	mg/kg	0.33	U	6.7	U	0.083	U	
	bis (2-Chloroisopropyl) ether	mg/kg	0.1	U	2	U	0.03	U	
	Bis(2-chloroethoxy)methane	mg/kg	0.1	U	2	U	0.023	U	
	Bis(2-chloroethyl)ether	mg/kg	0.1	U	2	U	0.025	U	
	Bis(2-ethylhexyl) phthalate	mg/kg	0.051	U	1	U			
	Butyl benzyl phthalate	mg/kg	0.051	U	1	U	0.073	U	
	Carbazole	mg/kg	0.051	U	1	U	0.028	U	
	Chrysene	mg/kg	0.056		0.13	U	0.1		
Semivolatile Organics	Dibenz(a,h)anthracene	mg/kg	0.0067	U	0.13	U	0.013		
	Dibenzofuran	mg/kg	0.0088	J	1	U	0.026	J	
	Diethyl phthalate	mg/kg	0.027	J	1	U	0.064	U	
	Dimethyl phthalate	mg/kg	0.051	U	1	U	0.063	U	
	Di-n-butyl phthalate	mg/kg	0.017	J	1	U	0.079	U	
	Di-n-octyl phthalate	mg/kg	0.051	U	1	U	0.059	U	
	Fluoranthene	mg/kg	0.076	J-	0.088	J	0.18		49.6
	Fluorene	mg/kg	0.0052	J	0.13	U	0.0071		
	Hexachlorobenzene	mg/kg	0.0067	U	0.13	U	0.028	U	
	Hexachlorobutadiene	mg/kg	0.051	U	1	U	0.062	U	
	Hexachlorocyclopentadiene	mg/kg	0.33	U	6.7	U	0.052	U	
	Hexachloroethane	mg/kg	0.051	U	1	U	0.033	U	
	Indeno[1,2,3-cd]pyrene	mg/kg	0.031		0.13	U	0.056		
	Isophorone	mg/kg	0.051	U	1	U	0.05	U	
	Naphthalene	mg/kg	0.022		0.13	U	0.055		
	Nitrobenzene	mg/kg	0.1	U	2	U	0.059	U	
	N-Nitrosodi-n-propylamine	mg/kg	0.051	U	1	U	0.07	U	
	N-Nitrosodiphenylamine	mg/kg	0.051	U	1	U	0.05	U	
	Pentachlorophenol	mg/kg	0.081	U J	1.6	U J	0.24	U	
	Phenanthrene	mg/kg	0.038	J-	0.067	U J	0.11		
	Phenol	mg/kg	0.051	U	1	U	0.16	U	
	Pyrene	mg/kg	0.058		0.13	U	0.15		
							%RSD Average =		49.6

Table M-19. Results for SVOCs in Soil Samples from Debris Pile C

			Location		Debris Pile		Debris Pile C												
			Sample ID		C78SS-014-0001-SO		C78SB-021V-0101-SO		C78SB-022V-0101-SO		C78SB-023V-0101-SO		% RSD	C78SB-021V-0102-SO		C78SB-022V-0102-SO		C78SB-023V-0102-SO		% RSD
			Type Sample		Primary		Primary		QC		QA			Primary		QC		QA		
			Sample Date		11/9/2011		11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
			Sample Depth (Ft)		0.5		1 - 3		1 - 3		1 - 3			3 - 5		3 - 5		3 - 5		
			Min REC or RSL		Surface ISM		Subsurface Horizontal ISM							Subsurface Horizontal ISM						
Analyte		Units	Value	REC or RSL	Value	Q	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.02	U J	0.024	U J	0.022	U J	0.011	U		0.021	U J	0.021	U J	0.0097	U	
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.024	U J	0.029	U J	0.026	U J	0.0064	U		0.025	U J	0.025	U J	0.0058	U	
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.024	U J	0.029	U J	0.026	U J	0.0085	U		0.025	U J	0.025	U J	0.0078	U	
	1,1-Dichloroethane	mg/kg	33	RSL	0.024	U J	0.029	U J	0.026	U J	0.012	U		0.025	U J	0.025	U J	0.011	U	
	1,1-Dichloroethene	mg/kg	120	R9	0.024	U J	0.029	U J	0.026	U J	0.017	U		0.025	U J	0.025	U J	0.016	U	
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.024	U J	0.029	U J	0.026	U J	0.011	U		0.025	U J	0.025	U J	0.0097	U	
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.024	U J	0.029	U J	0.026	U J	0.013	U		0.025	U J	0.025	U J	0.012	U	
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.49	U	0.57	U	0.51	U				0.49	U	0.5	U			
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.0097	U J	0.011	U J	0.01	U J	0.0075	U		0.0099	U J	0.01	U J	0.0068	U	
	2-Butanone	mg/kg	22,000	R9	0.097	U J	0.11	U J	0.1	U J	0.11	U		0.99	U	1	U	0.097	U	
	2-Hexanone	mg/kg	210	RSL	0.049	U J	0.057	U J	0.051	U J	0.072	U		0.99	U	1	U	0.066	U	
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.097	U J	0.11	U J	0.1	U J	0.087	U		0.099	U J	0.1	U J	0.08	U	
	Acetone	mg/kg	61,000	RSL	0.19	U J	0.23	U J	0.21	U J	0.14	J B		0.99	U	1	U	0.12	J B	
	Benzene	mg/kg	11	RSL	0.024	U J	0.029	U J	0.026	U J	0.0053	U		0.025	U J	0.025	U J	0.0049	U	
	Bromochloromethane	mg/kg	8.2	R9	0.024	U J	0.029	U J	0.026	U J	0.0085	U		0.025	U J	0.025	U J	0.0078	U	
	Bromodichloromethane	mg/kg	2.7	RSL	0.024	U J	0.029	U J	0.026	U J	0.0096	U		0.025	U J	0.025	U J	0.0088	U	
	Bromoform	mg/kg	610	RSL	0.024	U J	0.029	U J	0.026	U J	0.0064	U		0.025	U J	0.025	U J	0.0058	U	
	Bromomethane	mg/kg	7.3	RSL	0.049	U J	0.057	U J	0.051	U J	0.032	U		0.049	U J	0.05	U J	0.029	U	
Volatile Organics	Carbon disulfide	mg/kg	820	RSL	0.024	U J	0.029	U J	0.026	U J	0.016	U		0.025	U J	0.025	U J	0.015	U	
	Carbon tetrachloride	mg/kg	6.1	RSL	0.0097	U J	0.011	U J	0.01	U J	0.012	U		0.0099	U J	0.01	U J	0.011	U	
	Chlorobenzene	mg/kg	290	RSL	0.0097	U J	0.011	U J	0.01	U J	0.0085	U		0.0099	U J	0.01	U J	0.0078	U	
	Chloroethane	mg/kg	30	R9	0.097	U J	0.11	U J	0.1	U J	0.02	U		0.099	U J	0.1	U J	0.019	U	
	Chloroform	mg/kg	2.9	RSL	0.024	U J	0.029	U J	0.026	U J	0.0096	U		0.025	U J	0.025	U J	0.0088	U	
	Chloromethane	mg/kg	120	RSL	0.024	U J	0.029	U J	0.026	U J	0.027	U		0.025	U J	0.025	U J	0.024	U	
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.0097	U J	0.011	U J	0.01	U J	0.011	U		0.0099	U J	0.01	U J	0.0097	U	
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.0097	U J	0.011	U J	0.01	U J	0.011	U		0.0099	U J	0.01	U J	0.0097	U	
	Dibromochloromethane	mg/kg	6.8	RSL	0.024	U J	0.029	U J	0.026	U J	0.0085	U		0.025	U J	0.025	U J	0.0078	U	
	Ethylbenzene	mg/kg	54	RSL	0.24	U	0.014	J	0.015	J	0.014	J	4.0	0.25	U	0.25	U	0.0078	U	
	Methylene chloride	mg/kg	110	RSL	0.14	U J	0.093	U J	0.083	U J	0.043	U		0.099	U J	0.094	U J	0.039	U	
	Styrene	mg/kg	6,300	RSL	0.0097	U J	0.011	U J	0.01	U J	0.0064	U		0.0099	U J	0.01	U J	0.0058	U	
	Tetrachloroethene	mg/kg	4.8	R9	0.024	U J	0.029	U J	0.026	U J	0.0085	U		0.025	U J	0.025	U J	0.0078	U	
	Toluene	mg/kg	5,000	RSL	0.024	U J	0.043	J	0.038	J	0.032	J	14.6	0.025	U J	0.025	U J	0.0068	U	
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.024	U J	0.029	U J	0.026	U J	0.012	U		0.025	U J	0.025	U J	0.011	U	
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.024	U J	0.029	U J	0.026	U J	0.0075	U		0.025	U J	0.025	U J	0.0068	U	
	Trichloroethene	mg/kg	0.53	R9	0.024	U J	0.029	U J	0.026	U J	0.011	U		0.025	U J	0.025	U J	0.0097	U	
	Vinyl chloride	mg/kg	0.6	RSL	0.024	U J	0.029	U J	0.026	U J	0.015	U		0.025	U J	0.025	U J	0.014	U	
	Xylene (Total)	mg/kg	630	RSL	0.49	U	0.059	J	0.061	J	0.036	J	26.7	0.49	U	0.5	U	0.018	U	
									%RSD Average =				15.1			%RSD Average =				N/A

Table M-19. Results for SVOCs in Soil Samples from Debris Pile C (continued)

			Location		Debris Pile C											
			Sample ID		C78SB-021V-0001-SO		C78SB-022V-0001-SO		C78SB-023V-0001-SO		% RSD	C78SB-021V-0002-SO		C78SB-022V-0002-SO		C78SB-023V-0002-SO		% RSD
			Type Sample		Primary		QC		QA			Primary		QC		QA		
			Sample Date		11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
			Sample Depth (Ft)		1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Min REC or RSL		Subsurface Vertical ISM							Subsurface Vertical ISM						
Analyte		Units	Value	REC or RSL	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.025	U J	0.021	U J	0.011	U		0.027	U J	0.027	U J	0.014	U	
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.029	U J	0.025	U J	0.0069	U		0.032	U J	0.032	U J	0.0081	U	
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.029	U J	0.025	U J	0.0092	U		0.032	U J	0.032	U J	0.011	U	
	1,1-Dichloroethane	mg/kg	33	RSL	0.029	U J	0.025	U J	0.013	U		0.032	U J	0.032	U J	0.015	U	
	1,1-Dichloroethene	mg/kg	120	R9	0.029	U J	0.025	U J	0.018	U		0.032	U J	0.032	U J	0.022	U	
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.029	U J	0.025	U J	0.011	U		0.032	U J	0.032	U J	0.014	U	
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.029	U J	0.025	U J	0.014	U		0.032	U J	0.032	U J	0.016	U	
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.59	U	0.5	U				0.65	U	0.65	U			
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.012	U J	0.01	U J	0.008	U		0.032	U J	0.013	U J	0.0095	U	
	2-Butanone	mg/kg	22,000	R9	1.2	U	1	U	0.11	U		1.3	U	1.3	U	0.14	U	
	2-Hexanone	mg/kg	210	RSL	1.2	U	1	U	0.078	U		1.3	U	1.3	U	0.092	U	
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.12	U J	0.1	U J	0.094	U		0.13	U J	0.13	U J	0.11	U	
	Acetone	mg/kg	61,000	RSL	0.24	U J	0.2	U J	0.16	J B		0.26	U J	0.26	U J	0.19	J B	
	Benzene	mg/kg	11	RSL	0.029	U J	0.025	U J	0.0057	U		0.032	U J	0.032	U J	0.035	J	
	Bromochloromethane	mg/kg	8.2	R9	0.029	U J	0.025	U J	0.0092	U		0.032	U J	0.032	U J	0.011	U	
	Bromodichloromethane	mg/kg	2.7	RSL	0.029	U J	0.025	U J	0.01	U		0.032	U J	0.032	U J	0.012	U	
	Bromoform	mg/kg	610	RSL	0.029	U J	0.025	U J	0.0069	U		0.032	U J	0.032	U J	0.0081	U	
	Bromomethane	mg/kg	7.3	RSL	0.059	U J	0.05	U J	0.034	U		0.032	U J	0.065	U J	0.041	U	
Volatile Organics	Carbon disulfide	mg/kg	820	RSL	0.029	U J	0.025	U J	0.017	U		0.057	J	0.032	U J	0.02	U	
	Carbon tetrachloride	mg/kg	6.1	RSL	0.012	U J	0.01	U J	0.013	U		0.013	U J	0.013	U J	0.015	U	
	Chlorobenzene	mg/kg	290	RSL	0.012	U J	0.01	U J	0.0092	U		0.013	U J	0.013	U J	0.011	U	
	Chloroethane	mg/kg	30	R9	0.12	U J	0.1	U J	0.022	U		0.13	U J	0.13	U J	0.026	U	
	Chloroform	mg/kg	2.9	RSL	0.029	U J	0.025	U J	0.01	U		0.032	U J	0.032	U J	0.012	U	
	Chloromethane	mg/kg	120	RSL	0.029	U J	0.025	U J	0.029	U		0.032	U J	0.032	U J	0.034	U	
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.012	U J	0.01	U J	0.011	U		0.013	U J	0.013	U J	0.014	U	
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.012	U J	0.01	U J	0.011	U		0.013	U J	0.013	U J	0.014	U	
	Dibromochloromethane	mg/kg	6.8	RSL	0.029	U J	0.025	U J	0.0092	U		0.032	U J	0.032	U J	0.011	U	
	Ethylbenzene	mg/kg	54	RSL	0.29	U	0.25	U	0.0092	U		0.042	J	0.05	J	0.061	J	18.7
	Methylene chloride	mg/kg	110	RSL	0.24	U J	0.22	U J	0.046	U		0.27	U J	0.25	U J	0.054	U	
	Styrene	mg/kg	6,300	RSL	0.012	U J	0.01	U J	0.0069	U		0.013	U J	0.013	U J	0.0081	U	
	Tetrachloroethene	mg/kg	4.8	R9	0.029	U J	0.025	U J	0.0092	U		0.032	U J	0.032	U J	0.011	U	
	Toluene	mg/kg	5,000	RSL	0.029	U J	0.025	U J	0.008	U		0.096	J	0.13	J	0.15		21.8
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.029	U J	0.025	U J	0.013	U		0.032	U J	0.032	U J	0.015	U	
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.029	U J	0.025	U J	0.008	U		0.032	U J	0.032	U J	0.0095	U	
	Trichloroethene	mg/kg	0.53	R9	0.029	U J	0.025	U J	0.011	U		0.032	U J	0.032	U J	0.014	U	
	Vinyl chloride	mg/kg	0.6	RSL	0.029	U J	0.025	U J	0.016	U		0.032	U J	0.032	U J	0.019	U	
	Xylene (Total)	mg/kg	630	RSL	0.01	J	0.5	U	0.021	U		0.24	J	0.27	J	0.17		22.6
								%RSD Average =			N/A				%RSD Average =			21.0

Table M-19. Results for SVOCs in Soil Samples from Debris Pile C (continued)

			Location		Debris Pile C												
			Sample ID		C78SB-021V-0003-SO		C78SB-022V-0003-SO		C78SB-023V-0003-SO		% RSD	C78SB-021V-0004-SO		C78SB-022V-0004-SO		C78SB-023V-0004-SO		% RSD
			Type Sample		Primary		QC		QA			Primary		QC		QA		
			Sample Date		11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
			Sample Depth (Ft)		1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Min REC or RSL		Subsurface Vertical ISM							Subsurface Vertical ISM						
Analyte		Units	Value	REC or RSL	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.29	U	0.029	U J	0.011	U		0.026	U J	0.024	U J	0.0098	U	
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.29	U	0.034	U J	0.0065	U		0.031	U J	0.028	U J	0.0059	U	
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.29	U	0.034	U J	0.0087	U		0.031	U J	0.028	U J	0.0079	U	
	1,1-Dichloroethane	mg/kg	33	RSL	0.29	U	0.034	U J	0.012	U		0.031	U J	0.028	U J	0.011	U	
	1,1-Dichloroethene	mg/kg	120	R9	0.29	U	0.034	U J	0.017	U		0.031	U J	0.028	U J	0.016	U	
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.29	U	0.034	U J	0.011	U		0.031	U J	0.028	U J	0.0098	U	
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.29	U	0.034	U J	0.013	U		0.031	U J	0.028	U J	0.012	U	
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.59	U	0.69	U				0.61	U	0.57	U			
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.29	U	0.014	U J	0.0076	U		0.012	U J	0.011	U J	0.0069	U	
	2-Butanone	mg/kg	22,000	R9	1.2	U	1.4	U	0.11	U		1.2	U	1.1	U	0.098	U	
	2-Hexanone	mg/kg	210	RSL	1.2	U	1.4	U	0.074	U		1.2	U	1.1	U	0.067	U	
	4-Methyl-2-pentanone	mg/kg	5,300	R9	1.2	U	0.14	U J	0.089	U		0.12	U J	0.11	U J	0.081	U	
	Acetone	mg/kg	61,000	RSL	1.2	U	0.27	U J	0.16	J B		0.25	U J	0.23	U J	0.1	J B	
	Benzene	mg/kg	11	RSL	0.29	U	0.034	U J	0.0054	U		0.031	U J	0.028	U J	0.0049	U	
	Bromochloromethane	mg/kg	8.2	R9	0.29	U	0.034	U J	0.0087	U		0.031	U J	0.028	U J	0.0079	U	
	Bromodichloromethane	mg/kg	2.7	RSL	0.29	U	0.034	U J	0.0098	U		0.031	U J	0.028	U J	0.0088	U	
	Bromoform	mg/kg	610	RSL	0.029	U J	0.034	U J	0.0065	U		0.031	U J	0.028	U J	0.0059	U	
	Bromomethane	mg/kg	7.3	RSL	0.29	U	0.069	U J	0.033	U		0.061	U J	0.057	U J	0.029	U	
Volatile Organics	Carbon disulfide	mg/kg	820	RSL	0.29	U	0.034	U J	0.016	U		0.031	U J	0.028	U J	0.015	U	
	Carbon tetrachloride	mg/kg	6.1	RSL	0.29	U	0.014	U J	0.012	U		0.012	U J	0.011	U J	0.011	U	
	Chlorobenzene	mg/kg	290	RSL	0.29	U	0.014	U J	0.0087	U		0.012	U J	0.011	U J	0.0079	U	
	Chloroethane	mg/kg	30	R9	0.29	U	0.14	U J	0.021	U		0.12	U J	0.11	U J	0.019	U	
	Chloroform	mg/kg	2.9	RSL	0.29	U	0.034	U J	0.0098	U		0.031	U J	0.028	U J	0.0088	U	
	Chloromethane	mg/kg	120	RSL	0.29	U	0.034	U J	0.027	U		0.031	U J	0.028	U J	0.025	U	
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.29	U	0.014	U J	0.011	U		0.012	U J	0.011	U J	0.0098	U	
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.012	U J	0.014	U J	0.011	U		0.012	U J	0.011	U J	0.0098	U	
	Dibromochloromethane	mg/kg	6.8	RSL	0.029	U J	0.034	U J	0.0087	U		0.031	U J	0.028	U J	0.0079	U	
	Ethylbenzene	mg/kg	54	RSL	0.29	U	0.34	U	0.0087	U		0.31	U	0.28	U	0.0079	U	
	Methylene chloride	mg/kg	110	RSL	0.2	U	0.33	U J	0.043	U		0.24	U J	0.26	U J	0.039	U	
	Styrene	mg/kg	6,300	RSL	0.29	U	0.014	U J	0.0065	U		0.012	U J	0.011	U J	0.0059	U	
	Tetrachloroethene	mg/kg	4.8	R9	0.29	U	0.034	U J	0.0087	U		0.031	U J	0.028	U J	0.0079	U	
	Toluene	mg/kg	5,000	RSL	0.29	U	0.034	U J	0.0076	U		0.031	U J	0.028	U J	0.0069	U	
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.29	U	0.034	U J	0.012	U		0.031	U J	0.028	U J	0.011	U	
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.029	U J	0.034	U J	0.0076	U		0.031	U J	0.028	U J	0.0069	U	
	Trichloroethene	mg/kg	0.53	R9	0.29	U	0.034	U J	0.011	U		0.031	U J	0.028	U J	0.0098	U	
	Vinyl chloride	mg/kg	0.6	RSL	0.29	U	0.034	U J	0.015	U		0.031	U J	0.028	U J	0.014	U	
	Xylene (Total)	mg/kg	630	RSL	0.59	U	0.69	U	0.02	U		0.61	U	0.57	U	0.018	U	
							%RSD Average =				N/A			%RSD Average =				N/A

Table M-19. Results for SVOCs in Soil Samples from Debris Pile C (continued)

			Location		Debris Pile C												
			Sample ID		C78SB-021V-0005-SO		C78SB-022V-0005-SO		C78SB-023V-0005-SO		% RSD	C78SB-021V-0006-SO		C78SB-022V-0006-SO		C78SB-023V-0006-SO		% RSD
			Type Sample		Primary		QC		QA			Primary		QC		QA		
			Sample Date		11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
			Sample Depth (Ft)		1 - 5		1 - 5		1 - 5			1 - 5		1 - 5		1 - 5		
			Min REC or RSL		Subsurface Vertical ISM							Subsurface Vertical ISM						
Analyte		Units	Value	REC or RSL	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Volatile Organics	1,1,1-Trichloroethane	mg/kg	8,700	RSL	0.025	U J	0.028	U J	0.011	U		0.24	U	0.026	U J	0.011	U	
	1,1,2,2-Tetrachloroethane	mg/kg	5.6	RSL	0.03	U J	0.033	U J	0.0068	U		0.024	U J	0.031	U J	0.0068	U	
	1,1,2-Trichloroethane	mg/kg	11	RSL	0.03	U J	0.033	U J	0.0091	U		0.024	U J	0.031	U J	0.009	U	
	1,1-Dichloroethane	mg/kg	33	RSL	0.03	U J	0.033	U J	0.013	U		0.024	U J	0.031	U J	0.012	U	
	1,1-Dichloroethene	mg/kg	120	R9	0.03	U J	0.033	U J	0.018	U		0.024	U J	0.031	U J	0.018	U	
	1,2-Dibromoethane	mg/kg	0.34	RSL	0.03	U J	0.033	U J	0.011	U		0.024	U J	0.031	U J	0.011	U	
	1,2-Dichloroethane	mg/kg	4.3	RSL	0.03	U J	0.033	U J	0.014	U		0.024	U J	0.031	U J	0.014	U	
	1,2-Dichloroethene (total)	mg/kg	NA	NA	0.6	U	0.67	U				0.47	U	0.62	U			
	1,2-Dichloropropane	mg/kg	8.8	RSL	0.012	U J	0.013	U J	0.008	U		0.0094	U J	0.012	U J	0.0079	U	
	2-Butanone	mg/kg	22,000	R9	1.2	U	1.3	U	0.11	U		0.94	U	0.12	U J	0.11	U	
	2-Hexanone	mg/kg	210	RSL	1.2	U	1.3	U	0.077	U		0.94	U	0.062	U J	0.077	U	
	4-Methyl-2-pentanone	mg/kg	5,300	R9	0.12	U J	0.13	U J	0.093	U		0.094	U J	0.12	U J	0.093	U	
	Acetone	mg/kg	61,000	RSL	0.24	U J	0.27	U J	0.14	J B		0.19	U J	0.25	U J	0.16	J B	
	Benzene	mg/kg	11	RSL	0.03	U J	0.033	U J	0.0057	U		0.024	U J	0.031	U J	0.0057	U	
	Bromochloromethane	mg/kg	8.2	R9	0.03	U J	0.033	U J	0.0091	U		0.024	U J	0.031	U J	0.009	U	
	Bromodichloromethane	mg/kg	2.7	RSL	0.03	U J	0.033	U J	0.01	U		0.024	U J	0.031	U J	0.01	U	
	Bromoform	mg/kg	610	RSL	0.03	U J	0.033	U J	0.0068	U		0.024	U J	0.031	U J	0.0068	U	
	Bromomethane	mg/kg	7.3	RSL	0.06	U J	0.067	U J	0.034	U		0.047	U J	0.062	U J	0.034	U	
Volatile Organics	Carbon disulfide	mg/kg	820	RSL	0.03	U J	0.033	U J	0.017	U		0.024	U J	0.031	U J	0.017	U	
	Carbon tetrachloride	mg/kg	6.1	RSL	0.012	U J	0.013	U J	0.013	U		0.0094	U J	0.012	U J	0.012	U	
	Chlorobenzene	mg/kg	290	RSL	0.012	U J	0.013	U J	0.0091	U		0.0094	U J	0.012	U J	0.009	U	
	Chloroethane	mg/kg	30	R9	0.12	U J	0.13	U J	0.022	U		0.094	U J	0.12	U J	0.021	U	
	Chloroform	mg/kg	2.9	RSL	0.03	U J	0.033	U J	0.01	U		0.024	U J	0.031	U J	0.01	U	
	Chloromethane	mg/kg	120	RSL	0.03	U J	0.033	U J	0.028	U		0.024	U J	0.031	U J	0.028	U	
	cis-1,2-Dichloroethene	mg/kg	NA	NA	0.012	U J	0.013	U J	0.011	U		0.0094	U J	0.012	U J	0.011	U	
	cis-1,3-Dichloropropene	mg/kg	17	RSL	0.012	U J	0.013	U J	0.011	U		0.0094	U J	0.012	U J	0.011	U	
	Dibromochloromethane	mg/kg	6.8	RSL	0.03	U J	0.033	U J	0.0091	U		0.024	U J	0.031	U J	0.009	U	
	Ethylbenzene	mg/kg	54	RSL	0.3	U	0.33	U	0.0091	U		0.0053	J	0.31	U	0.009	U	
	Methylene chloride	mg/kg	110	RSL	0.25	U J	0.26	U J	0.046	U		0.22	U J	0.23	U J	0.045	U	
	Styrene	mg/kg	6,300	RSL	0.012	U J	0.013	U J	0.0068	U		0.0094	U J	0.012	U J	0.0068	U	
	Tetrachloroethene	mg/kg	4.8	R9	0.03	U J	0.033	U J	0.0091	U		0.024	U J	0.031	U J	0.009	U	
	Toluene	mg/kg	5,000	RSL	0.03	U J	0.033	U J	0.008	U		0.024	U J	0.031	U J	0.0079	U	
	trans-1,2-Dichloroethene	mg/kg	NA	NA	0.03	U J	0.033	U J	0.013	U		0.024	U J	0.031	U J	0.012	U	
	trans-1,3-Dichloropropene	mg/kg	17	RSL	0.03	U J	0.033	U J	0.008	U		0.024	U J	0.031	U J	0.0079	U	
	Trichloroethene	mg/kg	0.53	R9	0.03	U J	0.033	U J	0.011	U		0.024	U J	0.031	U J	0.011	U	
	Vinyl chloride	mg/kg	0.6	RSL	0.03	U J	0.033	U J	0.016	U		0.024	U J	0.031	U J	0.016	U	
	Xylene (Total)	mg/kg	630	RSL	0.6	U	0.67	U	0.02	U		0.02	J	0.026	J	0.02	U	
							%RSD Average =				N/A			%RSD Average =				N/A

Table M-20. Results for Pesticides and PCBs in Soil Samples from Debris Pile C

		Location	Debris Pile C		Debris Pile C										
		Sample ID	C78SS-013M-0001-SO	C78SB-021M-0101-SO		C78SB-022M-0101-SO		C78SB-023M-0101-SO		% RSD	C78SB-021M-0102-SO		C78SB-022M-0102-SO		C78SB-023M-0102-SO		% RSD
		Type Sample	Primary	Primary		QC		QA			Primary		QC		QA		
		Sample Date	11/9/2011	11/9/2011		11/9/2011		11/9/2011			11/9/2011		11/9/2011		11/9/2011		
		Sample Depth (Ft)	0 - 1	1 - 3		1 - 3		1 - 3			3 - 5		3 - 5		3 - 5		
			Surface ISM	Subsurface Horizontal ISM							Subsurface Horizontal ISM						
Parameter		Units	Value	Value	Q	Value	Q	Value	Q		Value	Q	Value	Q	Value	Q	
Pesticides and PCBs	4,4'-DDD	mg/kg	0.02	0.01	U	0.02	U	0.003	P		0.004	U	0.002	U	0.0003	U	
	4,4'-DDE	mg/kg	0.017	0.0086	U	0.017	U	0.0023	J		0.0034	U	0.0017	U	0.0003	U	
	4,4'-DDT	mg/kg	0.02	0.01	U	0.02	U	0.012			0.004	U	0.0007	J	0.0005	U	
	Aldrin	mg/kg	0.041	0.02	U	0.041	U	0.0005	U		0.008	U	0.004	U	0.0005	U	
	alpha-BHC	mg/kg	0.026	0.013	U	0.025	U	0.0006	U		0.005	U	0.0025	U	0.0006	U	
	alpha-Chlordane	mg/kg	0.031	0.015	U	0.03	U	0.0003	U		0.006	U	0.003	U	0.0003	U	
	beta-BHC	mg/kg	0.036	0.018	U	0.035	U	0.04	P		0.007	U	0.0035	U	0.0006	U	
	Chlordane (Technical)	mg/kg						0.004	U						0.004	U	
	delta-BHC	mg/kg	0.041	0.02	U	0.041	U	0.0004	J P		0.008	U	0.004	U	0.0003	U	
	Dieldrin	mg/kg	0.017	0.0086	U	0.017	U	0.0003	U		0.001	J	0.0017	U	0.0058	P	
	Endosulfan I	mg/kg	0.017	0.0086	U	0.017	U	0.0007	U		0.0034	U	0.0017	U	0.0007	U	
	Endosulfan II	mg/kg	0.026	0.013	U	0.025	U	0.0003	J P		0.005	U	0.0025	U	0.0007	J P	
	Endosulfan sulfate	mg/kg	0.031	0.015	U	0.03	U	0.00091	U		0.006	U	0.003	U	0.00091	U	
	Endrin	mg/kg	0.017	0.0086	U	0.017	U	0.0004	U		0.0034	U	0.0017	U	0.0037		
	Endrin aldehyde	mg/kg	0.031	0.015	U	0.03	U	0.0038	J		0.006	U	0.003	U	0.0011	U	
	Endrin ketone	mg/kg	0.02	0.01	U	0.02	U	0.0036	J P		0.004	U	0.002	U	0.0008	U	
	gamma-BHC (Lindane)	mg/kg	0.026	0.013	U	0.025	U	0.0005	U		0.005	U	0.0025	U	0.0014	J P	
	gamma-Chlordane	mg/kg	0.017	0.0086	U	0.017	U	0.0003	U		0.0034	U	0.0017	U	0.0003	U	
	Heptachlor	mg/kg	0.036	0.018	U	0.035	U	0.0032	P		0.007	U	0.0035	U	0.0004	U	
	Heptachlor epoxide	mg/kg	0.026	0.013	U	0.025	U	0.0005	U		0.005	U	0.0025	U	0.0016	J P	
	Methoxychlor	mg/kg	0.051	0.025	U	0.033	J	0.0091	P		0.01	U	0.005	U	0.024		
	Toxaphene	mg/kg	0.68	0.34	U	0.68	U	0.005	U		0.13	U	0.067	U	0.005	U	
	Aroclor 1016	mg/kg	0.066	0.066	U	0.066	U	0.01	U		0.065	U	0.065	U	0.01	U	
	Aroclor 1221	mg/kg	0.051	0.051	U	0.051	U	0.02	U		0.05	U	0.05	U	0.02	U	
	Aroclor 1232	mg/kg	0.046	0.046	U	0.046	U	0.027	U		0.045	U	0.045	U	0.027	U	
	Aroclor 1242	mg/kg	0.041	0.041	U	0.041	U	0.029	U		0.04	U	0.04	U	0.029	U	
	Aroclor 1248	mg/kg	0.056	0.056	U	0.056	U	0.029	U		0.055	U	0.055	U	0.029	U	
	Aroclor 1254	mg/kg	0.056	0.056	U	0.056	U	0.023	U		0.088		0.022	J	0.25		97.8
	Aroclor 1260	mg/kg	0.056	0.056	U	0.056	U	0.012	U		0.055	U	0.055	U	0.012	U	
								%RSD Average =		N/A					%RSD Average =		97.8

Appendix N – Ohio EPA's Comments and Army Responses

Ohio Environmental Protection Agency

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

July 25, 2016

Mr. Mark Leeper, P.G., MBA
Restoration/Cleanup Program Manager
ARNG Directorate
111 S. George Mason Dr.
Arlington, VA 22204

Re: US Army Ravenna Ammunition Plt RVAAP
Remediation Response
Remedial Response
Portage County
267000859156

Subject: Ohio EPA's Review of Army's Draft Site Inspection Report, CC-RVAAP-78 Quarry Pond Surface Dump

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the Draft Revised Site Inspection for CC RVAAP-78 Quarry Pond Surface Dump. The document was received by this office on June 15, 2016. It was originally prepared by Prudent Technologies, Inc. under contract no. W912QR-10-P-0052, but due to the expiration of that contract, it was revised and re-written by the US Army Corps of Engineers.

Ohio EPA has the following comment:

1. Section 6.3, pp. 65 and 66: The report identifies thallium as contamination in Debris Piles A and C in surface soil. According to Table 6-1 (Debris Pile A), the maximum detection for thallium was 0.1J mg/kg. According to Table 6-2 (Debris Pile C) the maximum detection was 0.15J mg/kg. The background criteria (for surface soil) is 1.2 mg/kg and the facility-wide cleanup goal (FWCUG) is 0.612 for Resident Child and 4.76 for Resident Adult.

   Action Item: Please clarify why thallium is a contaminant for this site when the maximum detection is lower than both background and the FWCUGs and revise the report as necessary. Please also note that the Executive Summary, p. xii will need revision as well.

In an e-mail communication with Angela Schmidt on July 21, 2016, the Army provided the following response to this comment:

> *In Table 6.1 (Debris Pile A) and Table 6.3 (Debris Pile C) thallium is incorrectly identified as "contamination" but should have fallen out in the first screen (<background). Both the table and text will be corrected before finalization.*

This response is acceptable. Please revise and re-submit the document accordingly.

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Received
July 26, 2016

If you have any questions or concerns related to this review or would like to schedule a meeting or conference call, please free feel to contact me at (330) 963-1170.

Sincerely,

Edward J. D'Amato
Project Coordinator
Ohio EPA - Division of Environmental Response and Revitalization

ED/nvr

ec: Rod Beals, Manager, DERR, NEDO
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Katie Tait, OHARNG RTLS
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Mark Nichter, USACE
Rebecca Shreffler/Gail Harris, Vista Sciences Corp.
DERR/DO VAP Files