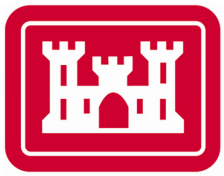
FINAL
REMEDIAL ACTION COMPLETION REPORT
FOR THE
REMEDIATION OF SOILS AND DRY SEDIMENTS
AT RVAAP 08-11 (LOAD LINES 1-4)

RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO



US Army Corps
of Engineers ®
Louisville District

CONTRACT NO. DACA45-03-D-0026
TASK ORDER 0001

JUNE 2008

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FINAL
REMEDIAL ACTION COMPLETION REPORT
FOR THE
REMEDIATION OF SOILS AND DRY SEDIMENTS
AT RVAAP 08 -11 (LOAD LINES 1-4)

Volume 1 – Main Report

Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. DACA45-03-D-0026
Delivery Order 0001

Prepared for:

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June 27, 2008

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USACE Contracting Officer's Representative	4	4
USACHPPM	1	1
USAEC Program Manager		1
Shaw Project Manager	2	2

BRACO – Base Realignment and Closure Office
NGB – National Guard Bureau
OHARNG – Ohio Army National Guard
OhioEPA – Ohio Environmental Protection Agency
RVAAP – Ravenna Army Ammunition Plant
USACE – U.S. Army Corps of Engineers – Louisville District
USACHPPM – U.S. Army Center for Health Promotion and Preventative Medicine
USAEC – U.S. Army Environmental Center

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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Shaw Environmental, Inc. has completed the Final Remedial Action Completion Report for the Remediation of Soils and Dry Sediments at RVAAP 08-11 (Load Lines 1-4) at the Ravenna Army Ammunition Plant, Ravenna, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets customer's needs consistent with law and existing Corps policy.

Reviewed/Approved by:  Date: June 27, 2008

David Cobb
Project/Program Manager

Prepared/Approved by:  Date: June 27, 2008

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Technical/Regulatory Lead

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LIST OF ACRONYMS

µg/L	micrograms per liter
µm	micron
AOC	Area of Concern
AEDBR	Army Environmental Data Base-Restoration
AHA	Activity Hazard Analysis
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society of Testing and Materials
AWMS	American Waste Management Services
bgs	below ground surface
BRACD	Base Realignment and Closure Division
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Chemical of Concern
cs	confirmatory sample
DoD	Department of Defense
DOT	Department of Transportation
DQO	Data Quality Objective
E&S	Erosion and Sediment
ECD	Electron Capture Detector
FPRI	Fixed Price Remediation Insurance
FSAP	Facility-Wide Sampling Analysis Plan
FSP	Field Sampling Plan
FWGWMP	Facility-Wide Groundwater Management Program
ft^2	square feet
GC	Gas Chromatograph
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations Emergency Response
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
ICP	Inductively Coupled Plasma
IDW	Investigative Derived Waste
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
J	The result was positively identified but less than the reporting limit
kg	kilogram
LCG	Louisville Chemistry Guidelines
LLs	Load Lines
MCAWW	Method for Chemical Analysis of Water and Waste
MCL	Maximum Contaminant Limit
MEC	Munitions and Explosives of Concern
mg/kg	milligrams per kilogram
mg/L	Milligrams per liter
MKM	MKM Engineering, Inc.
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NGB	National Guard Bureau

NOI	Notice of Intent
NOT	Notice Of Termination
NPDES	National Pollutant Discharge Elimination System
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
OUPS	Ohio Utilities Protection Services
PAH	Polyaromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCP	Project Coordination Plan
PEL	Permissible Exposure Limit
PIKA	PIKA International, Inc.
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goal
QA	Quality Assurance
QAMP	Quality Assurance Management Plan
QAPP	Quality Assurance Project Plan
QC	Quality Control
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethyltrinitramine or Cyclonite
REIMS	Ravenna Environmental Information Management System
RI	Remedial Investigation
ROD	Record of Decision
RTLS	Ravenna Training and Logistics Site
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SERCP	Security, Emergency Response and Contingency Plan
Shaw	Shaw Environmental, Inc.
SHERP	Safety, Health and Emergency Response Plan
SOP	Standard Operating Procedure
SWPPP	Storm Water Pollution Prevention Plan
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TLV	Threshold Limit Value
TNT	Trinitrotoluene
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USP&FO	United States Property and Fiscal Officer
VOC	Volatile Organic Compound
WMMP	Waste Management and Minimization Plan
XRF	X-Ray Fluorescence

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

Shaw Environmental, Inc. (Shaw) was contracted by the United States Army Corps of Engineers (USACE) Omaha District to perform remediation activities associated with impacted soils and dry sediments in Load Lines 1, 2, 3 and 4 (LLs 1-4) at the Ravenna Army Ammunition Plant (RVAAP) under the Fixed-Price Remediation Insurance (FPRI) Indefinite Delivery/Indefinite Quantity Contract No. DACA45-03-D-0026. LLs 1-4 are cross-referenced in the Army Environmental Data Base-Restoration (AEDBR) as Area of Concern (AOC) site numbers RVAAP 08, 09, 10 and 11, respectively. Work by Shaw at the Ravenna facility in LLs 1-4 was performed under Delivery Order 0001 of the above referenced contract and managed by the USACE-Louisville District.

The purpose of this Remedial Action Completion Report (RACR) is to describe the activities completed, document the post remediation conditions and summarize the results of the final field testing. The actions described in this document and performed under this delivery order were conducted in accordance with the selected remedy as presented in the Final Interim Record of Decision (ROD) (Shaw 2007a) that outlines the construction methodologies for excavation approach, contamination control, and protection of the public and environment at the LLs 1-4 locations.

1.2 SITE DESCRIPTION AND BACKGROUND

The RVAAP is located in northeastern Ohio within Portage and Trumbull Counties, approximately 1.6 km (1 mile) northwest of the city of Newton Falls and 4.8 km (3 miles) east-northeast of the city of Ravenna (**Figure 1-1**). The facility is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east (**Figure 1-2**).

As of February 2006, a total of 20,403 acres of the former 21,683-acre RVAAP have been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a training site. Currently, RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the Ravenna Training and Logistics Site (RTLS). RVAAP's remaining parcels of land are located completely within the RTLS. RTLS did not exist when RVAAP was operational, and the entire 21,683-acre parcel was a government-owned, contractor-operated industrial facility.

The RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP; therefore, references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current RTLS and RVAAP, unless otherwise specifically stated. The Ohio Environmental Protection Agency (Ohio EPA) is the lead regulatory agency for the remediation conducted by the Army under the U.S. Department of Defense (DoD) IRP.

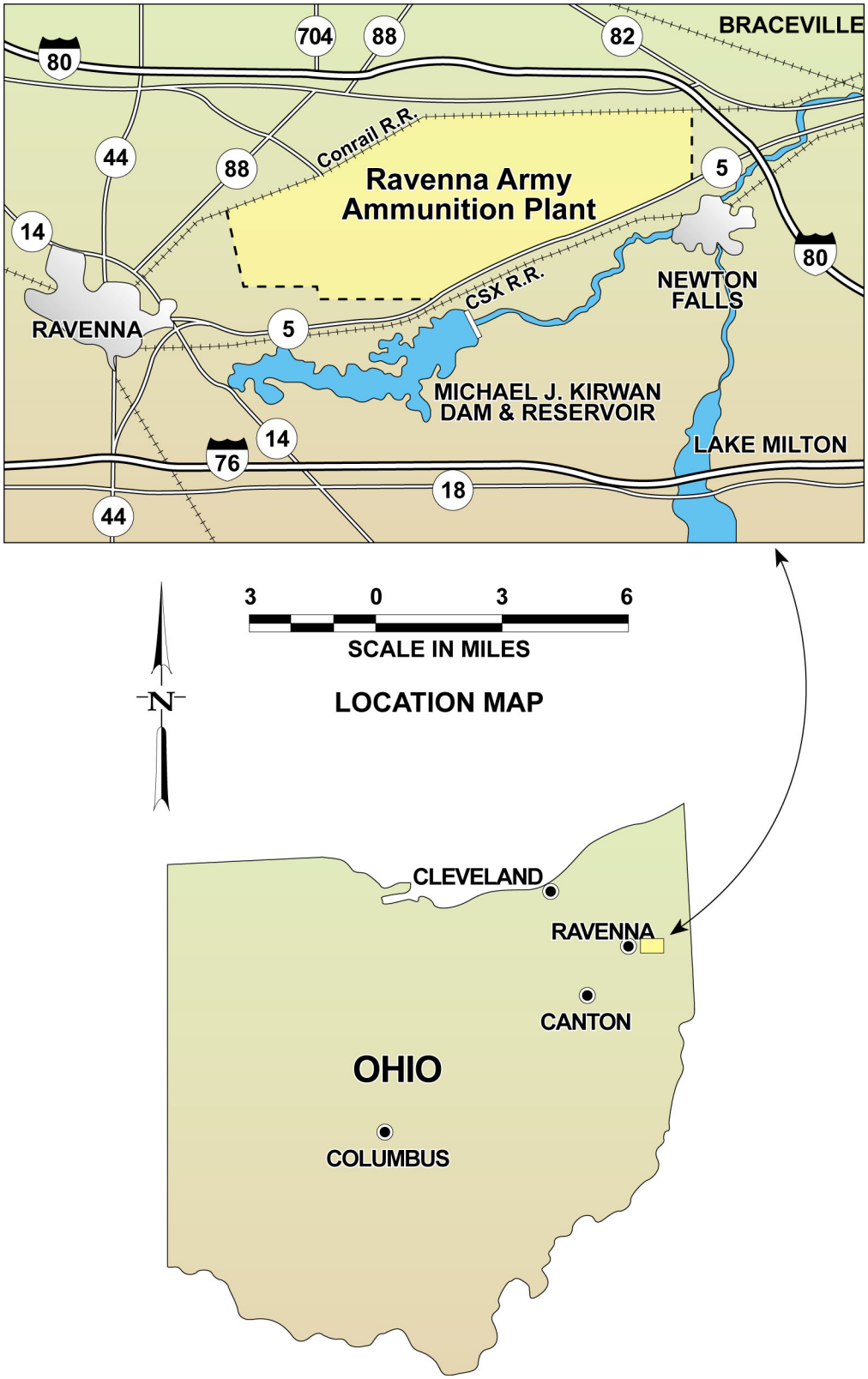

Figure 1-1
Site Locus Map

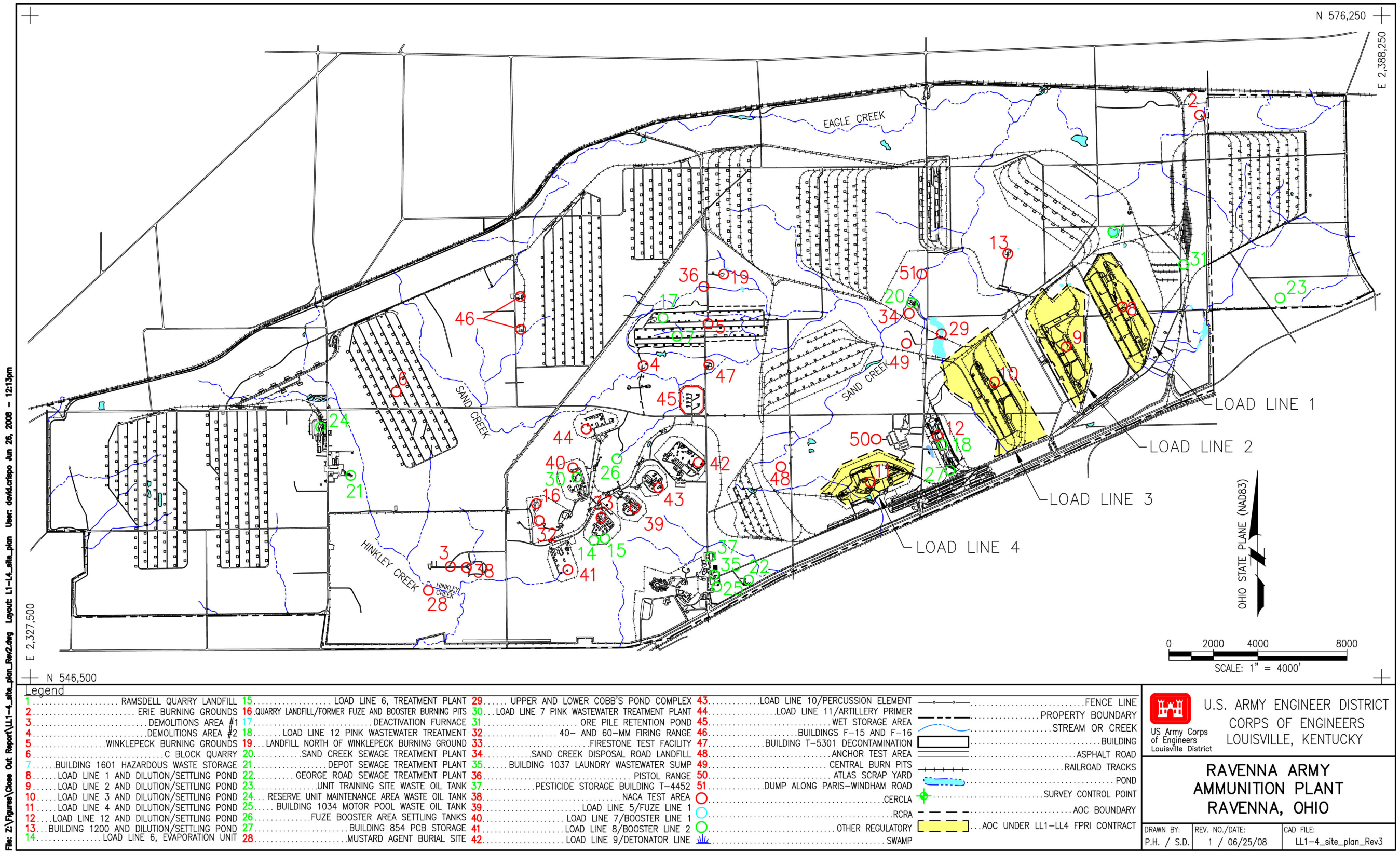

Figure 1-2
RVAAP Facility Map

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1.2.1 Load Lines 1 - 4

Industrial operations at the RVAAP primarily consisted of 12 munitions assembly facilities referred to as "load lines." LLs 1-4 were used between 1941 and 1971 to melt and load trinitrotoluene (TNT) and Composition B, a mixture of TNT and cyclotrimethylenetrinitramine (cyclonite or RDX), into large-caliber shells. The operations of the primary load lines produced explosive dust, spills and vapors that collected on the floors and walls of various process buildings. Periodically, the floors and walls would be cleaned with water and steam. The resulting liquid contained TNT and Composition B and was known as "pink water" for its characteristic color.

Various industrial operations associated with the munitions loading process and munitions rehabilitation activities were also conducted during the operation of LLs 1-4. As a result of these operational activities, soils, sediments, and other media became contaminated with explosives.

In 1951, soils contaminated with accumulated explosives were removed from LL 1 and replaced with clean fill. No other remedial actions, except salvage and building demolition activities, have been conducted at LLs 1-4.

The RVAAP has been inactive since 1992. The only activity still being carried out from the wartime era is the infrequent demolition of munitions and explosives of concern (MEC) found at the RVAAP. The Army has completed the salvage activities and demolition at LLs 2-4, with the exception of floor slabs and foundations which are contracted to be removed by others in 2008.

1.3 NATURE AND EXTENT OF CONTAMINATION

The summary of the nature and extent of contaminated shallow soils and dry sediment for which the remedial action was performed is based on the Phase I and II remedial investigations (RIs) for LLs 1-4 (SAIC 2003; Shaw 2004b, 2004c, 2004d). Evaluation and data collected for LLs 1-4 during the Phase I and II RIs show that historical operations resulted in contamination of shallow soils and dry sediment primarily in the vicinity of former production buildings and in various settling tanks and drainage ditches near those buildings. The wash water from the floors and walls that contained contaminants infiltrated into the soils around the buildings, drained into the network of storm sewers, or was directed by surface flow through channels to surface water. The chemicals of concern (COCs) included metals, explosives, polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs). Based on evaluations conducted during the RIs, explosives were mobile in water and had the potential to leach from the soils. Inorganics, PCBs and polynuclear aromatic hydrocarbons (PAHs) were not expected to readily leach from soils. Contamination varied considerably within each load line by type and frequency of contaminant detected, concentration, and depth. Based on the RI data, LL 1 was the most contaminated (i.e., widest variety of contaminants detected, highest frequency of COC detection, and highest COC concentrations) and LL 4 was the least contaminated of the four load lines.

The soil and sediment contamination detected at LLs 1-4 was generally surficial in nature, between ground surface and 3 feet below ground surface (bgs). As mentioned previously, the likelihood of migration was minimal for inorganics, PCBs and SVOCs identified as the COCs; however, explosive constituents may have leached from soils via infiltration. Based on the available data, the estimated quantity of soils and dry sediments to be removed was 15,000 cubic

yards (Shaw 2005). Construction As-Built Drawings are presented in **Appendix A** and show the areas of soil at LLs 1-4 with concentrations that exceeded the applicable cleanup levels that required removal.

2.0 PROJECT DESCRIPTION

2.1 SUMMARY OF RECORD OF DECISION

The Final Interim ROD (Shaw 2007a) prepared for the LLs 1-4 at the RVAAP documents the selected remedy (excavation and off-site disposal) for surface and subsurface soils and dry sediment. The selected remedy is a final remedy for contaminated soils and dry sediment at LLs 1-4. This remedy was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. § 9601-9675.

The selected remedy was evaluated against two threshold criteria:

1. Overall protection of human health and the environment
2. Compliance with applicable or relevant and appropriate requirements (ARARs)

The Remedial Action Objective (RAO) was developed by considering the COCs, associated media, potential exposure pathways and receptors, and ARARs. The RAO for surface and subsurface soils and dry sediment was to prevent ingestion, inhalation, or direct contact with COCs exceeding the identified cleanup goals. Excavation and off-site disposal, the selected remedy, was considered consistent with the planned future use of the AOCs for National Guard mounted training, no digging, and met the required threshold criteria.

The selected remedy included the following components:

- Excavation of discrete areas of contaminated surface and subsurface soils and dry sediment with concentrations of contaminants exceeding cleanup goals
- Temporary on-site storage via stockpiling characterization
- Off-site disposal of soils at a permitted landfill, and; as needed, disposal at a Toxic Substances Control Act (TSCA) and/or Resource Conservation and Recovery Act (RCRA) permitted landfill
- Replacement of excavated material with clean backfill
- Groundwater monitoring to ensure the remedy did not impact groundwater
- Maintenance of building slabs

2.1.1 Remedial Action Objectives

Clean-up goals are the maximum allowable concentrations which are protective of human health and the environment. Clean-up goals for surface and subsurface soils and dry sediment at LLs 1-4 were determined based on risk-based and site-specific considerations, including background concentrations, duration of reasonable maximum human exposures, and reasonably anticipated future land use (National Guard mounted training, no digging). Attainment of the RAO addressed potential risks to human and ecological receptors identified in the risk assessment through removal of surface and subsurface soil and dry sediment with concentrations of COCs

exceeding clean-up goals (Shaw 2007a). The clean-up goals implemented for the remediation of soils and dry sediment at LLs 1-4 as presented in the Interim ROD are included in **Table 2-1**.

Table 2-1
COCs and Cleanup Goals for Soils and Dry Sediments at LLs 1-4

COC	Cleanup Goal (mg/kg)
Inorganics	
Aluminum	34,942
Antimony	2,458
Arsenic	31
Barium	3,483
Cadmium	109
Chromium, hexavalent	16
Manganese (surface soils[a])	1,800
Manganese (subsurface soils[b])	3,030
Lead	1,995
Explosives	
2,4,6-TNT	1,646
RDX	838
PCBs	
Aroclor-1254	35
SVOCs	
Benz(a)anthracene	105
Benzo(a)pyrene	10
Benzo(b)fluoranthene	105
Dibenz(a,h)anthracene	10

Notes:
COC – Chemical of Concern
mg/kg – milligram per kilogram
PCB – Polychlorinated biphenyl
SVOCs – Semi-volatile organic compound
TNT – Trinitrotoluene
RDX - Cyclonite
[a] Surface soil interval is from 0 to 1 foot below ground surface
[b] Subsurface soil interval is greater than 1 foot below ground surface

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2.2 SUMMARY OF REMEDIAL ACTION WORK PLAN

As required per the CERCLA process, Shaw prepared a Remedial Action Work Plan (RAWP) (Shaw 2007b) which presents the "means and methods" for executing the selected remedy in accordance with the Final Interim ROD. The RAWP was reviewed and approved by USACE, Ohio EPA, and the RVAAP prior to field implementation and outlines the construction methodologies for excavation, contamination control, and protection of the public and the

environment during construction activities. Remediation activities performed in accordance with the approved RAWP are discussed in further detail in **Section 3.0**.

2.3 POST-ROD CHANGES TO THE SELECTED REMEDY

Since the signing of the Final Interim ROD in July 2007 and implementation of field activities, changes to the selected remedy have been initiated by USACE and the Base Realignment and Closure Division (BRACD). These changes consist of eliminating two activities that were contracted and to be performed by Shaw following the completion of the remedial action:

1. Post-construction groundwater monitoring
2. Concrete slab maintenance

2.3.1 Groundwater Monitoring

In addition to excavation and off-site disposal, the selected remedy in the Final Interim ROD originally contained provisions for Shaw to perform groundwater monitoring for five years at selected wells to monitor for potential impacts to groundwater from remedy implementation. USACE intends to remove this task from Shaw's scope of work and anticipates performing it under the Facility-Wide Groundwater Monitoring Program (FWGWMP) or another contract. Before this task was eliminated, baseline groundwater sampling was performed by Shaw prior to construction activities and is discussed further in **Section 3.2**.

2.3.2 Concrete Slab Maintenance

The selected remedy requires periodic monitoring of the concrete slabs that remain in place to ensure that the integrity of the slabs has not been compromised. The slabs provide adequate barriers to prevent precipitation from infiltrating to impacted soils beneath. BRACD has already contracted for removal of slabs and foundations at LL 2, 3, and 4. BRACD started slab and foundation removal in March 2008. Removal of the slabs and foundation will eliminate the need for routine maintenance as directed in the selected remedy.

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3.0 CONSTRUCTION ACTIVITIES

This section details construction tasks that were undertaken to implement the remedial actions at LLs 1-4. These activities were performed in accordance with the Final Interim ROD (Shaw 2007a), the RAWP (Shaw 2007b) and the associated management and field plans (Shaw 2004e, f; 2006a-h; 2007c) to ensure the cleanup goals and specific environmental protection requirements during construction activities were met.

3.1 PREMOBILIZATION

Prior to mobilizing to the RVAAP, Shaw acquired the required permits, planned and coordinated traffic routes, performed a pre-construction survey, identified any remaining utilities, and conducted a pre-construction meeting with the RVAAP Team members.

3.1.1 Required Permits/Clearances

Shaw personnel verified that all applicable permits, notifications, and approvals had been obtained prior to mobilization. Special attention was made to ensure activities to be performed near environmentally sensitive areas were coordinated with the OHARNG, the RVAAP Facility Manager, and the Ohio EPA in accordance with Federal, State, and local regulations. Before commencing construction activities, Shaw filed a Notice of Intent (NOI) for Coverage under the Ohio EPA General Permit, Ohio EPA Permit No. GPOHC000002, for authorization for storm water discharges associated with construction activity under the National Pollutant Discharge Elimination System (NPDES). Per the requirements of the General Permit, a Storm Water Pollution Prevention Plan (SWPPP) (Shaw 2007c) was submitted to the Ohio EPA and Portage County Soil and Water Commission prior to construction activities.

Prior to the intrusive subsurface activities, Shaw coordinated utility clearances at LLs 1-4 with PIKA International, Inc. (PIKA), the RVAAP operating contractor, and the Ohio Utilities Protection Services (OUPS). The OUPS representative reviewed information and resources available for the facility and verified that there were no live utilities present at any of the areas that Shaw anticipated to perform intrusive activities.

3.1.2 Traffic Coordination and Routing

Shaw established transportation routes for incoming and outgoing vehicles and heavy equipment to minimize the impact to the RVAAP and surrounding community. The proposed truck routes reflected the shortest egress from the load lines to the primary roadway (State Route 5) wherever possible. Haul routes were positioned to minimize the removal of mature vegetation or encroachment on wetland areas.

3.1.3 Pre-Construction Survey

A preconstruction survey was performed to document initial conditions at each of the load lines and along the roadways of the intended haul route at the RVAAP. The pre-construction survey included a detailed inspection of existing conditions following demolition activities at LLs 2-4 and of the primary road surfaces that Shaw anticipated using a minimum of several weeks before

operations commence. The preconstruction survey included photographs and video footage of the preconstruction site conditions.

3.1.4 Pre-Construction Meeting

Prior to commencing activities at RVAAP, Shaw conducted a pre-construction meeting that included members of USACE, Ohio EPA, OHARNG, RVAAP and the Shaw project team. Personnel from PIKA, the BRACD demolition contractor at LLs 2-4, were also in attendance in order to provide effective coordination between the PIKA demolition and debris removal activities and Shaw's intended remediation activities. The pre-construction meeting communicated client and contractual expectations to the project team, established internal expectations, defined and communicated all project requirements, and ensured that the project/team members understood their individual roles and responsibilities. Throughout the duration of construction activities, the Shaw field superintendent participated in the RVAAP weekly coordination meetings that were typically held on Mondays.

3.2 BASELINE GROUNDWATER SAMPLING

Shaw performed baseline groundwater sampling from 17 selected existing monitoring well locations at LLs 1-4 to ensure the remedial activities did not further impact groundwater and to determine pre-remedial conditions. The selected monitoring well locations were agreed upon between USACE and the Ohio EPA and were primarily chosen due to the locations of the wells in proximity and hydraulically down gradient to the Shaw excavation areas. The monitoring wells chosen for the baseline groundwater sample event included the following:

- Load Line 1: LL1mw067, -078, -081, -082, -084, -085;
- Load Line 2: LL2mw262, -263, -266, -267, -269;
- Load Line 3: LL3mw236, -238, -239; and
- Load Line 4: LL4mw196, -197, -198

Further details regarding the monitoring well locations and selection rationale are presented in the RAWP (Shaw 2007b). Groundwater sampling activities were performed in accordance with the requirements of the Facility-wide Sampling and Analysis Plan (FSAP) (SAIC 2001), the FWGWMP Plan (USACE 2004), and the Shaw Field Sampling Plan (FSP) (Shaw 2006b).

3.2.1 Well Redevelopment

Some of the baseline well locations are not currently included in the FWGWMP and had not been sampled for several years prior to the baseline sampling event. This resulted in some of these wells requiring redevelopment due to excess sediment in the well columns. Prior to sampling, Shaw measured the depth of sediment thickness at each well. If greater than 10% of the screen interval was measured as silted (i.e., greater than one foot of sediment thickness for a 10-foot screen interval) then the well was redeveloped. Monitoring wells requiring redevelopment were completed as required using a low-flow peristaltic pump as described in Section 4.3.2.3.11.1 in the FSAP (SAIC 2001).

3.2.2 Field Measurements

Groundwater field measurements, collected as part of Shaw's groundwater sampling activities, included determination of static water level, pH, conductivity, dissolved oxygen concentrations, and temperature in accordance with Section 4.3.3 in the FSAP (SAIC 2001). Shaw utilized a combination meter designed to measure the aforementioned parameters. Initial head space readings were collected at each well location utilizing a photo-ionization detector unit. The collection of field measurements complied with the performance requirements as specified in Table 4-3 of the FSAP (SAIC 2001). The field measurement data collected as part of the Shaw baseline groundwater sample event was inadvertently lost during demobilization activities in January 2008 and was not available for inclusion in this RACR. Although, unable to include in the report, the field measurement data was collected in accordance with Section 3.2.2 and indicated that the integrity of the collected groundwater samples were not compromised. Field screening data met the allowable criteria for sampling protocols applicable to the site.

3.2.3 Purging Methods

Monitoring well purging and groundwater sampling was conducted using conventional well purging with a low-flow peristaltic pump as described in Section 4.3.4 in the FSAP (SAIC 2001). Purging continued until pH, conductivity, dissolved oxygen, and temperature reached equilibrium. Equilibrium was established by three consecutive readings, where one well casing volume was purged between each reading. Purging was terminated before establishment of equilibrium if one of the following conditions was met: (1) five well volumes had been removed; or (2) the well was purged to dryness.

In several instances, a well was purged to dryness and sampling was delayed for a time period of up to 24 hours to allow for recharge. During the delay period, the atmosphere of the well was isolated to the greatest extent possible from the surface atmosphere. Upon sufficient recharge of groundwater into the well, a sample was collected without additional well purging.

In order to minimize the quantity of investigation-derived waste (IDW) liquids generated due to the well purging activities, wells were micro-purged in accordance with Ohio EPA technical guidance (Ohio EPA 1995). All development and purge groundwater was containerized and managed as IDW liquid wastes. Disposal of this liquid waste is discussed in **Section 4.0**.

3.2.4 Sample Collection

Groundwater sampling at a monitoring well location commenced immediately after purging was completed unless the well was purged to dry conditions as discussed in **Section 3.2.3**. Groundwater sampling activities were performed in accordance with Sections 4.3.5 and 4.3.6 of the FSAP (SAIC 2001). Groundwater samples were collected for analysis of the full suite of COCs including target compound list (TCL) volatile organic compounds (VOCs), TCL SVOCs, TCL pesticides, PCBs, explosives, propellants (nitroglycerine, nitro-guanidine, and nitro-cellulose) and filtered target analyte list (TAL) metals. Further details regarding groundwater sampling and analytical requirements are presented in the RAWP (Shaw 2007b). Bottles designated for VOC analysis were filled first and in a manner so than no headspace remained. Immediately after collection of each sample and completion of bottle label

information, each sample container was placed in a sealed plastic bag and then placed in an ice-filled cooler to ensure preservation.

The submersible pump was lowered slowly until it contacted the groundwater surface and then was continued to be lowered until it reached the midpoint of the well screen. The pump was turned on and allowed to operate until a steady flow of groundwater was expelled from the Teflon® return line at the ground surface. The discharge line was not allowed to touch any interior portion of the decontaminated sample container or the sample matrix within the container.

3.2.5 Filtration Procedures

For Shaw groundwater activities, filtered samples were only collected for dissolved TAL metals. Filtration was performed at each well location using a disposable 0.45-micron (μm) pore size filter assembly and filters were replaced between each well location or as they became restricted by solids buildup.

3.2.6 Field Quality Control Sampling Procedures

As part of the groundwater monitoring activities, Shaw collected three types of quality control (QC) samples consisting of duplicates, equipment rinsate blanks, and trip blanks in accordance with Section 4.3.7 of the FSAP (SAIC 2001). Duplicate samples of the full suite were collected at a frequency of 10% of the field samples collected. This sample frequency applies to matrix spike/matrix spike duplicate (MS/MSD) samples as well. Equipment rinsate blanks were collected at a frequency of 10% or, depending on the number of samples collected during a day, one per day per field samples collected at each load line. Temperature and trip blanks consisted of a sealed container of American Society of Testing and Materials (ASTM) Type I water and were placed into each cooler used to transport field samples. Trip blanks were analyzed for VOC analysis.

3.2.7 Decontamination Procedures

Decontamination of equipment associated with the Shaw groundwater sampling activities was performed in accordance with the procedures presented in Section 4.3.8 of the FSAP (SAIC 2001).

3.2.8 Summary of Groundwater Sample Results

The purpose of the initial groundwater sampling activities was to identify presence of contaminants in groundwater prior to initiation of Shaw construction activities. Baseline groundwater sampling was not intended to characterize the extent of contamination at these locations or attempt to ascertain a potential source. However, in order to establish the existing contaminant conditions in groundwater at LLs 1-4, where applicable, results were compared to the United States Environmental Protection Agency (USEPA) Primary Drinking Water Regulations and their Maximum Contaminant Limits (MCLs) and Secondary Standards, the USEPA Region 9 Preliminary Remediation Goals (PRGs), and the RVAAP-established background criteria and summary statistics (inorganics only) for bedrock and unconsolidated zone filtered/unfiltered groundwater background wells. It should be noted that not all organic and inorganic compounds, analyzed as part of the baseline groundwater sampling event, have

established screening levels. A summary of analytical results for the Shaw baseline groundwater sampling event are presented in the data summary tables (**Table B-1**) in **Appendix B**. The Kemron laboratory report and associated evaluation report for groundwater are presented in **Appendix C** in the electronic attachment.

3.2.8.1 Volatile Organic Compounds

Low level concentrations of VOCs were detected in groundwater samples above the method detection limits at all four load lines and included the following compounds at the identified well locations:

- Chloromethane – LL1mw078 (0.935 µg/L J), LL1mw081 (0.514 µg/L), LL1mw082 (0.378 µg/L J), LL1mw084 (0.559 µg/L J), LL1mw084 (0.342 µg/L J), LL2mw262 (0.413 µg/L J and 0.324 µg/L J), LL2mw263 (0.567 µg/L J), LL3mw236 (0.561 µg/L J), LL3mw238 (0.430 µg/L J), LL3mw239 (0.317 µg/L J), LL4mw197 (0.307 µg/L J) and LL4mw198 (0.333 µg/L J)
- Acetone – LL1mw082 (3.28 µg/L), LL3mw239 (17.7 µg/L)
- Trichloroethene – LL1mw085 (0.259 µg/L J)
- Chloroform – LL2mw267 (0.366 µg/L J) and LL3mw239 (0.335 µg/L J)
- Carbon Disulfide – LL3mw239 (0.557 µg/L J)
- 2-Butanone – LL3mw239 (4.1 µg/L J)
- Toluene - LL3mw-239 (0.316 µg/L J)

The location where the most VOCs were detected was well LL3mw239. Drinking water MCLs have only been established for trichloroethene and toluene which were detected at one well location each at LL1mw085 and LL3mw239, respectively. Both concentrations detected were below their MCLs. Chloromethane was the most widespread VOC detected and was identified in various wells at all four load lines. Detected VOCs that exceeded the Region 9 PRGs included chloroform at LL2mw267 and LL3mw239. The contaminant concentrations in samples were not attributable to lab contamination.

3.2.8.2 Semi-Volatile Organic Compounds

One SVOC contaminant exceeded the method detection limit. Bis(2ethylhexyl)phthalate was detected at a concentration of 6.51 micrograms per liter (µg/L) at well location LL1mw084. This compound exceeds the Region 9 PRG of 4.8 µg/L. There is no MCL standard for this compound.

3.2.8.3 Explosives and Propellants

Concentrations of explosives were detected in groundwater samples at four well locations above the method detection limits and included the following compounds at the identified well locations:

- 1,3-Dinitrobenzene – LL1mw084 (1.33 μg/L)
- 2,4,6-Trinitrotoluene – LL1mw084 (9.18 μg/L) and LL3mw238 (65.1 μg/L)
- 2,4-Dinitrotoluene – LL1mw084 (4.35 μg/L)
- 2-Amino-4,6-dinitrotoluene – LL1mw081 (0.553 μg/L J), LL1mw084 (15.8 μg/L J), LL2mw267 (0.477 μg/L J) and LL3mw238 (2.84 μg/L)
- 4-Amino-2,6-dinitrotoluene – LL1mw081 (0.563 μg/L J), LL1mw084 (21.9 μg/L), LL2mw267 (0.453 μg/L J) and LL3mw238 (26.6 μg/L and 26.3 μg/L)
- 4-Nitrotoluene - LL2mw267 (0.436 μg/L J)
- HMX – LL1mw084 (0.417 μg/L J) and LL3mw238 (1.49 μg/L)
- RDX – LL1mw084 (2.42 μg/L) and LL3mw238 (8.42 μg/L)
- 1,3,5-Trinitrobenzene (4.24 μg/L) and LL3mw238 (24 μg/L)

All of the aforementioned explosive compounds, with the exception of 4-nitrotoluene, were detected at well LL1mw084. The well with the highest concentrations for the individual explosive COCs was LL3mw238. Trinitrotoluene and RDX were above the Region 9 PRGs at both well locations. No propellants were detected in any of the baseline groundwater samples.

3.2.8.4 Inorganics

In addition to MCLs and Region 9 PRGs, the inorganics detected above the laboratory reporting limits were compared to facility-wide background criteria for filtered groundwater. Calcium, magnesium, iron, potassium, and sodium were eliminated from this discussion as potential on-site contaminants because they are considered essential nutrients. The following inorganic elements were detected above the reporting limits and applicable background levels:

- Dissolved Arsenic – LL1mw081 (0.00102 mg/L), LL1mw082 (0.00191 mg/L), LL1mw085 (0.000427 mg/L), LL2mw262 (0.000313 mg/L J and 0.000268 mg/L J), LL2mw263 (0.0104 mg/L), LL2mw266 (0.00488 mg/L and 0.00554 mg/L), LL2mw267 (0.00438 mg/L), LL2mw269 (0.000623 mg/L J), LL3mw236 (0.000277 mg/L J), LL3mw238 (0.000434 mg/L J), LL3mw239 (0.000981 mg/L J), LL4mw196 (0.00709 mg/L J), LL4mw197 (0.000268 mg/L J) and LL4mw198 (0.000421 mg/L J)
- Dissolved Antimony – LL1mw067 (0.00088 mg/L), LL1mw078 (0.000385 mg/L J), LL1mw084 (0.000322 mg/L J), LL1mw085 (0.000432 mg/L J), LL2mw262 (0.000315 mg/L J and 0.000422 mg/L J), LL2mw266 (0.000452 mg/L J), LL2mw267 (0.000525 mg/L J), LL3mw239 (0.00053 mg/L J) and LL4mw197 (0.000333 mg/L J)
- Dissolved Barium – LL2mw269 (0.263 mg/L)
- Dissolved Beryllium – LL1mw084 (<0.000512 mg/L J)
- Dissolved Cobalt – LL1mw081 (0.00748 mg/L J), LL1mw082 (0.00301 mg/L J), LL1mw084 (0.0295 mg/L J), LL1mw085 (0.00336 mg/L J), LL2mw266 (0.0154 mg/L J and 0.0121 mg/L J), LL2mw267 (0.00314 mg/L J) and LL3mw239 (0.00837 mg/L J)
- Dissolved Lead – LL1mw084 (0.00281 mg/L), LL2mw269 (0.000423 mg/L J) and (0.000333 mg/L J)

- Dissolved Manganese – LL1mw078 (0.0559 mg/L), LL1mw081 (2.09 mg/L), LL1mw082 (0.693 mg/L), LL1mw084 (0.306 mg/L), LL1mw085 (0.613 mg/L), LL2mw262 (0.291 mg/L and 0.263 mg/L), LL2mw263 (0.837 mg/L), LL2mw266 (0.982 mg/L and 1.12 mg/L), LL2mw267 (0.594 mg/L), LL2mw269 (1.78 mg/L), LL3mw236 (0.599 mg/L), LL3mw239 (4.413 mg/L), LL4mw196 (0.115 mg/L) and LL4mw198 (1.23 mg/L)
- Dissolved Nickel – LL1mw067 (0.0356 mg/L J), LL1mw081 (0.0114 mg/L J), LL1mw082 (0.00851 mg/L J), LL1mw084 (0.0554 mg/L), LL1mw085 (0.0135 mg/L J), LL2mw262 (0.0158 mg/L J and 0.0155 mg/L J), LL2mw266 (0.0125 mg/L J and 0.0119 mg/L J), LL3mw239 (0.0191 mg/L J) and LL4mw198 (0.044 mg/L)
- Dissolved Selenium – LL1mw084 (0.00119 mg/L), LL2mw262 (0.00111 mg/L and 0.00116 mg/L), LL2mw266 (0.000945 mg/L J), LL2mw269 (0.000842 mg/L J), LL3mw238 (0.0013 mg/L) and LL4mw196 (0.000501 mg/L J)
- Dissolved Thallium - LL1mw067 (0.000123 mg/L), LL1mw078 (0.000273 mg/L), LL1mw081 (0.000214 mg/L), LL1mw082 (0.000356 mg/L), LL1mw084 (0.00047 mg/L), LL2mw263 (0.0000555 mg/L J), LL2mw266 (0.000112mg/L and 0.000101 mg/L), LL2mw269 (0.000564 mg/L J), LL3mw236 (0.000509 mg/L), LL3mw238 (0.000377 mg/L), LL3mw239 (0.00123 mg/L), LL4mw196 (0.000649 mg/L), LL4mw197 (0.0002 mg/L) and LL4mw198 (0.000601 mg/L)
- Dissolved Zinc – LL1mw084 (0.0993 mg/L), LL2mw267 (0.0679 mg/L J) and LL4mw198 (0.115 mg/L)

All the concentrations listed above for dissolved manganese exceed the drinking water Secondary Standards. All the concentrations listed above for dissolved antimony, barium, beryllium, cobalt, lead, nickel, selenium, thallium, and zinc exceed the applicable background criteria. Arsenic concentrations exceeded the Region 9 PRG at all the well locations identified above. A dissolved arsenic concentration of 0.0104 milligrams per liter (mg/L) just exceeded the drinking water MCL of 0.01 mg/L at LL2mw263. None of the arsenic concentrations exceeded the background criteria of 0.0117 mg/L.

3.2.8.5 Pesticides and PCBs

Concentrations of the pesticide 4,4'-DDT were detected in groundwater samples above the method detection limits at the following two well locations on LL 2:

- 4,4'-DDT – LL2mw262 (0.0311 µg/L J, 0.0433 µg/L J, 0.0631 µg/L J and 0.075 µg/L J), LL2mw266 (0.022 µg/L J and 0.030 µg/L J)

No PCBs were identified above the method detection limits in any of the groundwater samples collected.

3.3 MOBILIZATION AND SITE PREPARATION

After pre-mobilization requirements were completed, equipment and personnel were mobilized to the RVAAP to prepare and organize for remedial activities. All personnel were trained and had the necessary certifications in accordance with the Safety, Health and Emergency Response

Plan (SHERP) (Shaw 2004e). The tasks for mobilization and site preparation included, but were not limited to, the following:

- Verification of utility layout as established during the pre-mobilization phase
- Review of the Activity Hazard Analysis (AHA) for the activities that were conducted for that day with site personnel in accordance with the SHERP (Shaw 2004e)
- Inspected and transported construction equipment to the site
- Preparation of lay down and parking areas to receive field trailers, heavy equipment, personal vehicles, and miscellaneous materials and supplies
- Installation of temporary facilities and set up of the on-site field laboratory
- Established traffic control and posted construction signs
- Coordination of site security with Post 1
- Permit acquisition and pre-construction notifications
- Installation of erosion and sediment (E&S) control measures in accordance with the SWPPP (Shaw 2007c)
- Clearance of vegetation in and around the excavation limits and proposed stockpile areas
- Identified and established a source of water usage for truck water on-site
- Set up of soil stockpile areas
- Set up of decontamination facilities for vehicles exiting controlled areas
- Implementation of hazardous work permits in accordance with the SHERP (Shaw 2004e) and the corresponding standard operation procedures (SOPs) included in the SHERP Appendices
- Established air, industrial hygiene, personnel, and environmental monitoring operations in accordance with the SHERP (Shaw 2004e)
- Coordination with BRACD demolition contractor

The subsequent paragraphs provide further discussion on these items.

3.3.1 Temporary Facilities

Temporary facilities included an office trailer, on-site laboratory, male and female sanitary facilities, hand wash stations, traffic control barriers and devices, and water storage facilities. These temporary facilities were placed at locations designated by the RVAAP Facilities Manager. The office trailer, on-site laboratory, and water storage tank were placed on land currently licensed to the OHARNG and prior approval from the RTLS commander was obtained. Electrical power was provided to the field trailer from the overhead electrical lines along Paris-Windham Road. Temporary power was provided to the laboratory trailer by a diesel powered generator. Communications consisted of handheld radios and cell phones.

3.3.2 Sign Placement

Shaw utilized signs and barricades to effectively communicate safety requirements, identify hazardous areas, and provide traffic directions to key locations at the RVAAP. Shaw placed these signs and barricades in visible locations and updated and maintained them as necessary.

3.2.2.1 Safety Signs

Safety signs were placed at the entrances to the hazardous work areas and identified the physical hazards of concern and the required personal protective equipment (PPE) and training needed to enter each area.

3.2.2.2 Traffic Control Signs

Signs were placed along the traffic routes and at each load line for vehicles and heavy equipment entering and exiting to ensure that traffic flowed without impedance.

3.3.3 Site Security

Once mobilization began, site security was established and coordinated with the RVAAP security and RVAAP operating contractor, PIKA, at Post 1 in accordance with Section 11.0 of the Shaw Project Coordination Plan (PCP) (Shaw 2006a). Site security was required for the protection of the general public and site workers, as well as for the security of site equipment and materials.

Shaw was required to submit a roster of all personnel and subcontractors who were working at the RVAAP to PIKA at least one week in advance. This roster was maintained and updated as necessary. Any person required to work within an AOC at the RVAAP was required to provide adequate identification and training documentation to include the following:

- Government-issued drivers license, passport, etc.
- 40-Hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations (HAZWOPER)Training
- Current 8-Hour annual OSHA HAZWOPER Refresher Training

In accordance with the Security, Emergency Response and Contingency Plan (SERCP) (Shaw 2004f), Shaw marked all work areas with one or more of the following items: high-visibility fence, roping, caution tape, signage, or temporary construction fencing. Appropriate warning signs were posted throughout the site to enhance pedestrian and driver safety in the work area and to help establish both controlled zones and site hazards as discussed in the RAWP (Shaw 2007b).

3.3.4 Erosion and Sediment Control

In accordance with the SWPPP (Shaw 2007c), E&S controls were installed prior to activities that had the potential to disturb soils and cause erosion. These controls were maintained throughout the duration of the excavation and restoration activities. Surface water was collected or diverted away from excavations by grading, berming, silt fence, hay bales or pumping. The E&S controls

will be removed and a Notice of Termination (NOT) will be submitted to the Ohio EPA only after vegetation is established and disturbed areas are stabilized.

3.3.5 Clearing and Grubbing

Shaw cleared and grubbed only vegetation that impeded or interfered with the safe and effective implementation of the design and requirements of the site work. The removed vegetation was consolidated at each load line and was placed at points nearest the excavation where it could not impact the remediation activities.

3.3.6 Source of Water Usage

Potable water and water for onsite construction use, including equipment decontamination water, was supplied by Shaw. Water for on site construction use was brought on site and stored in a designated temporary on-site storage tank. The tank was appropriately labeled as "WATER FOR CONSTRUCTION USE ONLY" to prevent inadvertent use. The source of the construction water was the Newton Falls Water Treatment Facility. Analytical data was provided for the water source and included analysis for the following;

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- PCBs
- explosives
- propellants (nitroglycerine, nitroguanidine and nitrocellulose)
- filtered TAL metals

Approval to utilize the water source was received from both the USACE and Ohio EPA project managers in accordance with Section 4.3.2.2.4 of the FSAP (SAIC 2001). A summary of analytical results for the Newton Falls Water Treatment Facility are presented in the data tables (**Table B-2**) in **Appendix B**. The Kemron laboratory report and associated evaluation report for water source are presented in **Appendix D** in the electronic attachment to this RACR.

3.3.7 Dust Management

Control measures were necessary to prevent airborne releases of dust during earth moving activities. The primary dust control measure was the application of a water spray to exposed soils. Shaw supplied all water using a water wagon to contain water for dust suppression. Water was sprayed on temporary soil piles, excavations, and re-vegetation areas. Only potable water obtained from the Newton Falls Water Treatment Facility was used for dust control. Water was only applied to prevent dust emissions as best as possible and no runoff or areas of standing water were created.

All contaminated soils were covered during storage, wetted as required, and covered during transport to prevent windblown conditions. Work areas that showed potential release of dust were reported to the Shaw Field Superintendent, who ensured that the water was sprayed on the

area to eliminate the potential for dust problems. If necessary, the work area was reduced or work was stopped until the dust was controlled.

Visual and real-time monitoring for dust and COCs was performed in accordance with the requirements of Section 8.0 of the SHERP (Shaw 2004e). Real-time monitoring for dust was performed using Mini-Ram® dust monitors that were strategically placed down-wind from the areas of excavation. Time-integrated air sampling was performed during activities at locations identified in the SHERP Addendum (Shaw 2007d) that had the potential to expose workers to concentrations that may exceed established permissible exposure limits and threshold limit values (PEL/TLV) for target compounds.

3.3.8 Protection of Existing Monitoring Wells

Prior to commencing construction activities at each load line, Shaw identified existing monitoring wells that had the potential to be impacted by its construction activities. Construction fencing was placed around the monitoring well locations to provide a visual reminder to workers and vehicle and equipment operators to maintain a safe working distance to prevent damage to the wells.

3.4 EXCAVATION

The duration of excavation activities was from August to November 2007 and proceeded as identified in the RAWP (Shaw 2007b). A total of 11,241 tons of contaminated soil and dry sediments were removed from 119 locations and disposed off-site as part of the Shaw remedial action at LLs 1-4. A total of 1,752 tons and 9,489 tons of soil and sediment were disposed as PCB soil and non-hazardous soil, respectively. The maximum depth of excavation was to 3 feet bgs; however, most excavations were typically to 2 feet bgs. The quantities of soils removed per load line are included in **Table 3-1**. Construction As-Built Drawings are presented in **Appendix A** and include the areas of soil and dry sediment removal at LLs 1-4.

Table 3-1
Excavated Soil Volumes at Load Lines 1 - 4

Load Line	PCB Soils (Tons)	Non-Hazardous Soils (Tons)
1	539	3126
2	320	2617
3	893	2538
4	0	1208
Totals:	**1752**	**9489**

Notes:
PCB – Polychlorinated biphenyl

3.4.1 Designation of Work Zones Boundaries

Prior to initiating excavation activities, Shaw established the work zone boundaries by the placement of barrier fences and the appropriate signage. The work zones were living boundaries and the size and configuration of these work zones increased or decreased based upon conditions encountered in the field.

3.4.2 Soil Excavation at all Load Lines

Excavation of the contaminated soils and dry sediments typically proceeded in the following sequence and methodology:

1. The corners of the excavation design limits identified in the RAWP (Shaw 2007b) load line excavation drawings were surveyed utilizing a Trimble GeoXHTM 2005 Series Handheld Global Positioning System (GPS) with an accuracy determination capable of within one foot and staked.
2. Initially, an approximate 20-foot by 20-foot area was excavated from the area of highest COC concentration and moved outward from the assumed source location.
3. After reaching the design limit of contamination or removal of "hot spot" areas, field test kits and/or screening equipment for the applicable COCs were implemented as an initial check to determine whether all contaminated soils were removed. Collection and analysis of field screen samples is discussed in **Section 3.5**.
4. If the field test result(s) indicated that contaminated soils still remained, excavation at that location continued until the field test result(s) specified that contaminated soils had been removed to below the cleanup goals.
5. Once the field test results identified that the contaminated soils had been removed, multi-increment samples were collected from the completed excavations for off-site processing and confirmatory laboratory analysis to verify that contaminated soil above the clean-up criteria was removed in accordance with cleanup goals. Multi-increment confirmatory sample process and analysis is discussed in **Section 3.6**.
6. Excavated material was stored temporarily on-site at designated stockpile locations at each load line. The soils were placed accordingly in stockpiles based on the COCs within the excavation. At the end of each workday the stockpiles were covered and secured prior to leaving the site.
7. Once received from the laboratory, confirmatory analytical results were reviewed by the Shaw Project Chemist and submitted to the USACE and Ohio EPA project managers for approval prior to backfilling the excavations. A discussion of the analytical results for the multi-increment samples is presented in **Section 3.6**.
8. Once approval to backfill was given, Shaw collected an as-built survey of the excavation area using the aforementioned GPS in Step 1. The excavation was then backfilled with clean fill from an approved off-site source. Site restoration activities following backfill of the excavations are discussed in **Section 3.8**.

3.4.3 MEC Oversight during Excavation Activities

As part of remediation activities at LLs 1-4, Shaw MEC personnel were assigned to observe the preparation of the work areas and soil excavation. The MEC personnel were responsible for inspecting excavated soils for the presence of propellants, identifying items suspected of being propellant nodules, and instructing Shaw field crew personnel as to how excavation activities would proceed so as to ensure the propellant material could be readily segregated for disposal. If MEC was encountered, direction of the excavation was to be guided by the MEC personnel until it was apparent that the MEC had been adequately removed.

3.5 FIELD SCREEN SAMPLING

As discussed in Step 3 of **Section 3.4.2**, soil samples were collected upon reaching the design limit of contamination or removal of "hot spot" areas and were analyzed in the Shaw on-site field laboratory using test kits and/or screening equipment for the applicable COCs. The field screen results were used as a screening tool to assess its ability in guiding remediation.

3.5.1 Sample Collection

Unlike confirmatory sampling that consisted of multi-increment sampling for the entire excavation area, field screen samples were collected at discrete locations along the excavation floors and walls. All field samples were collected from the desired depth (0 to 1 foot) and handled with disposal trowels and glass jars (for compositing and homogenizing samples).

3.5.2 Sample Analysis

The field screening and sampling methods are listed in **Table 3-2** for the COCs encountered as part of the remedial action at LLs 1-4.

Table 3-2
Field Screening Methods for COCs

COC	Field Screening Method	Material Specification
Inorganics (Aluminum, Antimony, Arsenic, Chromium, Lead and Manganese)	Multi-Source XRF analyzer (SW-846 Method 6200)	Innov-X Systems XRF Metals Analyzer
TNT and RDX	Field Colorimetric Analysis (RVAAP SOP)	TNT/RDX Ensys® Soil Test Kit from Strategic Diagnostics Inc.
PCBs	Immunoassay Test Kit (SW-846 Method 4020)	PCB Ensys® Soil Test Kit from Strategic Diagnostics Inc.
	GC-ECD	Hewlard Packard 5890 GC w/ ECD

Notes:
COC – Chemical of Concern
XRF – X-Ray Fluorescence
TNT – Trinitrotoluene
RDX – Cyclonite
RVAAP – Ravenna Army Ammunition Plant
SOP – Standard Operating Procedure
PCBs – Polychlorinated Biphenyls
GC – Gas Chromatograph
ECD – Electron Capture Detector

3.5.3 Field Quality Control Sampling Procedures

At a minimum, field QC sampling procedures included the collection of duplicate samples at a frequency of one per 10 samples collected or as otherwise specified by the field screen method vendor.

3.5.4 Summary of Field Screen Results

On-site field screening was performed for metals, PCBs, and the explosives TNT and RDX prior to collecting the multi-increment samples for off-site confirmatory analysis. In general, the results of the field screen analyses for metals and explosives worked well to guide confirmatory multi-increment sampling to produce results below cleanup goals with the exception of three multi-increment confirmatory sample locations (LL2ss-049-cs, LL3ss-072-cs and LL4ss-108-cs) for metals and one confirmatory sample location (LL1ss-038-cs) for TNT. The field screen results using the Ensys® PCB Soil Test System were not as favorable as for the metals and explosives and tended to provide continuous suspect positive results.

3.5.4.1 PCB Field Screening

Field determinations of PCBs in soil samples were initially performed through implementation of colorimetric analyses using the PCB Ensys® Soil Test System. This is a pass/fail test and the determination of PCBs concentration in the sample was determined by reading with a spectrophotometer. The color of the sample was compared to the reference standard provided with the field kit.

As mentioned previously, the field screen results for the PCB Ensys® Soil Test System continuously provided suspect positive results for PCBs. In order to provide an adequate comparison of the PCB field screen test kits to actual concentrations in the soils, Shaw submitted a pre-confirmation sample for laboratory analysis. The PCB field screen result indicated a concentration in the soil that was above the applicable cleanup goal; whereas, the laboratory result confirmed that the result was actually well below the cleanup goal, thus reducing the confidence level the PCB test kits were providing.

As a second alternative for evaluating PCBs in soil, Shaw utilized an on-site gas chromatograph (GC) with an electron capture detector (ECD). The ECD is an ultra sensitive GC that will only sense those substances that it is electron capturing, and is especially sensitive to halogens that contain chlorine elements such as PCBs. Through use of the GC-ECD, field screen results produced valid representation of PCB concentrations with a success rate of greater than 93%. Only one confirmatory sample (LL1ss-029-cs) of the 15 submitted for laboratory analysis for PCBs reported an exceedance of the cleanup goal.

3.5.4.2 TNT and RDX Field Screening

Field determinations of TNT and RDX in soil samples were performed through implementation of colorimetric analyses using the TNT or RDX Ensys® Soil Test System. As with the PCB kits this is a pass/fail test. This test system provides the materials in pre-measured and pre-packaged form eliminating labor intensive procedures of reagent preparation. The working range of the field test for TNT and RDX is 2 to 40 mg/kg. This range is several orders of magnitude below

the RVAAP cleanup criteria for TNT (1,646 mg/L) and RDX (838 mg/L). This test system is the only screening method that has been approved for use at the RVAAP by the Ohio EPA.

Based on the evaluation of field and fixed-base laboratory results, the field explosives screening method provided a valid representation of the presence or absence of TNT and RDX. A total of 15 multi-increment samples, including a duplicate, were submitted for laboratory analysis for TNT. Only one location (LL1ss-038-cs) exceeded the cleanup goal yielding a greater than 93% success rate for the test kit screening procedure. Four multi-increment samples were submitted for RDX and the results for all four samples were below the cleanup goal, yielding a 100% success rate.

3.5.4.3 Inorganics Field Screening

The majority of the remediation areas at LLs 1-4 were associated with elevated metals above cleanup goals. The inorganic COCs at LLs 1-4 consisted of aluminum, antimony, arsenic, hexavalent chromium, lead, and manganese. Manganese, lead and arsenic represented the majority of the inorganic COCs. Ex situ field screening for the inorganic COCs was performed using an Innov-X Systems X-Ray Fluorescence (XRF) instrument.

XRF to ICP Correlation Results

Prior to collecting the first confirmatory multi-increment samples, Shaw attempted to establish a correlation for the primary inorganic COCs (manganese, arsenic, and lead) between the XRF and the confirmatory laboratory results obtained by Inductively Coupled Plasma (ICP). The purpose of the correlation was to see if the XRF technique would produce results comparable to the ICP laboratory methods. If the XRF and ICP laboratory methods produced comparable results, the XRF method could be considered reliable in rapidly determining the extent of contamination before collecting confirmatory samples.

Shaw submitted a total of 15 discrete samples, including two duplicate samples, from the initial excavation areas at LLs 1 and 4 and analyzed them using the XRF. Split samples were then submitted to the off-site laboratory using the ICP analysis. The field screening samples were directly comparable to the confirmatory laboratory samples because the field screening and laboratory samples were the same homogenized source material. Differences between the ex situ field XRF and the laboratory results primarily reflected differences in the two methods used on the same material.

During past activities at the RVAAP, Shaw used a correlation percentage of less than 30% difference as a solid indicator of reliable results between the XRF and ICP methods. This percent difference provided positive results for those past activities and was considered a viable comparison for the ongoing remediation activities. **Table 3-3** provides a summary of correlation results for the XRF and ICP methods for manganese, lead, and arsenic.

Table 3-3
Correlation Results for XRF vs. ICP

Summary	Correlation XRF vs. ICP	
	>30%	<30%
Manganese	38%	62%
Lead	54%	46%
Arsenic*	43%	57%

Notes:
*Based on limited data (only 7 samples submitted for correlation). See further explanation below under *Arsenic*.

Manganese

Of the 15 sample results or decision points used to make the correlation for manganese, eight (8) of the samples had less than a 30% difference between the XRF and ICP results. Based on this information, it was determined that the XRF provided relatively accurate results for manganese if screened to the more conservative surface soil cleanup goal (1,800 mg/kg). This is evidenced by the fact that of the 72 confirmatory samples submitted for laboratory analysis for manganese, only three samples had detected results above the applicable cleanup goal. That equates to a 96% success rate for field screening for manganese using the XRF.

Lead

Initially there was less confidence associated with field screening lead to the cleanup goal (1,995 mg/kg) using the XRF as more than 50% of correlation samples results (7) indicated greater than a 30% difference between the XRF and ICP results. However, confidence in the XRF for lead screening increased through the remediation activities as confirmatory results continuously provided positive results. In all, a total of 16 multi-increment samples were submitted for laboratory lead analysis and all results were below the applicable cleanup goal, yielding a 100% success rate.

Arsenic

Due to the consistently low XRF limit of detection there was limited data to perform a meaningful data analysis for arsenic as part of the initial correlation activities. A total of seven (7) samples were submitted for laboratory analysis for arsenic, and four of the samples (57%) yielded results below a 30% difference. As with lead, confidence in the XRF for arsenic screening to the cleanup goal (31 mg/kg) increased as remediation activities progressed. A total of 20 multi-increment samples were submitted for laboratory arsenic analysis and only one result exceeded the applicable cleanup goal, yielding 95% success rate.

Excavations with Previously Unidentified COCs.

The XRF analyzer is unable to provide "selective" analysis for individual metal parameters and generally scans for all inorganics during each analysis run. In several instances the XRF provided data that indicated inorganic COC(s) not previously identified at a discrete excavation area as exceeding the applicable cleanup goal(s). This was not a typical occurrence since these additional COCs were only encountered at six different excavation locations. Nevertheless, the additional COCs identified included manganese at one location (LL2ss-062-cs), arsenic at three locations (LL2ss-062-cs, LL3ss-092-cs, and LL3ss-096-cs) and potentially hexavalent chromium at three locations (LL1ss-012-cs, LL3ss-072-cs, and LL3ss-103-cs). Since the XRF is not

capable of analyzing specifically for hexavalent chromium, total chromium was used as the screening contaminant for this COC.

As a proactive measure, the Shaw field crews continued excavation for all inorganic COCs, including those not previously identified, that were found to exceed cleanup goals at each of the discrete excavations. Excavation of soils continued until the XRF field screen results identified all inorganic COCs to be below the applicable cleanup goal levels. The locations where previously unidentified COCs were detected and removed are presented in the data summary tables (**Table B-3)** in **Appendix B**.

3.6 CONFIRMATORY SAMPLING

Confirmatory samples were collected from each of the excavation areas using multi-increment sampling in accordance with the Guidance for Multi-Increment Sampling procedures included in Appendix A of the Shaw FSP (Shaw 2006b).

3.6.1 Sample Collection

As indicated in **Section 3.4.2**, excavation began in the area of the highest COC concentration(s) previously detected and moved outward from the assumed source location. Once field screen test results identified an excavation area to be below the applicable cleanup goals for the COC(s), multi-increment samples were collected from a pre-determined number of stratified random sample locations from the excavation area using disposable sample trowels. The random samples were placed into a clean plastic lined bucket and combined to make a single sample. The sample was homogenized by manual mixing and a maximum of 1 kilogram (kg) of the sample was removed from the plastic bag and placed into a labeled pre-cleaned container. Each multi-increment sample consisted of random samples combined from the floor and sidewalls of the excavation areas. In general, 20 random samples were collected from excavation areas less than 100 square feet (ft^2) and 30 random samples were collected from excavation areas greater than 100 ft^2. For the most part, excavations were greater than 100 ft^2 and 30 random samples were collected from the majority of the excavations. The excavation dimensions and locations at which the random samples were collected for the multi-increment sample were noted by the Shaw field sample technicians and documented in the field log sheets presented in **Appendix E** in the electronic attachment to this RACR. It should be noted that the reduction of the sample volume to 1 kg prior to shipment deviated from the methodology outlined in the RAWP but was approved by USACE and the Ohio EPA prior to implementation in the field.

The sample containers were secured, packaged, and shipped to the designated off-site laboratory for drying, processing, and analysis, along with the appropriate chain-of-custody documentation as outlined in the FSP (Shaw 2006b). The off-site laboratories used by Shaw as part of the remediation of soils at LLs 1-4 were approved by USACE and the Ohio EPA prior to shipment of the samples.

3.6.2 Sample Processing and Analysis

In all, a total of 125 multi-increment samples, including duplicate and MS/MSD duplicate samples, were submitted for analysis at either of the two off-site laboratories contracted by Shaw: Test America in North Canton, Ohio and Kemron in Marietta, Ohio. Shaw contracted

both laboratories to ensure adequate turn-around-times were achieved in conjunction with Shaw's aggressive excavation schedule. Both laboratories performed analyses for benzo(a)pyrene, 2,4,6-TNT, and inorganics. In addition to these analyses, Test America analyzed solely for propellants and PCBs and RDX samples were analyzed only by Kemron. Once dried and processed by the designated off-site laboratory, each multi-increment sample was analyzed for the COC(s) identified for the discrete area from which the multi-increment sample was collected. The COCs analyzed and the applicable analytical methods and sample frequency for multi-increment and QC samples submitted for laboratory analysis are presented in **Table 3-4**.

3.6.3 Field Quality Control Sampling Procedures

As part of the multi-increment sampling activities, Shaw collected two types of QC samples consisting of sample duplicates and MS/MSDs in accordance with the Quality Assurance Project Plan (QAPP; Shaw 2006c). Duplicate samples, were collected at a minimum frequency of 10% of the field samples. MS/MSD duplicates, MS/MD in the case of inorganics, were collected at a minimum frequency of 5%. Since the multi-increment samples were collected using disposable equipment and materials, no equipment rinsate blanks were submitted for analysis. For Quality Assurance (QA) purposes, the Ohio EPA was periodically on-site to collect split samples from the multi-increment samples collected by the Shaw field team. The QA samples were shipped by the Ohio EPA and analyzed separately by the Ohio EPA's contracted laboratory. Samples collected to fulfill the field QC requirements for multi-increment sampling are included in **Table 3-4**.

3.6.4 Summary of Sample Results

The confirmatory sample results verify that contaminated soils and dry sediment have been removed from the identified discrete areas at LLs 1-4 to below the applicable cleanup goals. In all there were a total of 119 discrete areas of contamination among the four load lines that required soil or sediment removal; however, there were only 101 multi-increment samples. Some of the discrete areas were combined into one multi-increment sample area due to one of the following reasons:

1. The discrete areas were included in design drawings presented in the RAWP (Shaw 2007b) as one multi-increment sample location due to the close proximity of the areas of contamination and similar COC(s)
2. Field screen and/or initial confirmatory results required additional excavation that resulted in the combining of two or more excavation areas

Construction As-Built Drawings are presented in **Appendix A** and include the areas of multi-increment confirmatory sample locations. A summary of the results for the multi-increment samples in relation to the cleanup goals are presented in the data summary tables (**Table B-3**) in **Appendix B**. The laboratory reports and associated data evaluation reports for the multi-increment samples are presented in **Appendix F** included as an electronic attachment to this RACR.

Table 3-4
Sample Frequency for Multi-Increment Soil Samples

Contaminant of Concern	Analytical Method	Number of Samples		
		Multi-Increment	Duplicate	MS/MSD
PCBs				
Aroclor-1254	3540/8082	13	2	1
SVOCs				
Benzo(a)pyrene	3540/8270C	2	1	1
Explosives				
2,4,6-TNT	3540/8330	15	2	1
RDX	3540/8330	5	2	1
Propellants				
Nitroguanidine	3540/8330	5	1	1
Nitroglycerine	3540/8330	5	1	1
Nitrocellulose	MCAWW 353.2	5	1	1
Inorganics				
Aluminum	6010B	8	1	1
Antimony	6010B	2	1	1
Arsenic	6010B	16	3	2
Hexavalent Chromium	6010B	7	3	2
Lead	6010B	15	1	1
Manganese	6010B	68	5	3
	Total:	**163**	**24**	**16**

Notes:
MS/MSD – Matrix Spike/Matrix Spike Duplicate
PCBs – Polychlorinated biphenyls
SVOCs – Semi-volatile organic compounds
TNT – Trinitrotoluene
RDX – Cyclonite
MCAWW – Method for Chemical Analysis of Water and Waste

It should be noted that **Table B-3** and the reference to sample locations in this report includes a slight deviation in the sample nomenclature from the sample location names identified in the laboratory reports for the multi-increment samples in **Appendix F**. Although, the naming convention for the sample locations follows the approved FSP (Shaw 2006b), the acronym "-cs" has been added at the end of the sample location names on **Table B-3**. The reasoning for this is to identify the samples as "confirmation samples" and ensure that the sample numbers to be input into the Ravenna Environmental Information Management System (REIMS) data base are unique to the Shaw remediation activities. A discussion of results for each of the load lines is presented in the following subsections.

3.6.4.1 Load Line 1

Load Line 1 was the most contaminated of the four load lines as evidenced by the 51 discrete areas (LL1ss-001-cs through -046-cs and -115-cs through -119-cs) that required excavation (**Figure A-1**). Many of the larger excavations that occurred during the remedial action were at LL 1 and resulted in the combining of discrete excavation areas for one multi-increment sample. There were a total of 44 multi-increment samples collected at LL 1 and the COCs included Aroclor-1254, benzo(a)pyrene, TNT, RDX, propellants, and the metals: aluminum, antimony, arsenic, hexavalent chromium, lead, and manganese.

Laboratory results for the confirmatory multi-increment samples indicate that COCs have been reduced to below the cleanup goals at all excavation areas at LL 1 with the exception of Aroclor-1254 at sample location LL1ss-029-cs. The Aroclor-1254 concentration at this location is 54.3 mg/kg and is less than an order of magnitude above the cleanup goal of 35 mg/kg. This sample location is situated adjacent to the northeast of the melt pour building CB-4A and is surrounded by the concrete building foundation and bedrock outcrops. The base of the excavation consists of ledge and cannot be advanced any further using the conventional methods specified for this scope of work. The Ohio EPA concurred that no additional soils could be removed from this excavation and that the COC in soils at this location had been removed to the best extent possible with only isolated residual soils or a limited quantity remaining on top of bedrock (Ohio EPA 2008b).

One sample location, LL1ss-038-cs, required re-excavation due to concentrations of TNT at 2,010 mg/kg and 1,790 mg/kg in the multi-increment sample and its duplicate, respectively. These concentrations were above the cleanup goal of 1,648 mg/kg for TNT. After additional soils were removed, a follow-up multi-increment sample was submitted for laboratory analysis and the TNT result was below the laboratory detection limit indicating that any remaining impacted soils had been adequately removed.

3.6.4.2 Load Line 2

There were 24 discrete areas (LL2ss-047-cs through -070-cs) at LL 2 that required excavation (**Figure A-2**). As with LL 1, several of the discrete areas were combined to form one multi-increment sample resulting in a total of 22 multi-increment samples that were collected. The COCs at LL 2 consisted of Aroclor-1254; TNT; RDX; and the metals aluminum, antimony, arsenic, hexavalent chromium, lead, and manganese. One excavation location, LL2ss-049-cs, did require re-excavation due to an arsenic concentration of 76.3 mg/kg that was above the cleanup goal of 31 mg/kg. After the removal of the additional soils, a follow-up multi-increment sample was submitted for analysis for arsenic and the result was well below the applicable cleanup goal at a concentration of 14.1 mg/kg. Laboratory results for all other confirmatory multi-increment samples collected at LL 2 indicate that COCs have been removed to below cleanup goals at all excavation areas.

3.6.4.3 Load Line 3

There were a total of 35 discrete areas (LL3ss-071-cs through -105-cs) at LL 3 that required excavation (**Figure A-3**). Several of the discrete excavation areas were expanded based on field screen results, and due to the relative close proximity to other discrete areas, the excavations were combined into a single multi-increment sample. As a result, a total of 27 multi-increment samples were collected at LL 3. The COCs at LL 3 consisted of Aroclor-1254; benzo(a)pyrene; TNT; and the metals aluminum, antimony, arsenic, hexavalent chromium, lead, and manganese. Laboratory results for the confirmatory multi-increment samples collected at LL 3 indicate that COCs have been removed to below cleanup goals at all excavation areas. One excavation location, LL1ss-072-cs, did require re-excavation due to manganese concentrations of 3,830 mg/kg and 2,000 mg/kg in the multi-increment sample and its duplicate, respectively. These concentrations exceeded the cleanup goal of 1,800 mg/kg for manganese in surface soils (0 to 1 foot). Once the additional soils were removed, the excavation was resampled and manganese was found to be below the cleanup goal.

3.6.4.4 Load Line 4

At LL 4, there were a total of nine (9) discrete areas (LL4ss-106-cs through -114-cs) that required excavation (**Figure A-4**). The COCs at LL 4 consisted of Aroclor-1254 and the metals aluminum, lead, and manganese. One excavation location, LL4ss-108-cs, did require re-excavation due to a manganese concentration of 5,300 mg/kg that was above the cleanup goal of 1,800 mg/kg for manganese in surface soils (0 to 1 foot). After the removal of the additional soils, a follow-up multi-increment sample was submitted for analysis for manganese and the result was below the applicable cleanup goal. All the laboratory results for the confirmatory multi-increment samples collected at LL 4 indicate that COCs have been removed to below cleanup goals at all excavation areas.

3.7 DECONTAMINATION

During excavation activities at each load line and loading of trucks for off-site disposal of soils, the heavy equipment and trucks were thoroughly inspected and decontaminated to remove all loose soil from buckets, tracks, and undercarriage prior to leaving the controlled area. Decontamination methods for heavy equipment between excavation areas and trucks during soil load out consisted of dry removal of soils and debris and wet brush washing depending on the extent of residual soils on the equipment. Final decontamination of the heavy equipment following the completion of excavation activities consisted of steam cleaning. Fabricated decontamination pads capable of collecting wash water, including overspray, and loose soil were mobilized to the site prior to construction activities to avoid cross-contamination of clean areas during decontamination procedures and to collect decontamination liquids. As discussed in **Section 3.3.6**, Shaw provided all water for construction use, including decontamination of heavy equipment and vehicles. All decontamination liquids generated were pumped into and stored in 55-gallon drums for characterization and off-site disposal. Disposal of this waste liquid is discussed in **Section 4.0**.

3.8 SITE RESTORATION

Backfill and restoration was performed at each excavation area after approval of the multi-increment laboratory data by USACE and the Ohio EPA. Backfill activities began in October 2007 after the receipt and approval of the initial multi-increment samples. Site restoration was performed to return the disturbed areas to prior conditions and was "replace-in-kind".

Restoration included backfilling with clean soil from Route 5 Sand & Gravel, an off-site source that passed the chemical and physical requirements outlined in the RVAAP facility-wide plans. Due to the relative shallow depths of the excavations, the backfill was directly offloaded into the excavation or placed by the Shaw excavator. The backfill material was compacted by the excavator bucket or tracks. There were no changes to site elevation or drainage features. Once backfilled, an approved seed mix was applied, weather permitting, to the restored area.

3.8.1 Grass Seed

Shaw coordinated the required seed mixes with the RTLS Environmental Supervisor, Mr. Tim Morgan, prior to mobilizing. Re-vegetation of disturbed areas was conducted in accordance with the requirements of the RTLS Integrated Natural Resources Management Plan (INRMP) as

discussed in the RAWP (Shaw 2007b). Shaw's intrusive activities continued past the normal growing season for the required seed mixtures; however, Shaw applied the seed mixtures for the completed areas as best possible. Only native species as identified in the INRMP were applied. At a minimum, annual rye was placed to provide a quick temporary cover at the restored areas. The annual rye was mixed with other more permanent species to provide long-term cover once the annual rye died off. No non-natives species were introduced. Since most of the excavation areas have not yet re-established vegetation, Shaw has maintained E&S controls consisting of silt fence and diversion barriers for rainwater run-on. Areas where the seed was applied were covered with a minimum of three bales of straw per every 1,000 ft^2 of disturbed area.

3.8.2 Borrow Source Material

Prior to bringing the material to the RVAAP, Shaw collected a borrow source sample at the exact location at the source where the soils were to be taken from. The sample was submitted to Kemron for the full suite of analytical parameters that included VOCs, SVOCs, herbicides/pesticides, PCBs, inorganics/mercury, and pH. Analytical results indicated all results were either non-detect or below the applicable background concentrations with the exception of arsenic at 17.8 mg/kg. This concentration was below the applicable cleanup goal of 31 mg/kg for arsenic and Ohio EPA concurred that the metal concentration was naturally occurring.

Shaw collected an additional sample prior to the 5,000 cubic yard interval of material to be brought on-site from the Route 5 Sand & Gravel source. The sample was again submitted to Kemron for the full suite of analytical parameters as for the initial sample. All results for this second sample were either non-detect or below the applicable background concentrations, consistent with the initial sample from the backfill source.

In all, a total of 9,772 tons (approximately 7,000 cubic yards) of borrow source material was brought on-site from Route 5 Sand & Gravel. Shaw regularly inspected the condition of the soils that were brought on-site to ensure the material was free of debris, large stones or leaching water.

A summary of analytical results for the borrow source material are presented in the data tables (**Table B-4**) in **Appendix B**. The laboratory reports and associated data evaluation reports are presented in **Appendix G** included as an electronic attachment to this RACR.

3.9 COORDINATION WITH BRAC DEMOLITION CONTRACTOR

Shaw's work was performed concurrently with the demolition of the remaining buildings at LLs 2-4. Shaw coordinated its activities with PIKA, the BRAC demolition contractor, to minimize potential disturbance to the proposed remediation areas by the demolition activities prior to excavation. Minor schedule interruptions associated with the demolition activities were encountered by Shaw due to limited access to the various load lines during demolition and delays in debris removal, in particular LL 4. It is expected that proposed future BRAC demolition activities of the remaining building slabs and foundations will disturb the areas previously backfilled and seeded by Shaw, and restoration of these areas following the demolition activities will be addressed by the Army.

4.0 WASTE MANAGEMENT AND TRANSPORTATION

Two waste streams were generated during the remediation of soils and dry sediments at LLs 1-4: solid and liquid wastes. Waste characterization determined whether a waste was hazardous or non-hazardous and dictated the disposal option and facility where the waste was disposed. All waste disposal and transport was performed in accordance with sampling requirements of the FSP (Shaw 2006b) and the handling and management requirements of the Waste Minimization and Management Plan (WMMP) (Shaw 2006g), respectively.

4.1 SOLID WASTES

Solid wastes generated as part of this removal action consisted of contaminated soils and dry sediments and expendable wastes such as personal protective equipment (PPE) (i.e., sample gloves and tyvek) and sampling equipment. Contaminated materials removed from the excavations were stockpiled on-site. All handling of contaminated and solid waste materials was performed in accordance with the WMMP (Shaw 2006g).

4.1.1 Stockpiling at the Site

Excavated soils were stored on-site temporarily prior to transporting to the approved disposal facilities. Excavated soils were stockpiled based on the anticipated COCs previously identified for each area of contamination as soils with different COCs had the potential to require alternate disposal facilities. Essentially, soils were segregated into two categories: PCB soils and non-hazardous soils. Soils with known PCB concentrations greater than 40 mg/kg were automatically placed into PCB soil stockpiles based on disposal facility requirements. Soil stockpiles were generated at maximum volumes of 1,000 cubic yards in order to ensure adequate waste characterization in accordance with the FSP (Shaw 2006b).

When possible, stockpiles were staged on existing asphalt or concrete to minimize any potential impact to underlying natural materials. At a minimum, stockpiles were staged on two layers of 10-mil poly liner and covered with a minimum of one-layer of 10-mil poly. The covers were secured with sand bags to prevent wind damage to the cover and stockpile.

Storm water controls for the protection of the stockpile areas were performed in accordance with the SWPPP (Shaw 2007c). Soil berms were placed around the perimeter of the stockpiles to prevent storm water runoff or run-on.

Stockpiles were inspected daily to ensure they were properly secured and the covers were repaired or replaced in order to maintain integrity of the protection of the stockpiled soils in accordance with the WMMP (Shaw 2006g). Items found to be deficient were corrected immediately to prevent potential release of stockpiled soil or associated contaminants in the soils.

4.1.2 Stockpile Sampling

The soil stockpiles were sampled and analyzed for waste disposal parameters in accordance with the requirements of the FSP (Shaw 2006b) and the WMMP (Shaw 2006g); however, disposal

facility requirements ultimately dictated the sample frequency and analyses performed for the soil stockpiles. Waste samples were collected at a minimum of one sample per stockpile which translated into a frequency of greater than one sample per 700 cubic yards of material excavated. In all, a total of 13 waste characterization samples were analyzed for the following parameters:

- Toxicity Characteristic Leaching Procedure (TCLP) analysis for inorganics, mercury, pesticides, herbicides, and SVOCs
- PCBs
- Nitroaromatics and nitramines
- RCRA characteristics (reactive cyanide and sulfides, pH, and ignitability)

Analytical results for all the waste characterization samples collected from the excavated soil stockpiles did not identify any of the soils to be hazardous. No local disposal facilities were permitted to accept soils with known PCB concentrations greater than 50 mg/kg; therefore, in order to be conservative, the soil stockpiles with the known concentrations of PCBs greater than 40 mg/kg were shipped to an out-of-state facility that was permitted to accept the material.

A summary of waste characterization analytical results for the soil stockpiles are presented in the data tables (**Table B-5**) in **Appendix B**. The laboratory reports and associated data evaluation reports for waste characterization samples are in **Appendix H** included as an electronic attachment to this RACR.

4.1.3 Load-Out to the Disposal Facility

Stockpiled soils and dry sediments were loaded into trucks in designated areas only with adequate spill control measures, including equipment to catch and contain spillage, and equipment necessary to recover spillage and clean the area. Dust control measures were implemented as necessary during loading. Disposable sheeting was placed on the ground around trucks to catch any incidental spillage during loading. Before loading, trucks were inspected and surveyed for damage and residual contamination by Shaw personnel.

Materials were loaded into each transport vehicle in a uniform manner and distributed over the full length of the vehicle. Once loading was complete, the truck was inspected from the ground for loose or escaping soil or leaching water before leaving the load-out area. The load was then covered with a tarp or other suitable covering using an automated pull-over mechanism from within the truck cab or a manual hand-crank. Only authorized personnel performed the inspection and all truck drivers were directed to remain in their vehicle until the vehicle had been properly decontaminated and had left the load-out area. Vehicle tires were brushed prior to leaving the load-out area to minimize tracking of soils to other areas within and outside each load line. The soil transportation vehicles were tare and weighed before and after soils loading, respectively. The trucks were weighed at a nearby off-site truck-scale at Route 5 Sand & Gravel, located approximately one mile west of the RVAAP.

Federal Department of Transportation (DOT) regulations were followed during transport activities. The soil was DOT classified based on direct sample results or on previously collected data. The labeling requirements outlined in the WMMP (Shaw 2006g) were followed to meet all

appropriate placards, waste manifests, bill of lading, and letter of approval requirements to transport contaminated soil from the RVAAP.

4.2 LIQUID WASTES

Liquid waste consisted of laboratory waste solvents associated with on-site field screen activities, monitoring well development and purge liquids, equipment decontamination fluids, and precipitation accumulated in protected excavation areas. Liquid wastes were segregated by waste streams.

4.2.1 Contained Liquids for Off-Site Disposal

The generated laboratory waste was collected in a 5-gallon sealed plastic bucket. The monitoring well development and purge water and equipment decontamination liquids were collected and pumped directly into labeled, DOT-approved 55-gallon drums. The containers were properly labeled to indicate the dates generated and their contents and were stored at the RVAAP drum storage area at Building 1036.

All liquids wastes were disposed at an approved off-site disposal facility. The laboratory waste pail was not sampled since it contained solvents of known concentrations and was pre-determined to be a hazardous waste. The drums of purged groundwater and decontamination liquids were analyzed for waste characterization purposes and analytical results did not identify any of the drummed liquids as hazardous. Liquids wastes were generated and handled in accordance with the requirements of the WMMP (Shaw 2006g).

A summary of analytical results for the waste liquids generated are presented in the data tables (**Table B-6** and **B-7**) in **Appendix B**. The laboratory report and associated evaluation report for the waste liquids are presented in **Appendix I** included as an electronic attachment to this RACR.

4.2.1 Excavation Storm Water

In general, any precipitation that collected in excavations were allowed to dissipate prior to continuing excavation or backfilling with the exception of one excavation location, LL2ss-066-cs, in LL 2. Precipitation had continued to collect in this excavation over several large rain events. Due to the clay nature of the soils and continuing precipitation, the collected storm water was not dissipating and was encroaching upon the project schedule. Any ground surface discharges are subject to strict state, federal, and RVAAP-specific discharge conditions; in order to expedite the removal of the storm water, Shaw coordinated sampling and direct discharge to ground surface with USACE, the Ohio EPA, and the RVAAP. The storm water was sampled for the COCs of concern in the excavation, TAL inorganics, in addition to explosives and SVOCs. Analytical results did not identify any contaminants above the RVAAP water quality standards and the storm water was approved for discharge directly to ground surface by the Ohio EPA, USACE, and the RVAAP.

A summary of analytical results for the storm water discharged are presented in **Table B-8 Appendix B**. The laboratory report and associated evaluation report for discharged storm water are presented in **Appendix J** in the electronic attachment to this RACR.

4.3 WASTES TRANSPORTED FOR OFF-SITE DISPOSAL

Off-site disposal facilities were selected based on waste characterization data collected from the applicable waste stream or other disposal facility, and regulatory requirements. Shipments of waste were coordinated through the RVAAP facility manager and PIKA, the RVAAP operating contractor. All records for wastes shipped for off-site disposal were maintained in accordance with the WMMP (Shaw 2004h). The waste profiles and Shaw's waste shipment tracking logs for the materials transported for off-site disposal are presented in **Appendices K** and **L** included as electronic attachments to this RACR, respectively. The waste generated, associated quantities transported for off-site disposal and the respective disposal facilities are presented in **Table 4-1**.

Table 4-1
Summary of Wastes Disposed Off-Site

Waste Material	Classification	Quantity	Disposal Facility/Location
Soils and Dry Sediments	PCB Soils	1,752 tons	EQ Wayne Disposal, Site#2 Landfill, Belleville, MI
	Non-Hazardous (Low-Level PCB Soils)	9,489 tons	Republic/Countywide Landfill East Sparta, OH
Purged Groundwater	Non-Hazardous, Non-DOT, Purge Water	2 drums	Hukill Chemical Corp. Cleveland, OH.
Equipment Decontamination Liquids	Non-Hazardous, Non-DOT, Decon Water	1 drum	
Laboratory Waste	Waste Flammable Liquids, NOS	5-gallon pail	

Notes:
PCBs – Polychlorinated biphenyls
DOT – Department of Transportation
NOS – Not Otherwise Specified

4.3.1 Soils and Dry Sediments

In all, a total of 11,241 tons of soil and dry sediments were transported for off-site disposal by 481 trucks. The soils were segregated into two different waste classifications: PCB soils and non-hazardous soils with low level PCBs. Shaw subcontracted American Waste Management Services (AWMS) to oversee all aspects of transportation and delivery of the soils and dry sediments to the allocated disposal facilities.

4.3.1.1 PCB Soils

Approximately 16% (1,752 tons) of the soils and dry sediment excavated as part of the remediation activities at LLs 1-4 were classified as "PCB soils" due to known concentrations of PCBs greater than 40 mg/kg based on previous investigations. Between November 15 and 29, 2008, a total of 71 trucks transported the PCB soils to the Environmental Quality Company

Wayne Disposal Site#2 Landfill in Belleville, Michigan, under an AWMS hazardous waste manifest. Copies of the waste manifest shipping records for the PCBs soils are presented in **Appendix M** in the electronic attachment to this RACR.

4.3.1.2 Low-Level PCB Soils

The remainder of the soils and dry sediments generated were considered to be non-hazardous with low levels of PCBs (< 40 mg/kg). Between December 4 and 21, 2007, a total of 410 truck loads of this material were transported to the Republic/Countywide Landfill in East Sparta, Ohio under an AWMS non-hazardous waste manifest. In all, 9,489 tons of non-hazardous soils were transported off-site for disposal at the Republic/Countywide Landfill. Copies of the waste manifest shipping records for the non-hazardous soils are presented in **Appendix N** included as an electronic attachment to this RACR.

4.3.2 Waste Liquids

Waste liquids contained and shipped for off-site disposal consisted of purged groundwater, equipment decontamination liquids and laboratory wastes. All the liquid wastes were shipped by Emerald Environmental Services to the Hukill Chemical Corporation in Cleveland, Ohio for treatment or disposal on January 10, 2007. The two 55-gallon drums of purged groundwater and one 55 gallon drum of decontamination liquids were shipped under a non-hazardous wastes manifest. The five gallon pail of laboratory wastes was shipped as a waste flammable liquid under a hazardous waste manifest. Copies of the waste manifest shipping records for the waste liquids are presented in **Appendix O** included as an electronic attachment to this RACR.

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5.0 PERFORMANCE STANDARDS & CONSTRUCTION QUALITY CONTROL

5.1 COMPARISON TO CLEANUP GOALS

The components of the preferred remedy, the RAO for surface soils and dry sediments and the determination of cleanup goals are outlined in **Section 2.1** and those components that were scheduled to occur that required comparison to the cleanup goals have all been implemented. Overall, the removal of soils at the proposed excavation areas at LLs 1-4 has reduced COCs to below the applicable cleanup goals with the exception of a sole Arochlor-1254 concentration of 54 mg/kg at LL1ss-029-cs. This concentration at this location exceeds the applicable cleanup goal of 35 mg/kg by less than one order of magnitude. The Ohio EPA and USACE agreed that although COCs remained in residual soils within the excavation above the applicable cleanup goal, further excavation was not possible and the extent of soil removal had been satisfied (Ohio EPA 2008b).

5.2 ASSESSMENT OF DATA QUALITY

5.2.1 Quality Assurance Project Plan

The QAPP Addendum (Shaw 2006c) was prepared by Shaw to supplement the FSP Addendum (Shaw 2006b) for the remediation of soils in LLs 1-4. The QAPP Addendum was required to document adherence to the Facility-wide QAPP in the Facility-wide Sampling and Analysis Plan (FSAP) (SAIC 2001a) and stipulate project-specific addendum requirements. The overall objectives of the QAPP Addendum are to identify procedures for sampling, chain-of-custody, laboratory analysis, instrument calibration, data reduction and reporting, internal quality control, audits, preventive maintenance, and corrective action.

5.2.2 Quality Assurance/Quality Control Procedures

The QAPP Addendum (Shaw 2006c) presents the field and laboratory QA/QC policies and procedures that were followed during the implementation of the field work and sampling activities. The purpose of the QA/QC procedures is to address the specific objectives for analytical accuracy, precision, completeness, representativeness, and comparability (SAIC 2001a).

5.2.3 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative statements that specify the quality of data required to support decisions made during investigation activities, and are based on the end uses of the data being collected (SAIC 2001a). The end use of the confirmation data collected as part of the remediation of soils and dry sediments at LLs 1-4 is to verify that COCs have been removed to below the cleanup goals in accordance with the RAO. Per the QAPP Addendum (Shaw 2006c), the contracted laboratories were required to follow the QC parameters stated in the Louisville Chemistry Guidelines (LCG; USACE 2002) and the USEPA Publication SW-846, Test Methods for Evaluation of Solid Waste (USEPA, 2004) for each chemical analyzed.

5.2.3.1 Multi-Increment Soil Data Summary

The Shaw Project Chemist performed a review of the multi-increment soil data collected during all phases of the remediation activities for completeness, consistency, and compliance with the project QA requirements. Following the review of the confirmation data packages, the Shaw Project Chemist prepared subsequent data verification reports that provided summary of findings with respect to the required analytical processes and procedures as specified in the QAPP Addendum (Shaw 2006c).

The data verification process specified in the LCG was completed in accordance with the procedures referenced in QAPP Addendum (Shaw 2006c). The verification results concluded that all required data elements were reported for each sample, and that all analyses were in accordance with respective SW-846 methods and LCG requirements. Based on the level of review completed in the verification process, there were no significant findings that impacted data usability for the intended purposes. The data verification reports for the multi-increment soil samples are included in **Appendix F** in the electronic attachment along the with the laboratory data packages.

6.0 CHRONOLOGY OF EVENTS

Section 1.0 of this report contains a brief history of facility operations, site investigations, and remedial investigations performed at LLs 1-4. A chronological summary of significant events and reports since the signing of the ROD is provided below in **Table 6-1**.

Table 6-1
Chronological Summary of Significant Events at Load Lines 1-4

Date	Event
July 2007	ROD for Remediation of Soils at Load Lines 1-4 signed
July 2007	Remedial Action Work Plan approved
July – August 2007	Baseline groundwater samples collected
August 2007	Mobilization and implementation for remediation activities at LLs 1-4
January 2008	Demobilization for remediation activities at LLs 1-4

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7.0 FINAL INSPECTION AND CERTIFICATION

7.1 REMEDIAL ACTION CONTRACT INSPECTIONS

Field inspections were performed by the on-site QC Manger using the USACE three-phase control system consisting of the preparatory, initial and follow-up inspections phases in accordance with the Quality Assurance Management Plan (QAMP; Shaw 2006d). Deficiencies observed were noted in the daily reports and corrected as soon as reasonably possible to ensure compliance with contract requirements. Representatives of the USACE, Ohio EPA, and RVAAP were on-site to inspect the remediation activities at regular intervals and conveyed any concerns or discrepancies to the on-site Shaw management for the necessary action.

7.2 HEALTH AND SAFETY

All remedial action field activities were performed in accordance with the requirements of the SHERP (Shaw 2004e) and its associated addendum (Shaw 2007d). No health and safety issues were encountered during the implementation of field activities. All personnel requiring access to the LLs 1-4 maintained current HAZWOPER certification. Daily safety briefings were held every morning and included all field personnel. Monthly project safety audits/inspections were carried out by both the on-site Shaw Safety Officer and the Shaw Project Manager or his designee.

7.3 REMEDIAL ACTION COMPLETION

On December 10, 2007, a walkthrough and inspection was performed at LLs 1-4 by members of USACE, the Ohio EPA, BRACD, Shaw, and PIKA. The purpose of the walkthrough was to review Shaw's soil removal activities at LLs 1-4 and decontamination/demolition activities that were performed simultaneously by PIKA at LLs 2-4 and to provide comment and recommendation prior to issuing a certificate of completion. On January 9, 2008, the Ohio EPA submitted a letter (Ohio EPA 2008a) to Mr. Mark Patterson, the RVAAP Facility Manager, indicating that "the physical remedial action of soil and dry sediment removal has been completed in accordance with the intents and provisions of the Interim ROD for LLs 1-4". The letter contained reservations that follow-up re-grading and seeding would be required at the LLs 1-4 excavation areas once the weather was conducive to such activities and that subsequent to these activities, a final walkthrough would be conducted.

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8.0 REFERENCES

1. Science Applications International Corporation (SAIC) 2001. Final Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio. March 2001.

2. SAIC 2003. Final Phase II Remedial Investigation Report for the Load Line 1 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. June 2003.

3. Shaw Environmental, Inc. (Shaw) 2004a. Final Project Management Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. April 2004.

4. Shaw 2004b. Final Phase II Remedial Investigation Report for Load Line 2 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. July 2004.

5. Shaw 2004c. Final Phase II Remedial Investigation Report for Load Line 3 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. July 2004.

6. Shaw 2004d. Final Phase II Remedial Investigation Report for Load Line 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. September 2004.

7. Shaw 2004e. Final Safety Health, and Emergency Response Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. October 2004.

8. Shaw 2004f. Final Security, Emergency Response, and Contingency Plan for the Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. October 2004.

9. Shaw 2005. Final Focused Feasibility Study for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. May 2005.

10. Shaw 2006a. Final Project Coordination Plan, Structural Analyses and MEC Support at Load Lines 1, 2, 3 and 4, Ravenna Army Ammunition Plant, Ravenna, Ohio. October 2006.

11. Shaw 2006b. Final Field Sampling Plan Addendum No. 1 for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

12. Shaw 2006c. Final Quality Assurance Project Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

13. Shaw 2006d. Final Quality Assurance and Management Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

14. Shaw 2006e. Final Data and Document Management Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

15. Shaw 2006f. Final Sampling and Analysis Plan Addendum No. 1 for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

16. Shaw 2006g. Final Waste Management and Minimization Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

17. Shaw 2006h. Final Public Relations Plan Addendum No. 1 for Remediation of Soils at Load Lines 1, 2, 3 and 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. November 2006.

18. Shaw 2007a. Final Interim Record of Decision for Remediation of Soils at Load Lines 1 through 4 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. January 2007.

19. Shaw 2007b. Final Remedial Action Work Plan for Remediation of Soils at Load Lines 1, 2, 3 and 4, Ravenna Army Ammunition Plant, Ravenna, Ohio. April 2007.

20. Shaw 2007c. Final Storm Water Pollution Prevention Plan, Remediation of Soils at Load Lines 1, 2, 3 and 4, Ravenna Army Ammunition Plant, Ravenna, Ohio. July 2007.

21. Shaw 2007d. Final SHERP Addendum, Remediation of Soils at Load Lines 1, 2, 3 and 4, Addendum Number 2007-02, Revision 1. July 2007.

22. Shaw 2008. Final Propellant Removal Summary Report for MEC Support for RVAAP 08 (Load Line 1), Ravenna Army Ammunition Plant, Ravenna, Ohio. January 24, 2008.

23. Ohio EPA 2008a. Letter from Ms. Eileen T. Mohr, Ohio EPA Facility Coordinator, to Mr. Mark Patterson, RVAAP Facility Manager, regarding December 10, 2007 walkthrough at LLs 1-4. January 9, 2008.

24. Ohio EPA, 2008b. Email correspondence from Ms. Eileen T. Mohr, Ohio EPA Facility Coordinator to Mr. Dave Cobb, Shaw Project Manager, regarding acceptance of LL1ss-29 excavation for PCBs. April 14, 2008.

25. U.S. Army Corps of Engineers – Louisville District (USACE) 2004. Final Facility-Wide Groundwater Monitoring Program Plan for the Ravenna Army Ammunition Plant, Ravenna, Ohio. September 2004.

RESPONSE TO COMMENTS TABLES

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DRAFT COMPLETION REPORT FOR THE REMEDIATION OF SOILS and DRY SEDIMENTS AT LOAD LINES 1-4 (RVAAP 08-11) AT THE RAVENNA ARMY AMMUNITION PLANT, RAVENNA, OHIO
COMMENT RESPONSE TABLE
JUNE 19, 2008

Cmt.#	Page # Line #	Comment	Recommendation	Response
		Ohio EPA (Eileen Mohr)		
A-1	Cover and Title Page	Change Title, add in "and Dry Sediments" before Remediation of Soils		The title will be changed to: "Remedial Action Completion Report for the Remediation of Soils and Dry Sediments at RVAAP08-11 (Load Lines 1-4).
A-2	CD	Change title to match Cover and Title page		The title will be changed to match the Cover and Title page.
A-3	Disclaimer Statement page	Remove Disclaimer Statement page for the Final version.		The disclaimer statement as been removed from the Final document.
A-4	Contractor Statement of Independent Technical Review	Need to make consistent with Cover and Title Page		The title will be changed to match the Cover and Title page. See Comment A-2.
A-5	List of Appendices Line 2	Correct spelling of Construction		The text has been revised to say "Construction".
A-6	Page 1-4, Line 18	Add "s" to foundation		The text has been revised to say "foundations".
A-7	Page 2-2, Line 4	Add "Final" before Interim ROD		The text has been revised to say "Final Interim ROD".
A-8	Page 2-3, Line 1	Add "Final" before Interim ROD		The text has been revised to say "Final Interim ROD".
A-9	Page 2-3, Line 6	Add "Final" before Interim ROD		The text has been revised to say "Final Interim ROD".
A-10	Page 3-1, Line 6	Change "plans" to "planned"		The text has been revised to say "planned".
A-11	Page 3-2, Line 17	Change "excavations" to "excavation"		The text has been revised to say "excavation".
A-12	Page 3-3, Lines 7-9	Add a statement that field data showed the required stability prior to sampling (removed enough well volume to ensure a viable sample was collected, measurements had stabilized, etc.) and		The text has been revised to say "Although unable to include in this report, the field measurement data was collected in accordance with Section 3.2.2 and indicated that the

Cmt.#	Page # Line #	Comment	Recommendation	Response
		cross reference to end of Section 3.2.2. Also, add a statement that indicates the integrity of the sampling, etc. was not compromised.		integrity of the collected groundwater samples were not compromised. Field screening data met the allowable criteria for sampling protocols applicable to the site."
A-13	Page 3-4, Line 18-19	Include a reference to use of temperature blanks		Temperature blanks were sent with each cooler shipped to the laboratory for analysis. The text has been revised to state "Temperature and trip blanks consisting of……."
A-14	Page 3-4, Line 28	Please clarify what is meant by "RVAAP Water Quality Criteria"? It is unclear as to what is referenced as there is nothing used by that designation.		Shaw's reference to the "RVAAP Water Quality Criteria" is incorrect. Per an email from Eileen Mohr dated November 7, 2007, Shaw was directed to compare the storm water sample detection results (or detection limits if non-detect) with site-wide surface water background and filtered/unfiltered groundwater. Reference to the "RVAAP Water Quality Criteria" in this section will be revised to state "Surface Water Background Criteria and Summary Statistics for Unconsolidated Zone Filtered/Unfiltered Groundwater Background Wells."
A-15	Page 3-5, Line 19	Does the text indicate that there was some impact from lab contamination? Please clarify if lab contamination is cited.		The contaminant concentrations in samples were not attributable to lab contamination. A sentence will be added to the end of the paragraph that states "The contaminant concentrations in samples were not attributable to lab contamination."
A-16	Page 3-10, Line 24	Add "as" after "as best"		The text has been revised to read "as best as" as requested.
A-17	Page 3-11, Table 3-1	Please confirm the total amount of Non-Hazardous Soils excavated. Column totals 9488 tons.		The actual tonnage transported off-site was 9488.63 tons. For report purposes (and in the table), the number was rounded up to get to 9489 tons as shown. The table will be rectified so that the column in question sums to 9489 tons.

Cmt.#	Page # Line #	Comment	Recommendation	Response
A-18	Page 3-11, Line 22	Delete “and staked” before utilizing		The text has been revised to read “were surveyed utilizing….”
A-19	Page 3-12, Line 2	Add “and staked” at end of sentence		The text has been revised to read “within one foot and staked.”
A-20	Page 3-15, Table 3-2	Why only 7 samples on Arsenic? Please explain briefly here or cross reference information on lines 12-20 on Page 3-16.		The note under Table 3-2 has been revised to state: “*Based on limited data (only 7 samples submitted for correlation) – See further explanation on next page under *“Arsenic”.*
A-21	Page 4-4, Table 4-1 and Line 10, Page 4-5, Line 7	Confirm total of Non-Hazardous Soils on Page 3-11 and make Table 4-1 and Line 10 consistent with Page 3-11.		See response to Comment A-17.
A-22	Page 5-2, Section 5.2.3.1	Was the validation performed on 10% of the received data?		Shaw validated 100% of the received data for samples collected during the work prior to inclusion for accuracy.
A-23	Drawing Load Line 1	AOC boundary on drawing should be current fenceline. Please move AOC boundary to fence.		The AOC boundary has been moved as requested on the drawing in the final.
A-24	Drawing Load Line 3, Note 3	Add “to” after this “drawing is”.		Note 3 has been revised to say “The purpose of this drawing is to….”
A-25	Drawing Load Line 3	AOC boundary on drawing should be current fenceline. Please move AOC boundary to fence.		The AOC boundary has been moved as requested on the drawing in the final.
A-26	Drawing Load Line 4	AOC boundary on drawing should be current fenceline. Please move AOC boundary to fence.		The AOC boundary has been moved as requested on the drawing in the final.
A-27	Drawing Load Line 4	There is a note next to Bldg G-1A that says “(3’)”. Please clarify what is meant. Is it a depth of excavation?		The note is a remnant from previous iterations of the drawing. It will be deleted in the drawing included in the Final version.
A-28	Appendix B Tables – Table B1	In the Winklepeck Burning Ground RI, there was no GW Analyses for explosives, propellants, VOCs, SVOCs, etc. By default, the concentrations should be set to zero for background instead of “NS”. Please change the Background concentrations to reflect this. Metal background numbers do not need to be changed.		As requested, on Table B-1, values under the column “RVAAP Background” has been revised to “0” as requested for all analytes with the exception of metals. This has been carried throughout the entire B-1 table.
A-29	Page 1 of 39, Table B-	Change RVAAP Background to zero		See response to Comment A-28.

Cmt.#	Page # Line #	Comment	Recommendation	Response
	1			
A-30	Page 2 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-31	Page 3 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-32	Page 4 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-33	Page 5 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-34	Page 6 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-35	Page 7 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-36	Page 8 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-37	Page 9 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-38	Page 10 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-39	Page 11 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-40	Page 12 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-41	Page 13 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-42	Page 14 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-43	Page 15 of 59, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-44	Page 16 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-45	Page 17 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-46	Page 18 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-47	Page 19 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-48	Page 20 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-49	Page 21 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28

Cmt.#	Page # Line #	Comment	Recommendation	Response
A-50	Page 22 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-51	Page 23 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-52	Page 24 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-53	Page 25 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-54	Page 26 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-55	Page 27 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-56	Page 28 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-57	Page 29 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-58	Page 30 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-59	Page 31 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-60	Page 32 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-61	Page 33 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-62	Page 34 of 39, Table B-1	Change most of the RVAAP Background to zero		See response to Comment A-28
A-63	Page 35 of 39, Table B-1	Change RVAAP Background to zero		See response to Comment A-28
A-64	Table B-3, Pages 1-4	Add a note that indicates what a blank cells means on the Table.		A note has been added to Table B-3 that states: “Blank cells indicate that the sample was not analyzed for that particular compound.”
A-65	Table B-4	Trip blank for the borrow source sample collected on 5/10/07 is not listed. Was there a trip blank for this sample?		There was no trip blank for the 5/10/07 sample. The 5/10/07 sample was for pre screening of soil provided by the supplier for use by Shaw to identify potential borrow sources. A trip blank was only completed for the soil to be delivered for use as backfill and analyzed only

Cmt.#	Page # Line #	Comment	Recommendation	Response
				for VOCs.
A-66	Table B-4	Why are there so many "NA"s on the tables? Please clarify.		The NAs for certain chemicals indicates the sample was not analyzed for that particular chemical in that sample. There are a large number of NAs on the table because an expanded analyte list was used for the same method (8260B and 8270C) on the second set of samples as compared to the first. The extended lists were not requested by Shaw and were run by the laboratory by mistake. Regardless of the list, no VOC and SVOC impact above allowable backfill thresholds were detected.
A-67	Appendices (General)	Change the cover pages, title and spine to match the title of the main text of the report.		The title will be changed to match the Cover and Title page. See Comment A-2.
A-68		Please send a copy of the bills of lading and manifests to my office so I can have a quick look at them. If I cannot review them by the 30JUN08 deadline; this will not have any impact on project approval.		Copies of the BOLs and Manifests will be forwarded during week of 22 June 2008.
A-69		Verification needed. 100% of the data was verified. Was a minimum of 10% of the data validated by an independent third party? Please clarify.		Shaw validated 100% of the received data for samples collected during the work prior to inclusion for accuracy. Shaw did not have data validated by an independent third party.
A-70		Thanks for sending along the field logs. I will look at them as soon as possible.	No response required – please note for future work.	Your welcome and thanks for your prompt attention.
A-71		Please make sure waybills are included in the official project file to complete the chain of custody.	No response required – please note for future work.	Comment noted – we will retain waybills and include in files on future work.
A-72		Clarify the lack of MS/MSD samples for a number of sample groups.		Shaw collected MS/MSD samples at a minimum frequency of 5% (1 per 20 samples) for all sample groups as

Cmt.#	Page # Line #	Comment	Recommendation	Response
				specified in the work plan. In all, a total of 17 MS/MSD samples were collected which amounts to greater than 10% of the total confirmatory samples collected (163). It should be noted that the Draft Closeout Report incorrectly stated that no MS/MSD sample was collected for the SVOC sample group. One MS/MSD sample was collected for SVOCs and Table 3-4 will be revised to incorporate this correction.
A-73	Appendices (specific)	App C (data verification report for metals) – Page 4 (first verification report) indicates items were omitted, but it wasn't clear what those items were. (This is just one example of several instances.)	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-74	Appendices (specific)	Are the copies of the data verification reports that are in the final project file signed?	No response required – please note for future work.	All data verification reports will be signed by the Shaw Project Chemist in the final version of the closeout report.
A-75	Appendices (specific)	In several of the data verification reports, there is missing information – ex. missing explosives information in the first verification report (App C).	No response required – please note for future work.	For the Appendix C data verification report (groundwater), the table of contents requires revision. Missing information in this report (ie. explosives and VOCs) are included in the report and the appropriate sections will be referenced in the table of contents. Propellants were not identified in groundwater and reference to this section will be removed from the table of contents. Shaw will review all other data verification reports to ensure there are no other discrepancies.
A-76	Appendices (specific)	Verifier should check typing – uses exclamation points a number of times for the numeral "1" throughout. Also check	No response required – please note for future work.	Agreed. This is an avoidable mistake. This will be discussed with lab and technical team.

Cmt.#	Page # Line #	Comment	Recommendation	Response
		spelling on entries prior to submitting.		
A-77	Appendices (specific)	On the Kemron Sample Extract Log Sheets – most of these were not reviewed and dated by a supervisor. Should be signed and dated in future projects. Key places where this should have occurred are on L071004 pg 21 and in L0711600 and L0711045 (page numbers cut off) where information was struck from or added to the note fields.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-78	Appendices (specific)	Several sample receipt forms (groundwater samples) indicated that the metal samples were not preserved with nitric acid. Any project impact?		Samples were not preserved in the field with nitric acid; however, the receiving lab performed nitric preservation immediately when samples were received. The Shaw project chemist has reviewed this issue and has determined that there was no project impact related to the delay in nitric preservation.
A-79	Appendices (specific)	Lab personnel should be instructed to use the one line strike out and initial method for making corrections. Most times this was done, but there were a number of times when this protocol was not followed.	No response required – please note for future work.	The lab will be reminded of the required policy for future work.
A-80	Appendices (specific)	App D (L0708235) pg 166 – no recovery listed for Phenol – d5. (This occurs in a few places where recoveries are not listed.)	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-81	Appendices (specific)	App D (L0708235) pg 242 – missing entries on QCMRL samples.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-82	Appendices (specific)	App D (L0708235) pg 470 – the extraction anomaly field references a lab accident. Additional details should be provided if lab accidents occur in future projects.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-83	Appendices (specific)	App D (L0708235) pg 1227 – The notes indicate that the trip blanks had bubbles.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports and go

Cmt.#	Page # Line #	Comment	Recommendation	Response
		Verify that future trips do not have bubbles. If these came from the lab – ask them to QA their trips better.		over sampling procedure requirements for all samples with field personnel.
A-84	Appendices (specific)	App F (A7130241) pg 4 of case narrative. The text indicates that the temperature of the cooler (upon receipt) was 12.7 degrees C. Page 16 of the report indicates that the samples were not in contact with the coolant. It appears that this sample was also sent via courier and may not have had time to reach the target range of 2-6 degrees C. In future efforts, please be aware of packaging, i.e; using bubble wrap or some other material to prevent bottles from breaking, but also using enough ice to get the samples down to the proper temperature.	No response required – please note for future work.	Comment noted – we will revisit this with field crews and go over sampling procedure requirements for all samples for future work. IN addition, we will ask them lab to notify us verbally of any incident such as this so that the option of resampling is still available.
A-85	Appendices (specific)	In future projects, please ensure that the COCs are completely filled out – ex. page 775 of L0710422. Chains should have the full name of the person relinquishing the samples, not just initials.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports and go over sampling procedure requirements for all samples with field personnel.
A-86	Appendices (specific)	In future projects please ensure that the proper protocol for making corrections is used, i.e. one line strikeout and initialed (ex. page 882 of L0710423).	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports and go over sampling procedure requirements for all samples with field personnel.
A-87	Appendices (specific)	L0710819, pgs 18 and 20 indicate that the surrogate or spike compound is out of range. It appears to be in range looking at the presented data.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports and ask them to be more diligent with their reporting criteria.
A-88	Appendices (specific)	L0711004 – pg 719 indicates that the samples were received out of hold time. However, the COC on pg 718 indicates that they were received within the correct holding time.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports and ask them to be more diligent with their reporting criteria.
A-89	Appendices (specific)	In Appendix G, there is a notation on a	No response required – please	Comment noted – we will revisit this

Cmt.#	Page # Line #	Comment	Recommendation	Response
		couple pages (sample L0705315, L071600) that: "Sample past 12 hour tune limit." There is no corresponding asterisk on this page to go with the note. It is unclear as to what this means. (Page numbers are cut off.)	note for future work.	with the lab to determine discrepancy.
A-90	Appendices (specific)	App H, A7J020173, pg 6. The text indicates that Test America assumed that the TCLP analyses were not subject to USACE Louisville Chemistry Guidelines. The lab should not make assumptions like this. Any questions the lab has should be verified with the contractor (in consultation with USACE and Ohio EPA).	No response required – please note for future work.	Agree. Shaw will discuss with all labs on future work because it is both a requirement and contractual issue as to what they signed up for and they are not unilaterally in charge of making judgment decisions.
A-91	Appendices (specific)	App H, A7J030108, pg 28 – percent recoveries out of limits should be flagged. (Also applicable to several sheets in App H, L0711045.)	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-92	Appendices (specific)	Kemron TCLP non-volatile document control number sheets are not peer reviewed nor signed by a supervisor (L0710454, L0711045). These should be signed in future projects.	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-93	Appendices (specific)	Cover sheet for App I, L08010047 should read Ravenna Army Ammunition Plant (not Depot).	No response required – please note for future work.	Comment noted – we will revisit this with the lab for future reports.
A-94	Appendices (specific)	App J, L0711258 – On the metals data verification checklist for Sb, Se, and Tl on page 1 – both yes and no are checked on question number 5. Clarify.	No response required – please note for future work.	Comment noted – we will revisit this with the lab to determine discrepancy.
A-95	Boring Logs (General)	On future projects, have a sign-off line for a reviewer. This person would basically act as a QA/QC person and make any	No response required – please note for future work.	Comment noted – this will be added to boring logs on future work.

Cmt.#	Page # Line #	Comment	Recommendation	Response
		necessary changes, fill in missing information, etc..		
A-96	Boring Logs (General)	On the future projects have an MI choice in the sample type box.	No response required – please note for future work.	Comment noted – this will be added to boring logs on future work.
A-97	Boring Logs (General)	It appears as though several entries may have had information added to the field logs. If this is the case, the person annotating the logs should have signed their name, and initialed all the pertinent places. Examples: some of the writing appears different; and, DC initials on log LL3ss-092.	No response required – please note for future work.	Comment noted – this will be added to boring logs on future work. We will go over protocol with field crews to ensure changes are properly annotated on all logs.
A-98	Boring Logs (Specific)	Several logs indicate that samples were collected from 0-2 foot depth bgs. Please clarify the interval selection. (Not all inclusive: sample #s LL1-ss-001; LL1ss-002; LL1ss-003 – 716; LL1ss-003 2nd; and, LL1ss-003 MI, etc.)		Excavation depths were based upon the depths of contamination specified in the LLs 1-4 Feasibility Study which was generally to the 0-2 foot interval. The depth of excavation exceeded 2 feet bgs if specified in the FS or if additional contamination was identified by field screening of confirmatory sampling.
A-99	Boring Logs (Specific)	Sample type missing from at least one log: LL1ss-004-704B.	No response required – please note for future work.	Comment noted. For record, sample was a soil sample.
A-100	Boring Logs (Specific)	Protocol for making changes was routinely applied throughout the field logs, but there are a few places where it was not utilized. Examples (not all inclusive): LL1ss-005-705B; LL3ss-~~034 76~~ 76; and, LL4ss-113-006.	No response required – please note for future work.	Comment noted. In future, we will go over protocol with field crews to ensure changes are properly changed/completed on all logs.
A-101	Boring Logs (Specific)	Not all the data boxes were filled in, for example the PID, O2/LEL, photograph #, calibration dates, weather and temperature. The logs should be completely filled out. Examples (not all inclusive): LL1ss-007; LL1ss-008; LL1ss-012 4th; LL1ss-020; and, LL3ss-073.	No response required – please note for future work.	Comment noted. We will go over protocol with field crews to ensure changes are properly changed/completed on all logs.
A-102	Boring Logs (Specific)	Not all field logs had the name of the	No response required – please	Comment noted. In future, we will

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		technician and date recorded. Examples (may not be all inclusive): LL1ss-009; and, LL1ss-023.	note for future work.	go over protocol with field crews to ensure changes are properly changed/completed on all logs.
A-103	Boring Logs (Specific)	Sample times and/or dates were missing on a few logs. Examples (may not be all inclusive): LL1ss-021; LL1ss-029; LL1-005; LL2ss-050; and, LL3ss-072.	No response required – please note for future work.	Comment noted. In future, we will go over protocol with field crews to ensure changes are properly changed/completed on all logs.
A-104	Boring Logs (Specific)	Sample #LL1ss-035 had two dates recorded on the bottom of the log. Please clarify.		The two dates on the log sheet for LL1ss-035 reflect the days that the crews were working at that excavation location (8/23 and 8/24). Typically, for the remaining log sheets only the actual sample dates were noted. The sample for LL1ss-035 was collected on 8/24 as verified by the COC (lab report no A7H240252) for the sample collected from the excavation.
A-105	Boring Logs (Specific)	Analyses requested were missing from log LL3-003-413.	No response required – please note for future work.	Comment noted. In future, we will go over protocol with field crews to ensure changes are properly changed/completed on all logs. For record, this was a stockpile sample that was analyzed for full waste characterization analyses. Analyses included full TCLP, PCBs, nitroaromatics and nitramines and RCRA characteristics. LL3-004-414 was a stockpile sample as well that was analyzed for the same constituents.

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OHARNG – RTLS (Katie Elgin)				
A-106	Document Distribution List	NGB is listed as getting 3 hard copies and 3 electronic copies of the document. I am not sure who you sent these documents		Agreed. Submissions to NGB are a result of the distribution list required under Shaw's contract. With

		to, but John Tesner was originally receiving them and he is no longer with NGB. In all actuality, we (OHARNG) pull in the NGB as needed on review of documents. Additionally, most other contractors on the RVAAP project do not send copies of reports to NGB. Therefore, I would recommend not sending the documents to NGB.		USACE concurrence, the document distribution list will be revised to not include any further distribution to NGB unless specifically directed by USACE. Going forward, only one copy of project documents will be forwarded to Katie Elgin as the sole OHARNG/NGB representative.
A-107	2 LL1 and LL3 drawings	The dashed line marked as the "AOC Boundary" is incorrect. The AOC Boundary is currently placed at the load line fence line. The area enclosed in your "AOC Boundary" (if you decide to use this area instead of moving the dashed line to the fence line) should be identified as something else such as "Extent of Removal Action". For LL2 and LL4 drawings, the line for the AOC boundary is at the fence line so I am okay with leaving that marked as "AOC Boundary."		The AOC boundaries have been moved as requested on the drawings for LL1 and LL3 in the final.
A-108	Figure 1-2 RVAAP Facility Map	As noted in Comment 2, check the areas highlighted as the AOC on this figure. AOC boundary is currently set at the fence line. Recommend changing the descriptor for the yellow highlighted area (i.e. AOC under IRP / JMC Use Area) as these are not the only AOCs under the IRP. Change to something such as "AOCs included in Remedial Action."		The AOC boundaries have been moved as requested on the drawing to be consistent with the LL1-LL4 specific drawings. The text in the legend regarding the AOCs has been revised to read: "AOCs covered under LL1-LL4 FPRI contract".

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USACE (Kathy Krantz, Rec'd 27 Mar 2008)					
A-1	Section 3.5.4, Pg 3-11	Added sections 3.5.4.1 – 3.5.4.3 (Pgs 3-14 to 3-17)	Field screening results were not provided.	The screening results and the establishment of a correlation with confirmatory samples should be provided in an Appendix.	Shaw will revise the first sentence in Section 3.5.4 to state the following: "On-site field screening was performed for metals, PCBs and the explosives TNT and RDX prior to collecting the multi-increment samples for off-site confirmatory analysis. In general, the results of the field screen analyses for metals and explosives compared well with the confirmatory laboratory results with the exception of…..". Shaw will revise Section 3.5.4 to include further discussion of the correlation between field screen and laboratory results for PCBs, explosives and metals. Since metals represented the majority of the COCs at LLs 1-4, a table showing the XRF correlation results for the pre-construction samples will be added to this section. Shaw will provide the text for review prior to issue of the Draft report.
A-2	Section 2.0, Pg 2-1	Pg 2-1 to 2-2, added Section 2.1.1 for RAOs	What were the COCs and the associated clean-up goals?	Include in section.	Section 2.1.1 will be inserted into Section 2.0 and will state the following: "Clean-up goals are the maximum allowable concentrations which are protective of human health and the environment. Clean-up goals for surface and subsurface soils and dry sediment at LLs 1-4

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					were determined based on risk-based and site-specific considerations, including background concentrations, duration of reasonable maximum human exposures, and reasonably anticipated future land use (National Guard mounted training, no digging). Attainment of the RAO addressed potential risks to human and ecological receptors identified in the risk assessment through removal of surface and subsurface soil and dry sediment with concentrations of COCs exceeding clean-up goals (Shaw 2007a). The clean-up goals implemented for the remediation of soils and dry sediment at LLs 1-4 as presented in the Interim ROD are included in **Table 2-1**." Table 2-1 will include a list of the COCs and associated cleanup goals.
A-3	Section 3.6.1, Pg 3-12	Pg 3-17, Section 3.6.1, Line 18-20	The intent of multi-incremental sampling is to send in the entire sample collected. Was sending a maximum of 1 kilogram specified in the Work Plan and how often was it necessary to reduce the size of the MI sample?	Clarify.	The original intent in the Work Plan was to submit the entire multi-incremental sample to the laboratory for processing; however, discussions with Test America during the procurement process indicated that typically only 1 kg of soil is sent for processing including samples submitted in the past by USACE. After collecting the required sample volume and homogenizing it in the field, Shaw reduced the size of the MI sample as best possible so that approximately only 1 kg of soil was collected for each MI area. Shaw will include a sentence at the end of the 1st paragraph in section

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					3.6.1 that states "It should be noted that the reduction of the sample volume prior to shipment deviated from the methodology outlined in the RAWP but was approved by USACE and the OhioEPA prior to implementation in the field."
A-4	Section 3.6.2, Pg 3-13	Pg 3-17, Section 3.6.2, Line 30-32	Please indicate the analyses each laboratory was responsible for.	Add a table or some text.	The following will be added to this section after the first sentence: "Shaw contracted both laboratories to ensure adequate turn-around-times were achieved in conjunction with Shaw's aggressive excavation schedule. Both laboratories performed analyses for benzo(a)pyrene, 2,4,6-TNT and metals. In addition to these analyses, Test America analyzed solely for propellants and PCBs and RDX samples were analyzed only by Kemron."
A-5	Tables B-1		Screening criteria should be included on the sample results tables for groundwater.	Include a column(s) for the appropriate screening criteria and bold anything that exceeds criteria.	Shaw will include the screening criteria used in the FWGWMP into the sample results table for groundwater.
A-6	Appendix C and F, Section 1.2	App C, Added Section 2.8	Am puzzled by the statement "data qualifiers were not assigned based on data verification findings".	Clarify if based upon the data evaluation no data qualifiers were required or if this is to be interpreted that the data verification process did not include data qualification. Note the latter statement is not correct. See comment 9.	*Section 2.8 – Data Qualifications* will be added to the Groundwater Data Verification Report in Appendix C. The text will go as follows: "Data qualifications have been performed in accordance to LCG. The qualification "UJ" is defined as the estimates (J) to non-detects (U) for non metals. It is to be noted that LCG has a much stringent (or difficult) QA/QC criteria (except for VOC) than SW-846, Contract

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					Laboratory Protocol (CLP) and Department of Defense Quality System Manual (DOD QSM). **(a) Metals**: QC/MRL standards (opening and closing) were outside the allowable range on a number of occasions. However, an MDL check was analyzed at the end subsequently, no corrective action was required (no qualifier was assigned) **(b) SVOCs:** LCG does not address sample qualification criteria (or the corrective action) on the samples, when associated method blank and LCS yields out of range recoveries (as long as the recovery is over 10%). Although a number of surrogate recoveries were outside the allowable range (as shown in Table 2-1) for method blanks and LCSs, no qualification was assigned. The following sample results will be assigned UJ based on surrogate recovery (one or more outside the allowable range of 50-150%). **(c) Pesticides:** LCG does not address sample qualification criteria (or the corrective action) on the samples, when associated method blank and LCS yields out of

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					range recoveries (as long as the recovery is over 10%). Although a number of surrogate recoveries were outside the allowable range (as shown in Table 2-4) for method blanks and LCSs, no qualification was assigned. The following sample results will be assigned UJ based on surrogate recovery (one or more outside the allowable range of 50-150%). **(d) PCBs:** LCG does not address sample qualification criteria (or the corrective action) on the samples, when associated method blank and LCS yields out of range recoveries (as long as the recovery is over 10%). Although a number of surrogate recoveries were outside the allowable range (as shown in Table 2-5) for method blanks and LCSs, no qualification was assigned. The following sample results will be assigned UJ based on surrogate recovery (one or more outside the allowable range of 50-150%). **(e) Explosives:** The second source verification of tetryl yielded %D of high bias (lot #s 0508053, 0708030, 0708235). However, no

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		App F, Added Section 2.7			tetryl was detected in the samples. No corrective action was taken (no qualification was assigned**).** **(f) Volatiles:** (a) Methyl acetate was below the lower control limit but within marginal failure limits in the pre-sequence QC/MRL. 1,1,1-Trichloroethane, 1,1-dichloroethane, cis-1,2-dichloroehene, benzene, carbon disulfide, cyclohexane, ethyl-benzene, methylcyclohexane, styrene, toluene, and xylenes were below the lower control limit but within marginal failure limits. However, trans-1,2 dichloroethene, carbon tetrachloride, isopropylbenzene, methyl acetate and tetrachloroethene were below the lower control and marginal failure limits in the post-sequence QC/MRL. Thus, trans-1,2 dichloroethene, carbon tetrachloride, isopropylbenzene, methyl acetate and tetrachloroethene were assigned the qualifier "UJ". *Section 2.7 – Data Qualifications* will be added to the MI Data Verification Report in Appendix F.

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					The text will go as follows: Data qualifications have been performed in accordance to LCG. The qualification "UJ" is defined as the estimates (J) to non-detects (U) for non-metals. It is to be noted that LCG has a much stringent (or difficult) QA/QC criteria (except for VOC) than SW-846, Contract Laboratory Protocol (CLP) and Department of Defense Quality System Management Plan (DOD QSM). **(g) Metals**: There is no qualification needed as far as LCG is concerned. TestAmerica assigned "J" (only in case of metals "J" qualifier is applied for blank contamination) for blank contamination in metal samples. However, in all those cases the metal concentrations in the blank were below one half of the reporting limit. Thus, no qualification or correction is required. **(h) SVOCs:** LCG does not address sample qualification criteria when associated method blank and LCS yields out of range recoveries. Although recoveries of 2,4,6-tribromophenol (a surrogate) was below LCG allowable limit 50-150% in the method

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					blank and in LCS, no qualification was assigned. **(i) PCBs:** As shown in Table 2-2 recoveries of decafluorobiphenyl were outside the allowable limits of 50-150% for samples LL2ss-062, LL3ss-085, LL3ss-092, LL1ss-017, and LL3ss-073. Thus, the results will be qualified "J" for these samples. **(j) Explosives:** Samples LL3ss-088 and LL3ss-098 were extracted outside the holding time. The results of these samples will be qualified "J".
A-7	Appendix C and F, Pg 1-3		"Adherence to the LCG QC/MRL requirements was not required for this project……therefore; corrective action was not required for QC/MRL results outside the LCG control limits.	MRLs would be required if the work was contracted to follow the LCG unless specifically stated otherwise.	This sentence was introduced unintentionally. The statement will be removed.
A-8	Appendix C and F, Pg 1-6		The last sentence should probably say "…each test panel in each sample delivery group or data package" rather than "in each sample".	Correct if applicable.	For both Appendix C and F, this sentence in Section 1.3 has been revised to state: "..each test panel in each sample delivery group or data package.."
A-9	Appendix C and F, General		Apparently, data qualifications were not performed in accordance with the LCG. Tables 1 through 10 in the LCG provide explicit instruction on how the data should be qualified based upon QC outliers.	Review the LCG guidelines for the qualification of analytical data.	The LCG guidelines for data qualification will be reviewed and a section summarizing data qualifications will be included in Appendix C and F. For text to be included in these appendices, please see response to Comment A-6.
A-10	Appendix C and F,	App C, Section	Please also include the sample preparation methods, where	Include.	The report will be revised to include sample preparation method when

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	Section 2.0, Pg 2-1	2-1 to 2-6	appropriate.		applicable. For the GW Data Verification Report, the text will be revised to include the following: "2.1 Metals - The samples were extracted using SW-846 method 3005A and subsequently analyzed by method 6010B or 6020. 2.2 SVOCs - The samples were extracted using SW-846 method 3510C and subsequently analyzed by method 8270C. 2.3 Pesticides - The samples were extracted using SW-846 method 3510C and subsequently analyzed by method 8081. 2.4 PCBs - The samples were extracted using SW-846 method 3510C and subsequently analyzed by method 8082 2.5 Explosives - The samples were extracted and subsequently analyzed using SW-846 method 8330. 2.6 VOCs - The samples were extracted and analyzed using SW-846 method 8260B.
		App F, Section 2-1 to 2-5			For the MI Data Verification Report, the text will be revised to include the following: 2.1 Metals - The samples were extracted using SW-846 method 3550B and subsequently analyzed

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					by method 6010B. 2.2 SVOCs - Soil SVOC samples were extracted using SW-846 method 3540C and subsequently analyzed by method 8270C. 2.3 PCBs - The samples were extracted using SW-846 method 3550B and subsequently analyzed by method 8082. 2.4 Explosives - The samples were extracted and analyzed by SW-846 method 8330. 2.5 Propellants - Nitroguanidine samples were extracted using by SW-846 Method 3550A. Nitrocellulose samples were extracted by Solvent Extraction method. LCG does not include propellant analytical protocols.
A-11	Appendix C and F, Section 2.0, Pg 2-1	App C, Section 2.0, Pg 2-1 App F, Section 2.0, Pg 2-1	It would be helpful to reiterate how many sample were collected and for what parameters they were being analyzed for in the opening paragraph of Section 2.0	Add a statement.	The following text will be inserted in the first paragraph of Section 2.0 in the GW Verification Report: "In all, a total of 23 groundwater samples were submitted for laboratory analysis for metals, SVOCs, pesticides, PCBs and explosives. A total of 29 samples, including trip and equipment rinsate blanks were submitted for analysis for VOCs." The following text will be inserted in the first paragraph of Section 2.0 in the MI Verification Report: "In all, a total of 163 samples were

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					submitted for metal analyses (eight aluminum, two antimony, sixteen arsenic, seven chromium, 15 lead and five manganese), two soil samples were submitted for benzo(a)pyrene, 13 soil samples were submitted for Arochlor-1254, 17 samples were submitted for explosives analyses (13 samples for TNT and four soil samples for RDX) and five soil samples were submitted for the propellants."
A-12	Appendix C and F.		The LCG does not indicate that it is allowable for one of the two surrogates to be outside QC limits for pesticides and PCBs. The data should be qualified.	Review the LCG criteria and/or provide justification for this deviation.	The report will be revised to address surrogate recoveries. The last edition of version V of LCG is significantly different from its previous versions and editions.
A-13	Appendix C, Pg 2-2		Didn't see any reference for Table 2-1 in the text to inform the reader that it was there. It would be helpful to indicate the Lot Numbers each sample is associated with.	Reference the table in the text and add a column to include the Lot Numbers.	Text will be revised appropriately to reference Table 2-1. Table 2-1 has been revised to reference the appropriate lot numbers.
A-14	Appendix C, Pg 2-2; and General		Table 2-2 shows MS/MSD outliers for one sample. The text indicates that there were two. One in lot L0708092 and another in L0708235. Please indicate the associated Lot Numbers on the table.	Add a column to include the Lot Numbers.	The Table 2-2 will be revised to include a column with corresponding lot numbers.
A-15	Appendix C		It should be indicated in Table 2-3 which LCS this is and which samples are associated with it.	Add a column to include which samples are associated with this LCS.	A column will be inserted in Table 2-3 to clearly show LCS and associated samples.
A-16	Appendix C, Pg 2-4		Lot #L0708030 – the last sentence doesn't make sense.	Clarify.	The last sentence will be revised as follows: "The sample was re-extracted (as corrective action) and the recoveries for 2,4,6-Tribromophenol and 2-Fluorophenol

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					were below 10% in both cases. This indicates there is matrix interference associated with this sample."
A-17	Appendix F, Pg 1-1	Added to Section 1.0	Section 1.0 – Please indicate what analyses each laboratory was responsible for.	Clarify.	The following statement will be included in the text: "The samples were analyzed by Kemron Environmental Services, Marietta, Ohio and TestAmerica Laboratories in North Canton, Ohio. Both laboratories performed analyses for the metals, benz(o)pyrene, and explosives. Kemron performed exclusive analysis for Arochlor-1254 and TestAmerica performed exclusive analysis for propellants. Explosives analyses performed by TestAmerica were conducted at their laboratory in West Sacramento, California."
A-18	Appendix F, Section 2.0		Particularly for this appendix, please reiterate from the main report what the target or analytes of concern are.	Add a statement regarding the selected analytes.	Statement will be added to the appendix to indicate the target analytes of concern. Text in each section will be as follows: "2.1 Metals - A total of 163 metal analyses (eight aluminum, two antimony, sixteen arsenic, seven chromium, fifteen lead and five manganese) were performed by Shaw's contracted laboratories; TestAmerica and KEMRON. 2.2 SVOCs - Two soil samples were analyzed by for benzo(a)pyrene. 2.3 PCBs - Thirteen PCB soil samples were submitted to KEMRON laboratory for Aroclor-1254 anlysis.

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					2.4 Explosives - A total of 17 multi-increment samples were submitted for explosives analysis to TestAmerica; thirteen samples for 2,4,6-Trinitrotoluene (TNT) and four soil samples for RDX analyses. 2.5 Propellants - Five soil samples were submitted to TestAmerica for nitroguanidine, nitroglycerine and nitrocellulose analysis."
A-19	Appendix F, Section 2.5, Pg 2-3	Section 2.6, Pg 2-3, Line 19-20	Were all in-house QC limits met?	Include a statement.	A sentence will be added to this section that states the following: "All LCG and non-LCG QC (propellants) outliers were within the allowable limits."
A-20	General		Some minor typo and spelling throughout.	Read through again.	Report will be subjected to another QC review for typographical and spelling errors.
USACE (Rick Hockett, Rec'd 27 Mar 2008)					
A-21	3-2	Section 3.2, Pg 3-2, Lines 24-26	Section 3.2. Groundwater monitoring should have been performed in accordance with the 2004 document Facility-wide Groundwater Monitoring Program Plan. USACE had several conversations with Shaw personnel prior to the sampling event and explained these details.	Please verify that the FWGWMP requirements were followed, and state this in the text.	The last sentence in Section 3.2 will be revised as follows: "Groundwater sampling activities were performed in accordance with the requirements of the Facility-wide Sampling and Analysis Plan (FSAP; SAIC 2001), the FWGWMP Plan (USACE 2004), and the Shaw Field Sampling Plan (FSP; Shaw 2006b)."
A-22	3-4	Pg 3-4 to 3-7	Section 3.2.8. Background values for inorganic compounds have been developed for RVAAP.	Include a discussion of the relation of the detected inorganic compounds with the RVAAP background levels.	Discussion regarding a comparison of the detected inorganic compounds to RVAAP background levels will be included in Section 3.2.8 as follows:

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					3.2.8.4 Inorganics In addition to MCLs and Region 9 PRGs, the inorganics detected above the laboratory reporting limits were compared to facility-wide background criteria for filtered groundwater. Calcium, magnesium, iron, potassium and sodium were eliminated from this discussion as potential on-site contaminants because they are considered essential nutrients. The following inorganic elements were detected above the reporting limits and applicable background levels: • Dissolved Arsenic – LL1mw081 (0.00102 mg/L), LL1mw082 (0.00191 mg/L), LL1mw085 (0.000427 mg/L), LL2mw262 (0.000313 mg/L J and 0.000268 mg/L J), LL2mw263 (0.0104 mg/L), LL2mw266 (0.00488 mg/L and 0.00554 mg/L), LL2mw267 (0.00438 mg/L), LL2mw269 (0.000623 mg/L J), LL3mw236 (0.000277 mg/L J), LL3mw238 (0.000434 mg/L J), LL3mw239 (0.000981 mg/L J), LL4mw196 (0.00709 mg/L J), LL4mw197 (0.000268 mg/L J) and LL4mw198 (0.000421 mg/L J); • Dissolved Antimony – LL1mw067 (0.00088 mg/L),

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					LL1mw078 (0.000385 mg/L J), LL1mw084 (0.000322 mg/L J), LL1mw085 (0.000432 mg/L J), LL2mw262 (0.000315 mg/L J and 0.000422 mg/L J), LL2mw266 (0.000452 mg/L J), LL2mw267 (0.000525 mg/L J), LL3mw239 (0.00053 mg/L J) and LL4mw197 (0.000333 mg/L J); • Dissolved Barium – LL2mw269 (0.263 mg/L); • Dissolved Beryllium – LL1mw084 (<0.000512 mg/L J); • Dissolved Cobalt – LL1mw081 (0.00748 mg/L J), LL1mw082 (0.00301 mg/L J), LL1mw084 (0.0295 mg/L J), LL1mw085 (0.00336 mg/L J), LL2mw266 (0.0154 mg/L J and 0.0121 mg/L J), LL2mw267 (0.00314 mg/L J) and LL3mw239 (0.00837 mg/L J); • Dissolved Lead – LL1mw084 (0.00281 mg/L), LL2mw269 (0.000423 mg/L J) and (0.000333 mg/L J); • Dissolved Manganese – LL1mw078 (0.0559 mg/L), LL1mw081 (2.09 mg/L), LL1mw082 (0.693 mg/L), LL1mw084 (0.306 mg/L),

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					LL1mw085 (0.613 mg/L), LL2mw262 (0.291 mg/L and 0.263 mg/L), LL2mw263 (0.837 mg/L), LL2mw266 (0.982 mg/L and 1.12 mg/L), LL2mw267 (0.594 mg/L), LL2mw269 (1.78 mg/L), LL3mw236 (0.599 mg/L), LL3mw239 (4.413 mg/L), LL4mw196 (0.115 mg/L) and LL4mw198 (1.23 mg/L); • Dissolved Nickel – LL1mw067 (0.0356 mg/L J), LL1mw081 (0.0114 mg/L J), LL1mw082 (0.00851 mg/L J), LL1mw084 (0.0554 mg/L), LL1mw085 (0.0135 mg/L J), LL2mw262 (0.0158 mg/L J and 0.0155 mg/L J), LL2mw266 (0.0125 mg/L J and 0.0119 mg/L J), LL3mw239 (0.0191 mg/L J) and LL4mw198 (0.044 mg/L); • Dissolved Selenium – LL1mw084 (0.00119 mg/L), LL2mw262 (0.00111 mg/L and 0.00116 mg/L), LL2mw266 (0.000945 mg/L J), LL2mw269 (0.000842 mg/L J), LL3mw238 (0.0013 mg/L) and LL4mw196 (0.000501 mg/L J); • Dissolved Thallium - LL1mw067 (0.000123 mg/L), LL1mw078 (0.000273 mg/L), LL1mw081 (0.000214

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					mg/L), LL1mw082 (0.000356 mg/L), LL1mw084 (0.00047 mg/L), LL2mw263 (0.0000555 mg/L J), LL2mw266 (0.000112mg/L and 0.000101 mg/L), LL2mw269 (0.000564 mg/L J), LL3mw236 (0.000509 mg/L), LL3mw238 (0.000377 mg/L), LL3mw239 (0.00123 mg/L), LL4mw196 (0.000649 mg/L), LL4mw197 (0.0002 mg/L) and LL4mw198 (0.000601 mg/L); • Dissolved Zinc – LL1mw084 (0.0993 mg/L), LL2mw267 (0.0679 mg/L J) and LL4mw198 (0.115 mg/L). All the concentrations listed above for dissolved manganese exceed the drinking water Secondary Standards. All the concentrations listed above for dissolved antimony, barium, beryllium, cobalt, lead, nickel, selenium, thallium and zinc exceed the applicable background criteria. Arsenic concentrations exceeded the Region 9 PRG at all the well locations identified above. A dissolved arsenic concentration of 0.0104 milligrams per liter (mg/L) just exceeded the drinking water MCL of 0.01 mg/L at LL2mw263. None of the arsenic concentrations exceeded the background criteria of 0.0117 mg/L.

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A-23	3-4	Pg 3-4 to 3-7	Section 3.2.8. RVAAP ground water constituent concentrations are typically compared to USEPA Region 9 PRGs.	Include a discussion of the relation of the detected compounds with the USEPA Region 9 PRGs.	Discussion regarding a comparison of the detected compounds to USEPA Region 9 PRGs will be included in Section 3.2.8. Shaw will submit this text for review prior to issuing the Draft report. **3.2.8 Summary of Groundwater Sample Results** The purpose of the initial groundwater sampling activities was to identify presence of contaminants in groundwater prior to initiation of Shaw construction activities. Baseline groundwater sampling was not intended to characterize the extent of contamination at these locations or attempt to ascertain a potential source. However, in order to establish the existing contaminant conditions in groundwater at LLs 1-4, where applicable, results were compared to the RVAAP Water Quality Criteria that are consistent with the United States Environmental Protection Agency (USEPA) Primary Drinking Water Regulations and their Maximum Contaminant Limits (MCLs) and Secondary Standards, the USEPA Region 9 Preliminary Remediation Goals (PRGs) and RVAAP-established background levels established (inorganics only). It should be noted that not all organic and inorganic compounds, analyzed as part of the baseline groundwater sampling event, have established

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					screening levels. A summary of analytical results for the Shaw baseline groundwater sampling event are presented in the data summary tables (**Table B-1**) in **Appendix B**. The Kemron laboratory report and associated evaluation report for groundwater are presented in **Appendix C** in the electronic attachment. **3.2.8.1 Volatile Organic Compounds** Low level concentrations of VOCs were detected in groundwater samples above the method detection limits at all four load lines and included the following compounds at the identified well locations: • Chloromethane – LL1mw078 (0.935 µg/L J), LL1mw081 (0.514 µg/L), LL1mw082 (0.378 µg/L J), LL1mw084 (0.559 µg/L J), LL1mw084 (0.342 µg/L J), LL2mw262 (0.413 µg/L J and 0.324 µg/L J), LL2mw263 (0.567 µg/L J), LL3mw236 (0.561 µg/L J), LL3mw238 (0.430 µg/L J), LL3mw239 (0.317 µg/L J), LL4mw197 (0.307 µg/L J) and LL4mw198 (0.333 µg/L J). • Acetone – LL1mw082 (3.28 µg/L), LL3mw239 (17.7 µg/L) • Trichloroethene –

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					LL1mw085 (0.259 µg/L J) • Chloroform – LL2mw267 (0.366 µg/L J) and LL3mw239 (0.335 µg/L J) • Carbon Disulfide – LL3mw239 (0.557 µg/L J) • 2-Butanone – LL3mw239 (4.1 µg/L J) • Toluene - LL3mw-239 (0.316 µg/L J) The location where the most VOCs were detected was well LL3mw239. Drinking water MCLs have only been established for trichloroethene and toluene which were detected at one well location each at LL1mw085 and LL3mw239, respectively. Both concentrations detected were below their MCLs. Chloromethane was the most widespread VOC detected and was identified in various wells at all four load lines. Detected VOCs that exceeded the Region 9 PRGs included chloroform at LL2mw267 and LL3mw239. **3.2.8.2 Semi-Volatile Organic Compounds** One SVOC contaminant exceeded the method detection limit. Bis(2ethylhexyl)phthalate was detected at a concentration of 6.51 micrograms per liter (µg/L) at well location LL1mw084. This compound exceeds the Region 9

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					PRG of 4.8 µg/L. There is no MCL standard for this compound. **3.2.8.3 Explosives and Propellants** Concentrations of explosives were detected in groundwater samples at four well locations above the method detection limits and included the following compounds at the identified well locations: • 1,3-Dinitrobenzene – LL1mw084 (1.33 µg/L); • 2,4,6-Trinitrotoluene – LL1mw084 (9.18 µg/L) and LL3mw238 (65.1 µg/L); • 2,4-Dinitrotoluene – LL1mw084 (4.35 µg/L); • 2-Amino-4,6-dinitrotoluene – LL1mw081 (0.553 µg/L J), LL1mw084 (15.8 µg/L J), LL2mw267 (0.477 µg/L J) and LL3mw238 (2.84 µg/L); • 4-Amino-2,6-dinitrotoluene – LL1mw081 (0.563 µg/L J), LL1mw084 (21.9 µg/L), LL2mw267 (0.453 µg/L J) and LL3mw238 (26.6 µg/L and 26.3 µg/L); • 4-Nitrotoluene - LL2mw267 (0.436 µg/L J); • HMX – LL1mw084 (0.417 µg/L J) and LL3mw238 (1.49 µg/L); • RDX – LL1mw084 (2.42

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					µg/L) and LL3mw238 (8.42 µg/L); and • 1,3,5-Trinitrobenzene (4.24 µg/L) and LL3mw238 (24 µg/L). All of the aforementioned explosive compounds, with the exception of 4-nitrotoluene, were detected at well LL1mw084. The well with the highest concentrations for the individual explosive COCs was LL3mw238. Trinitrotoluene and RDX were above the Region 9 PRGs at both well locations. No propellants were detected in any of the baseline groundwater samples. **3.2.8.4 Inorganics** In addition to MCLs and Region 9 PRGs, the inorganics detected above the laboratory reporting limits were compared to facility-wide background criteria for filtered groundwater. Calcium, magnesium, iron, potassium and sodium were eliminated from this discussion as potential on-site contaminants because they are considered essential nutrients. The following inorganic elements were detected above the reporting limits and applicable background levels: • Dissolved Arsenic – LL1mw081 (0.00102 mg/L), LL1mw082 (0.00191 mg/L), LL1mw085 (0.000427 mg/L), LL2mw262

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					(0.000313 mg/L J and 0.000268 mg/L J), LL2mw263 (0.0104 mg/L), LL2mw266 (0.00488 mg/L and 0.00554 mg/L), LL2mw267 (0.00438 mg/L), LL2mw269 (0.000623 mg/L J), LL3mw236 (0.000277 mg/L J), LL3mw238 (0.000434 mg/L J), LL3mw239 (0.000981 mg/L J), LL4mw196 (0.00709 mg/L J), LL4mw197 (0.000268 mg/L J) and LL4mw198 (0.000421 mg/L J); • Dissolved Antimony – LL1mw067 (0.00088 mg/L), LL1mw078 (0.000385 mg/L J), LL1mw084 (0.000322 mg/L J), LL1mw085 (0.000432 mg/L J), LL2mw262 (0.000315 mg/L J and 0.000422 mg/L J), LL2mw266 (0.000452 mg/L J), LL2mw267 (0.000525 mg/L J), LL3mw239 (0.00053 mg/L J) and LL4mw197 (0.000333 mg/L J); • Dissolved Barium – LL2mw269 (0.263 mg/L); • Dissolved Beryllium – LL1mw084 (<0.000512 mg/L J); • Dissolved Cobalt – LL1mw081 (0.00748 mg/L

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					J), LL1mw082 (0.00301 mg/L J), LL1mw084 (0.0295 mg/L J), LL1mw085 (0.00336 mg/L J), LL2mw266 (0.0154 mg/L J and 0.0121 mg/L J), LL2mw267 (0.00314 mg/L J) and LL3mw239 (0.00837 mg/L J); • Dissolved Lead – LL1mw084 (0.00281 mg/L), LL2mw269 (0.000423 mg/L J) and (0.000333 mg/L J); • Dissolved Manganese – LL1mw078 (0.0559 mg/L), LL1mw081 (2.09 mg/L), LL1mw082 (0.693 mg/L), LL1mw084 (0.306 mg/L), LL1mw085 (0.613 mg/L), LL2mw262 (0.291 mg/L and 0.263 mg/L), LL2mw263 (0.837 mg/L), LL2mw266 (0.982 mg/L and 1.12 mg/L), LL2mw267 (0.594 mg/L), LL2mw269 (1.78 mg/L), LL3mw236 (0.599 mg/L), LL3mw239 (4.413 mg/L), LL4mw196 (0.115 mg/L) and LL4mw198 (1.23 mg/L); • Dissolved Nickel – LL1mw067 (0.0356 mg/L J), LL1mw081 (0.0114 mg/L J), LL1mw082 (0.00851 mg/L J), LL1mw084 (0.0554 mg/L), LL1mw085 (0.0135 mg/L J), LL2mw262 (0.0158 mg/L J and 0.0155 mg/L J), LL2mw266 (0.0125 mg/L J

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					and 0.0119 mg/L J), LL3mw239 (0.0191 mg/L J) and LL4mw198 (0.044 mg/L); • Dissolved Selenium – LL1mw084 (0.00119 mg/L), LL2mw262 (0.00111 mg/L and 0.00116 mg/L), LL2mw266 (0.000945 mg/L J), LL2mw269 (0.000842 mg/L J), LL3mw238 (0.0013 mg/L) and LL4mw196 (0.000501 mg/L J); • Dissolved Thallium - LL1mw067 (0.000123 mg/L), LL1mw078 (0.000273 mg/L), LL1mw081 (0.000214 mg/L), LL1mw082 (0.000356 mg/L), LL1mw084 (0.00047 mg/L), LL2mw263 (0.0000555 mg/L J), LL2mw266 (0.000112mg/L and 0.000101 mg/L), LL2mw269 (0.000564 mg/L J), LL3mw236 (0.000509 mg/L), LL3mw238 (0.000377 mg/L), LL3mw239 (0.00123 mg/L), LL4mw196 (0.000649 mg/L), LL4mw197 (0.0002 mg/L) and LL4mw198 (0.000601 mg/L); • Dissolved Zinc – LL1mw084 (0.0993 mg/L), LL2mw267 (0.0679 mg/L J) and

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					LL4mw198 (0.115 mg/L). All the concentrations listed above for dissolved manganese exceed the drinking water Secondary Standards. All the concentrations listed above for dissolved antimony, barium, beryllium, cobalt, lead, nickel, selenium, thallium and zinc exceed the applicable background criteria. Arsenic concentrations exceeded the Region 9 PRG at all the well locations identified above. A dissolved arsenic concentration of 0.0104 milligrams per liter (mg/L) just exceeded the drinking water MCL of 0.01 mg/L at LL2mw263. None of the arsenic concentrations exceeded the background criteria of 0.0117 mg/L. **3.2.8.5 Pesticides and PCBs** Concentrations of the pesticide 4,4'-DDT were detected in groundwater samples above the method detection limits at the following two well locations on LL 2: • 4,4'-DDT – LL2mw262 (0.0311 µg/L J, 0.0433 µg/L J, 0.0631 µg/L J and 0.075 µg/L J), LL2mw266 (0.022 µg/L J and 0.030 µg/L J) These pesticide concentrations exceed the Region 9 PRG of 0.2 µg/L. No PCBs were identified above the method detection limits in any of the groundwater samples collected.

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A-24	3-4		General comment. Protocols for reporting ground water data at RVAAP have been developed thru an iterative process with Ohio EPA during the FWGWMP activities.	Suggest that a recent approved copy of a FWGWMP quarterly report prepared by EQM be reviewed, and details added to the Completion Report so that the level of ground water reporting is consistent with the FWGWMP reporting.	By contract, the objectives of the FWGWMP and Shaw's groundwater sampling event are not the same. Shaw collected the groundwater samples presented in the Closeout Report for groundwater baseline determination purposes only and not part of the FWGWMP program. The intent of the sampling event was to ensure that remedial activities did not further impact groundwater. A column will be added to the data summary tables specifying the screening criteria under FWGWMP (see Comment 5). If additional reporting beyond this is necessary, please notify us immediately. Shaw can provide the data to Army, or their contractor, for their use or we can set up a phone call to discuss so we are sure what the Army is looking for as part of the PBC program.
A-25	3-3	Section 3.2.2, Pg 3-3, Lines 7-9	Section 3.2.2. The results of the field measurements were not located in the report.	Please tabulate the field measurements and include in the report.	Although field measurements were collected as part of the groundwater sampling event per the FWGWMP requirements, it is to Shaw's regret, that the tabulated field measurements collected was inadvertently lost during demobilization from the RVAAP in January 2008. A sentence will be included at the end of Section 3.2.2 – Field Measurements that will state the following: "The field measurement data collected as part of the Shaw baseline groundwater sample event was inadvertently lost during demobilization activities in

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					January 2008 and was not available for inclusion in this RACR."
USACE (Cynthia A. Ries, P.E., Rec'd 27 Mar 2008)					
A-26	Review signature page		USACE needs the contractor's statement of independent technical review (ITR), in a format that complies with the USACE quality policy. Also, the review signature page in the document is unsigned.	Please submit required ITR certification with signatures.	An ITR certification page with signature will be included. The review signature page was unsigned because it has historically only been signed when the final is issued to avoid any confusion as to which version is the final document. Please let us know if this needs to be changed – we can sign any versions as needed.
A-27	Table of Contents		Section 5.0. The end of line 28 extends beyond the right margin.	Perhaps shorten the title, or change "AND" to "&" to keep it within the right margin.	The title in Section 5.0 will be shortened by changing "AND" to "&".
A-28	Acronyms		• Change BRACO to BRACD, e.g. "Division" at the end instead of "Office" • For CERCLA, "Response" should appear before "Compensation". • For HAZWOPER, add "and Emergency Response" to the end • LCG should be Louisville Chemistry Guideline. • NPDES: Change "Pollution" to "Pollutant" • RDX. The acronym definition given on page v differs from the definition in the text on pages 1-1 and 3-5. For consistency, please use the		• "BRACO" will be changed to "BRACD" throughout the document • For CERCLA, "Response" will appear before "Compensation". • For HAZWOPER, "Emergency Response" will be added to the end • "Chemical" will be changed to "Chemistry" for Louisville Chemistry Guideline. • For NPDES, "Pollution" will be changed to "Pollutant" • For RDX, the definition in the acronym list will be change to "Cyclotrimethyltrinitramine or Cyclonite".

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			same definition in the text as used in the acronym list.		
A-29	Appendix List	Page vi	Lines 17-19: States that, due to their size, Appendices C through O are provided on CD-ROM. This is ok with LRL; however, we assume that printed copy will be provided with the Draft. Please confirm.		The size of the combined analytical data packages alone is greater than 20,000 pages; therefore, Shaw was not anticipating sending hard copies with the Draft report unless specifically requested. We can confirm with all parties as to who would need printed copies.
A-30	Page 1-1 Line 4		Text refers to "…Fixed-Price Remediation *Insured*…"	Should "*Insured*" be "*Insurance*", as noted in acronym list?	"Insured" will be replaced by "Insurance".
A-31	Page 1-1, line 21		Change "," to ";" after the word "south".		"," will be changed to ";" after the word "south".
A-32	Page 1-1 Lines 17-31	Section 1.2, Pg 1-1, Lines 17-38	On recent document submittals, the OHARNG has requested that the text provided in the recommendation column be used as the facility description. OHARNG's recent comment/ recommendation are provided in the recommendation column of this table. Check text to ensure that there are no deviations in the text for approved facility description.	Recent comment/ recommendation from OHARNG for other deliverables: "…Please insert the approved facility description…" "…Please insert the following as the facility description: 'RVAAP is located in northeastern Ohio within Portage and Trumbull Counties, approximately 1.6 km (1 mile) northwest of the city of Newton Falls and 4.8 km (3 miles) east-northeast of the city of Ravenna. The facility is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. As of	Shaw will revise page 1-1, Lines 17-31 to state the following: "RVAAP is located in northeastern Ohio within Portage and Trumbull Counties, approximately 1.6 km (1 mile) northwest of the city of Newton Falls and 4.8 km (3 miles) east-northeast of the city of Ravenna (**Figure 1-1**). The facility is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east (**Figure 1-2**). As of February 2006, a total of 20,403 acres of the former 21,683-acre RVAAP have been transferred to the United States Property and

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				February 2006, a total of 20,403 acres of the former 21,683-acre RVAAP have been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the Ohio Army National Guard for use as a training site. Currently, RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the Ravenna Training and Logistics Site (RTLS). RVAAP's remaining parcels of land are located completely within the RTLS. RTLS did not exist when RVAAP was operational, and the entire 21,683-acre parcel was a government-owned, contractor-operated industrial facility. The RVAAP IRP encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP and therefore references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current RTLS and RVAAP, unless otherwise specifically stated.'"	Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a training site. Currently, RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the Ravenna Training and Logistics Site (RTLS). RVAAP's remaining parcels of land are located completely within the RTLS. RTLS did not exist when RVAAP was operational, and the entire 21,683-acre parcel was a government-owned, contractor-operated industrial facility. The RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP and; therefore, references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current RTLS and RVAAP, unless otherwise specifically stated. The Ohio Environmental Protection Agency (OhioEPA) is the lead regulatory agency for the remediation conducted by the Army under the U.S. Department of Defense (DoD) IRP."
A-33	Page 1-1, lines 24 and 35		Line 24: Change "BRACO" to "BRACD". Line 35: Insert a comma after "(RDX)".	Check entire document and change BRACO to BRACD.	Reference to BRAC will be removed from the text with the revision of the facility description included in Comment A-32. A comma will be inserted after

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					(RDX). This line has changed to Line 9 on Pg 1-4.
A-34	Appendix A, Construc-tion As-Built Drawings		• The Construction As-Built Drawings in Appendix A do not appear to depict all the buildings at the Load Lines. For example, for Load Line 2, I do not see buildings DC-1, DB4VP1, DB4WN, DB4WS, DB10VP1, DB10VP2, DB20 (or is DB-20A the same as DB20?). Should building DA-21 be labeled as DB21? DB25? DA28? DA28A? DB29? 2-51? 2-51A?	Please check the drawings in Appendix A for presence of all buildings, as noted in building inventory maintained by BRAC (Irv Venger). Add any missing buildings to the drawings. If it is not intended to depict all load line buildings, because some are remote from the Shaw remediation areas, then add a note of explanation to the drawings. If Shaw needs a building inventory list, please request.	The purposes of the drawings are to provide a reference of the remediated areas in relation to former load line locations but not necessarily to every building location. Although, these drawings are similar to the ones that have been used during the RI, FS and work plan preparation process performed by Shaw and other contractors and the format has been previously approved by USACE and OhioEPA, we will add a note on each of the site drawings that states "These drawings are for remediation purposes only and may not include all current and former buildings in each load line". For the buildings that appear on the drawings, the building numbers (i.e. DB-20A and DA-21) appear consistent with past drawings prepared for each of the load lines by Shaw and other contractors.
A-35	Appendix A, Construc-tion As-Built Drawings		• Symbol for Antimony should be "Sb". • RDX is identified as "cyclonite", which differs from definition in acronym list. If this is common convention, however, it may remain as is. • The drawings identify preparer as USACE, Louisville District. Since	Please check and revise all Appendix A drawings as needed.	• The correct symbol for Antimony "Sb" will be included in the drawings. • The definition in the acronym list references "cyclonite" which is an abbreviated version of "cyclotrimethyltrinitramine". • Each drawing will be revised to incorporate the Shaw logo and revision date as requested.

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			Shaw has modified them, please add Shaw logo/note with revision date.		
A-36	Page 2-1, lines 6 and 7		• Line 6: Is there a typo after "U.S.C."? Should the character be "§"? • Line 7: Change ";" to ":" after the word "criteria".		• On line 6, the symbol "t" will be replaced with "§". • On line 7, ";" will be changed to ":" after the word "criteria".
A-37	Page 2-1, line 19		Change ";" to "," after the word "landfill".		On line 19, ";" will be changed to "," after the work "landfill".
A-38	Section 2.3, page 2-2, lines 1-6		No changes are necessary. USACE, Louisville, needs to issue a contract modification to de-scope the post-construction groundwater monitoring and slab maintenance; warranty period; and any de-scope related to seeding.		
A-39	Section 2.3.1, lines 9-11		States that USACE "has removed" the 5-year period of groundwater monitoring from Shaw's scope of work.	Please revise to state the USACE "intends" to remove this from Shaw's scope of work, since the contract modification has not yet been processed. It is scheduled to be completed by 30 April 08.	The sentence will be revised to state the following: "USACE intends to remove this task from Shaw's scope of work and anticipates performing it under the Facility-Wide Groundwater Monitoring Program (FWGWMP) or another contract."
A-40	Section 2.3.2, lines 14-19		• Please revise the 1st sentence of Section 2.3.2. Although the sentence is understood, it is a run-on. • Recommend revising the 2nd sentence of Section 2.3.2 to indicate that BRAC has already contracted for removal of slabs and foundations at LL 2, 3, and 4. BRAC started slab and foundation removal in		• The 1st sentence of Section 2.3.2 will be revised to state the following: "The selected remedy requires periodic monitoring of the concrete slabs that remain in place to ensure that the integrity of the slabs has not been compromised. The slabs provide adequate barriers to prevent precipitation from infiltrating to impacted soils beneath".

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			March 2008.		• Shaw will revise the second sentence in Section 2.3.2 to state "BRACD has already contracted for removal of slabs and foundations at LL 2, 3, and 4. BRACD started slab and foundation removal in March 2008."
A-41	Section 3.0 and Referen-ces		Several "Final" Shaw deliverables are cited as references, but do not appear to be in REIMS. Please forward these to Pat Ryan at SAIC so that they can be added to REIMS. Noted deliverables that do not appear to be in REIMS include: A)RAWP, Shaw 2007b. B)SHERP, Shaw 2004e. C)Security, Emergency Response, & Contingency Plan, Shaw 2004f. D) Project Coordination Plan, Shaw 2006a. E) Field Sampling Plan Addendum No. 1 …Shaw 2006b. F) QAMP, Shaw 2006d. G)SAP Addendum No. 1…Shaw 2006f.		Shaw has included electronic versions with the hard copies of all plans and reports submitted to the RVAAP library under this contract so it is unclear as to why they have not been loaded onto the REIMS; however, Shaw will contact Pat Ryan to ensure that all documents are accounted for.
A-42	Referen-ces		• Ref. 1. Delete "(OEPA)". • Ref. 3. Delete "the" after "for" in line 7. • All references. Some of the references have titles enclosed by quotation marks, but not all. Revise for consistency.		• OEPA will be deleted from reference no. 23. • "the" will be deleted after "for" in line 7. • The quotations will be removed from the titles of the references in order to be consistent. • #24 – The year "2004" is

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			• #24. The year "2004" appears twice in the reference.		intended since the reference is listed in the document as "USACE 2004".
A-43	Section 3.1.1, Line 9		Delete "-" after the word "all".		"-" will be deleted after the word "all" in line 9.
A-44	Section 3.1.1		Clarification requested. Although NPDES is an ARAR, isn't it only necessary to comply with the substantive requirements, not the administrative, e.g., permitting, requirements? Were the NPDES permit and SWPPP, as *administrative* requirements, necessary?		The NPDES permit and SWPPP were an administrative requirement per the direction of the Mr. Tim Morgan from OHARNG and the RVAAP. In an email dated 3/14/07, Mr. Morgan stated the following: "If you plan to disturb 1 or more acres of earth (combined disturbance for the project) then you'll need coverage under the Ohio EPA general NPDES permit for storm water discharges associated with construction activity. The permit needs to be in the landowners name (BRACD since you are working on their property in the load lines) and all contractors working on the site need to be co-permittees under the landowner permit. The way the OHARNG works this is to require all contractors to develop the Storm Water Pollution Prevention Plan (SWPPP) and submit the Notice of Intent (NOI) for coverage and fee for the government. Coverage is a requirement under state law." These requirements were further enforced by the RVAAP Facility Manager, USACE COR, Mr. John Jent and the OhioEPA Facility Coordinator, Ms. Eileen Mohr.
A-45	Section 3.2.1, lines		• In line 27, use of the word "proposed" implies that the		• Line 27: "Proposed" will be replaced by "baseline".

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	27, 31, 33 and 34		wells are not already existing. Would "baseline" or "existing" be a better word choice? • Line 31. Remove "-" after the word "one". • Line 33. Revise "redevelopment *were accomplished*…" Line 34. Reference to section 4.3.2.3.11.1 is made. Please verify that this is correct.		• Line 31: "-" will be removed after the word "one" in line 31. • Line 33: This sentence will be revised to state"…redevelopment were completed as required…." • Line 34: reference to section 4.3.3.3.11.1 in the Facility-Wide Sampling Plan is correct.
A-46	Section 3.2.3, line 18		Change "form" to "from".		"form" will be changed to "from".
A-47	General		Was the "Ravenna full suite", including pesticides and herbicides, analyzed for 10% of samples? Even if the results are in appendix, please address in the report text as well.		Section 3.2.5 Field Quality Control Sampling Procedures states "Duplicate samples were collected at a frequency of 10% of the field sample collected". This sentence will be revised to state "Duplicate samples *for the full suite including pesticides and herbicides* were collected at a frequency 10% of the field samples collected."
A-48	Section 3.2.8, lines 22-23	Line 23-24	Understand the sentence, but it seems awkward. Would the text read better if it stated that "..the purpose of the initial groundwater sampling activities was to identify presence of contaminants in groundwater prior to initiation of Shaw construction activities…"?		Shaw will revise this sentence to state the following: "The purpose of the initial groundwater sampling activities was to identify presence of contaminants in groundwater prior to initiation of Shaw construction activities."
A-49	Section 3.2.8		It would be helpful of the MCLs and secondary standards		The MCLs, secondary standards, Region 9 PRGs and RVAAP

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			were identified in the baseline groundwater data table in Appendix B.		background concentrations have been included in the groundwater tables for comparison purposes.
A-50	Section 3.2.8, page 3-5, line 15		Should "taken" be "sampled"? Check comma and semicolon usage.		This section has been revised extensively to discuss results in comparison to the RVAAP criteria per comments by Rick Hockett. Shaw will issue text for review prior to issuing the Draft report.
A-51	Section 3.3.4		States that a NOT will not be submitted until all areas are stabilized and vegetation is established. Is Shaw not proposing to skip vegetation of those areas which are likely to be disturbed by the BRAC contractor during slab removal? Shaw may have to reassess timing of NOT submittal, particularly if seeding is delayed until after slab removals are complete.	Report text change is not needed. Regardless of who completes seeding, the NOT submittal should not occur until after final stabilization is complete.	The NOI only covers activities performed by Shaw as part of the remediation action for the soils and dry sediments and does not address impacts to soils disturbed by others. It was originally Shaw's intention to restore all areas disturbed during remediation activities; however, Shaw does not consider itself to be responsible for excavation areas that were backfilled and reseeded and then disturbed by the BRAC contractor performing slab removal. Shaw intends to return to the outstanding areas requiring seeding at the beginning of May 2008 in order to take advantage of the growing season. Once vegetation begins to establish itself, Shaw will submit for the NOT for those areas recently seeded and incorporate language in the NOT that other areas are considered complete by Shaw and since there has been subsequent follow on work by the Army.
A-52	Section 3.3.6, line 31 and Section		Delete "-" after "on".		"-" after "on" will be deleted on this line.

Cmt.#	Page # Line #	New Page or Sheet	Comment	Recommendation	Response
	3.4.2, line 13				
A-53	Section 3.5.4, page 3-12, lines 5-6		"…that it is electron capturing and…" Text here seems awkward. Consider revising.		This section has been revised extensively per comments received by from Kathy Krantz, in particularly comment A-1. Shaw will provide text for review prior to issuing the Draft report.
A-54	Section 3.6.1, line 28 and lines 30-37	Pg 3-17, Line 8	• Line 28: Change "disposal" to "disposable". • Lines 28-31: Text states that the aliquots were placed into a clean plastic-lined bucket and combined to make a single sample. A max of 1 kg was then removed and placed into a labeled pre-cleaned container. Is this allowed by either the Guidance for MI Sampling procedures, or the Final RAWP? In my experience, this is not acceptable when doing MI sampling. • Line 33: States that 20 aliquots were collected from smaller excavation areas. Is this allowed by the MI Sampling procedures, or Shaw's Final RAWP? In my experience, 30 aliquots is the minimum based on the underlying statistical theory.		• "disposal" will be changed to "disposable". • Please see response to comment A-3 regarding sample weight submitted for MI processing. This methodology was agreed upon by USACE and OhioEPA prior to implementing field sampling activities. • This sampling methodology was requested by the Ohio EPA Facility Coordinator, Ms. Eileen Mohr in concurrence with the USACE COR, Mr. John Jent. Section 3.6.1 of the RAWP specifies this sampling methodology.
A-55	Section 3.6.2, line 8	Pg 3-17, Line 28	Recommend replacing ";" with ":" after the word "Shaw".		";" will be replaced with ":" after the word "Shaw".
A-56	Section 3.6.3 and		Defer to USACE chemist (Kathy Krantz) comments.		Ms. Krantz's chemistry comments have been addressed and the

Cmt.#	Page # Line #	New Page or Sheet	Comment	Recommendation	Response
	GENERAL				responses are included as part of this response to comment. Please see responses to comments A-1 through A-20.
A-57	Section 3.6.4, lines 17, 32	Pg 3-19, Line 6 Pg 3-19, Line 29 Pg 3-20, Line 12, 25 and 34	Did Shaw intend to state "…one of the following *reasoning*"? Suggest changing ";" to ":". Revise line 32. Suggest deleting the semicolon after "metals". Same comment for Section 3.6.4.2, 3.6.4.3, and 3.6.4.4.		";" will be replaced with ":" after the word "reasoning". ";" will be replaced with ":" following metals for the sections noted.
A-58	Sections 3.8.1 and 3.9		Section 3.8.1 states that Shaw applied seed to the completed areas "as best as possible" since remediation extended past the normal growing season for the required seed mixtures. Section 3.9 then states that it is expected that future BRAC demolition will disturb areas previously backfilled and seeded by Shaw, and that restoration of these areas following demolition will be addressed by the Army. The USACE generally agrees with the report text in this regard; however, another site visit is anticipated to resolve the issue.		Shaw anticipates returning to the facility at the beginning of May 2008 to seed areas that were not able to be seeded at the end of remediation activities last year. However, Shaw does not anticipate seeding or reseeding areas that were initially backfilled and seeded by Shaw and then disturbed as a result of slab demolition activities. Shaw has previously provided the Army with documents showing areas to be reseeded.
A-59	Page 4-4, line 3		Change operating contractor to "PIKA" throughout document. (PIKA = PIKA International,		"MKM" will be changed to "PIKA" when referring to operating contractor throughout the document.

Cmt.#	Page # Line #	New Page or Sheet	Comment	Recommendation	Response
			Inc.)		
A-60	Page 4-4, line 7		Insert the word "and" after the word "disposal".		The word "and" will be inserted after the work "disposal".
A-61	Table 4-1 and elsewhere		Is "Hubkill" the correct company name of the disposal facility/location? Is it Hubkill or Hukill? Please verify.		The correct disposal facility name is "Hukill". This correction will be made in the document.
A-62	Table 4-1 and elsewhere		Change "County Wide Landfill" to "Countywide Landfill".		"County Wide Landfill" will be changed to "Countywide Landfill".
A-63	Section 3.6.4.1 and Section 5.1		These sections state that COC concentrations have been reduced to below the applicable cleanup goals with the exception of one Arochlor, 1254, at LL1ss-029 at concentration of 54 mg/kg (cleanup goal = 35 mg/kg). The text further states that Ohio EPA and USACE agreed that further excavation was not possible. Is there any email or other documentation available to identify date discussed/persons involved regarding this decision?		Yes, there is correspondence from Ms. Eileen Mohr, OhioEPA Facility Coordinator which includes concurrence that Shaw remediated to the best extent possible at this location. This document will be included in the reference section and referenced in the report.
A-64	Section 5.2.1, page 5-1, line 13		Correct the verb tense: "…objectives of the QAPP Addendum *is* to…"		"is" will be changed to "are" in this sentence.
A-65	Section 5.2.3.1, line 28		*Louisville Chemical Guidelines* should be *Louisville Chemistry Guideline*. Insert "of" after "Evaluation" in line 29?		• "Chemical" will be changed to "Chemistry". • "of" will be inserted after "Evaluation".

APPENDIX A
CONSTRUCTION AS-BUILT DRAWINGS

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LIST OF DRAWINGS

Figure A-1 - Load Line 1

Figure A-2 - Load Line 2

Figure A-3 - Load Line 3

Figure A-4 - Load Line 4

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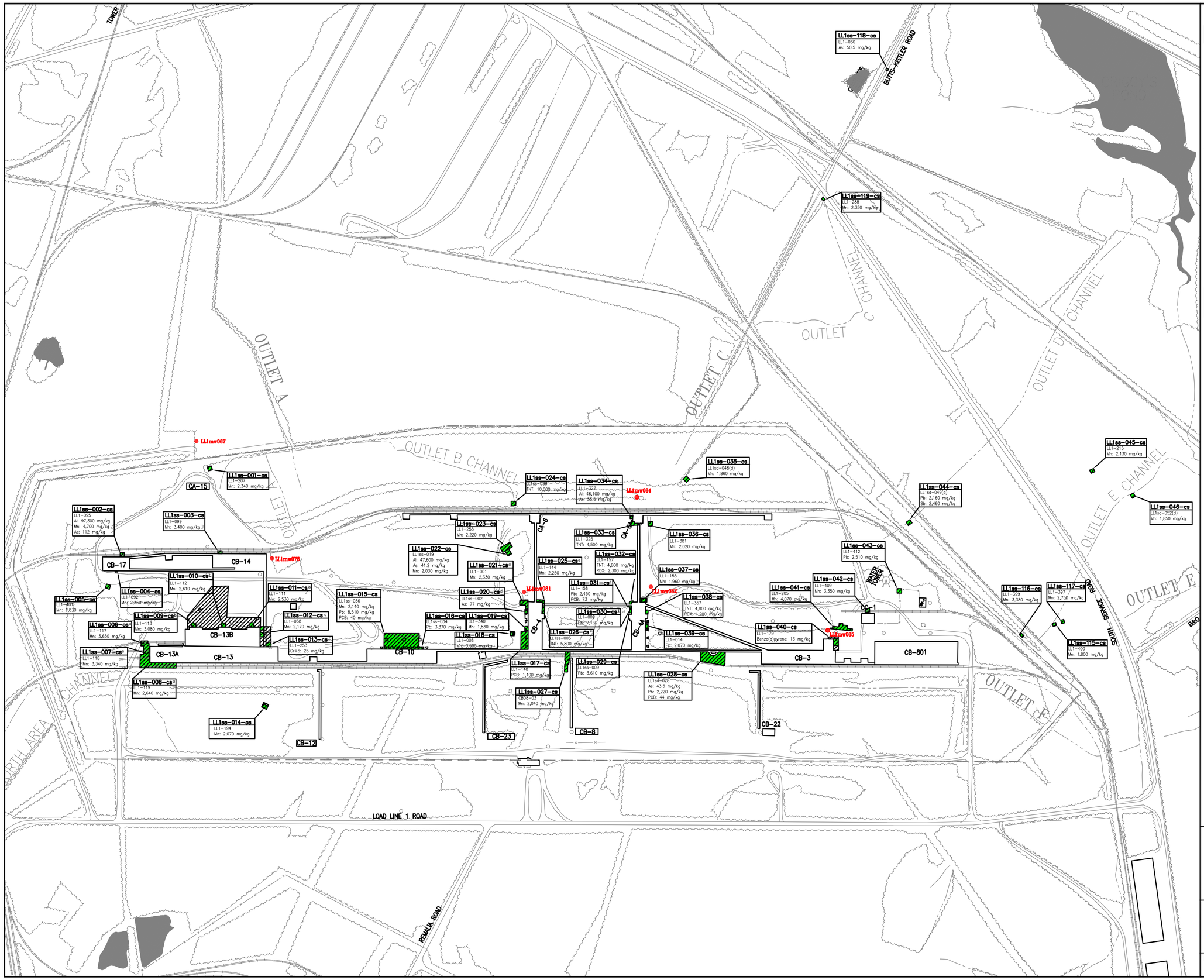

LEGEND:

- BUILDING
- ASPHALT ROAD
- GRAVEL ROAD
- RAILROAD TRACKS
- FENCE LINE
- POND
- STREAM
- TREE OR TREELINE
- LOAD LINE 1 AOC BOUNDARY
- LL1mw084 — BASELINE MONITORING WELL
- SOIL/DRY SEDIMENT REMOVAL AREA
- MULTI-INCREMENT SAMPLE AREA

LL1ss-001-cs — SHAW CONFIRMATORY SAMPLE LOCATION IDENTIFICATION
LL1-207
Mn: 2,340 mg/kg — PREVIOUS INVESTIGATION SAMPLE LOCATION AND CONTAMINANT CONCENTRATION(S)

NOTES AND ABBREVIATIONS:

1. EXCAVATIONS WITH LIKE CONTAMINANTS OR SAMPLE POINTS IN CLOSE PROXIMITY WERE COMBINED AS NECESSARY. THE COMBINED SAMPLE LOCATIONS AT LOAD LINE 1 INCLUDE THE FOLLOWING LOCATIONS:
   - a LL1ss-006-cs
   - b LL1ss-009-cs
   - c LL1ss-012-cs
   - d LL1ss-020-cs
   - e LL1ss-025-cs
   - f LL1ss-029-cs
2. A MULTI-INCREMENT SAMPLE WAS COLLECTED AT LL1ss-118-cs ONLY. NO EXCAVATION WAS REQUIRED.
3. Al – ALUMINUM
   Sb – ANTIMONY
   As – ARSENIC
   Cr+6 – HEXAVALENT CHROMIUM
   Mn – MANGANESE
   Pb – LEAD
   PCB – POLYCHLORINATED BIPHENYL
   RDX – CYCLONITE
   TNT – TRINITROTOLUENE
   mg/kg – MILLIGRAMS PER KILOGRAM
4. THIS PURPOSE OF THIS DRAWING IS TO PROVIDE REFERENCE TO THE REMEDIATION AREAS ONLY AND MAY NOT INCLUDE ALL CURRENT OR FORMER BUILDING LOCATIONS ON EACH LOAD LINE.

OHIO STATE PLANE (NAD 83)

0 125 250 500
SCALE: 1" = 250'

Shaw
Environmental & Infrastructure, Inc.

LOAD LINE 1
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

DRAWN BY:	REV. NO./DATE:	CAD FILE:
DCC	2 / 06/25/08	LL1_COR.DWG

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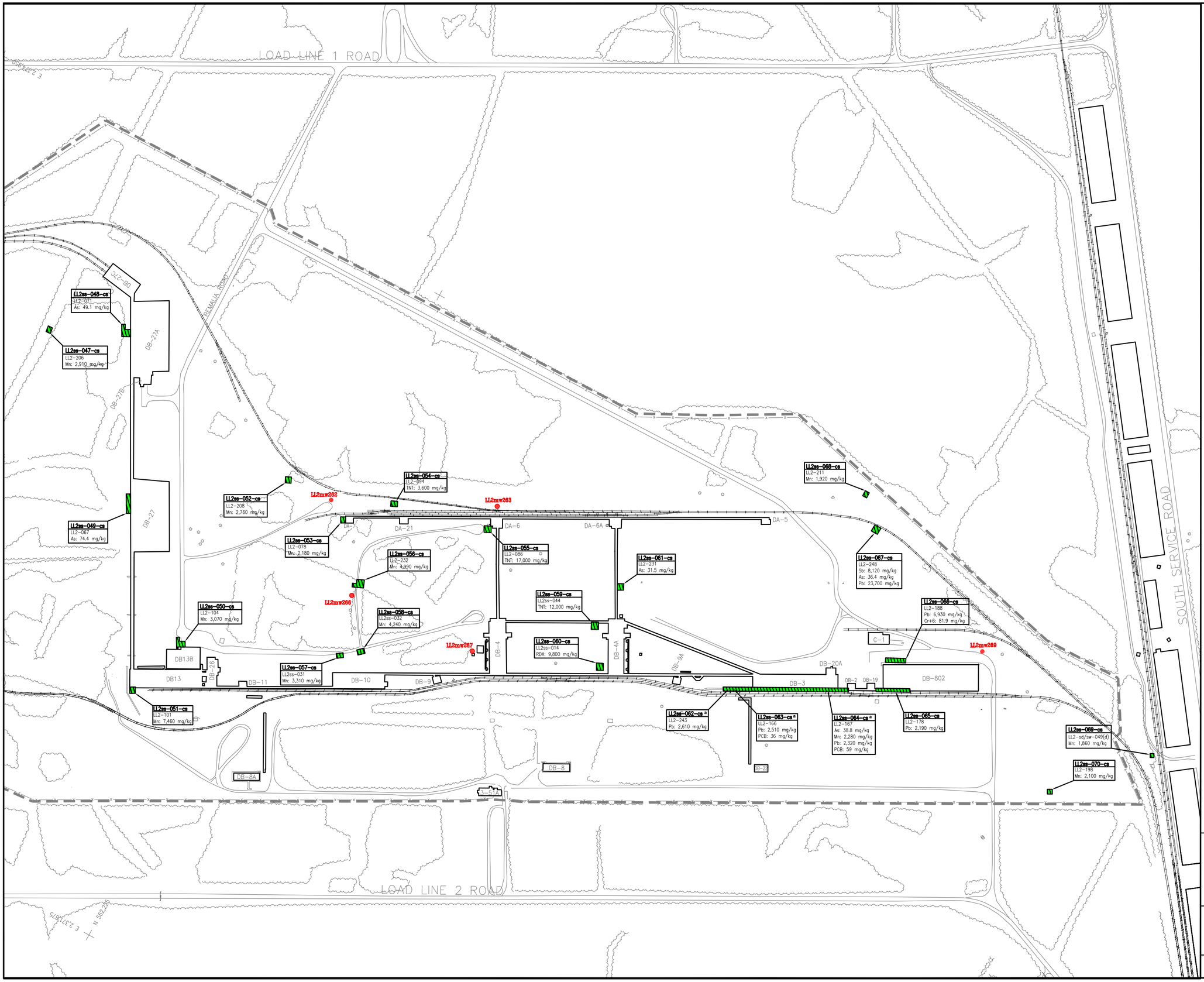
Figure A-1. Load Line 1 - Areas of Soil and Dry Sediment Removal and Multi-Increment Sample Locations



LEGEND:

- BUILDING
- ASPHALT ROAD
- GRAVEL ROAD
- RAILROAD TRACKS
- FENCE LINE
- STREAM
- TREE OR TREELINE
- LOAD LINE 2 AOC BOUNDARY
- LL2mw263 — BASELINE MONITORING WELL
- SOIL/DRY SEDIMENT REMOVAL AREA
- MULTI-INCREMENT SAMPLE AREA
- LL2ss-047-cs / LL2-206 / Mn: 2,910 mg/kg — SHAW CONFIRMATORY SAMPLE LOCATION IDENTIFICATION; PREVIOUS INVESTIGATION SAMPLE LOCATION AND CONTAMINANT CONCENTRATION(S)

NOTES AND ABBREVIATIONS:

1. EXCAVATIONS WITH LIKE CONTAMINANTS OR SAMPLE POINTS IN CLOSE PROXIMITY WERE COMBINED AS NECESSARY. THE COMBINED SAMPLE LOCATIONS AT LOAD LINE 2 INCLUDE THE FOLLOWING LOCATION:
   a LL2ss-062-cs
3. Sb – ANTIMONY
   As – ARSENIC
   Cr+6 – HEXAVALENT CHROMIUM
   Mn – MANGANESE
   Pb – LEAD
   PCB – POLYCHLORINATED BIPHENYL
   RDX – CYCLONITE
   TNT – TRINITROTOLUENE
   mg/kg – MILLIGRAMS PER KILOGRAM
4. THE PURPOSE OF THIS DRAWING IS TO PROVIDE REFERENCE TO THE REMEDIATION AREAS ONLY AND MAY NOT INLCUDE CURRENT OR FORMER BUILDING LOCATIONS.

OHIO STATE PLANE (NAD 83)

0 115 230 460
SCALE: 1" = 170'

Shaw
Environmental & Infrastructure, Inc.

LOAD LINE 2
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

DRAWN BY:	REV. NO./DATE:	CAD FILE:
DCC	2 / 06/25/08	LL2_COR.DWG

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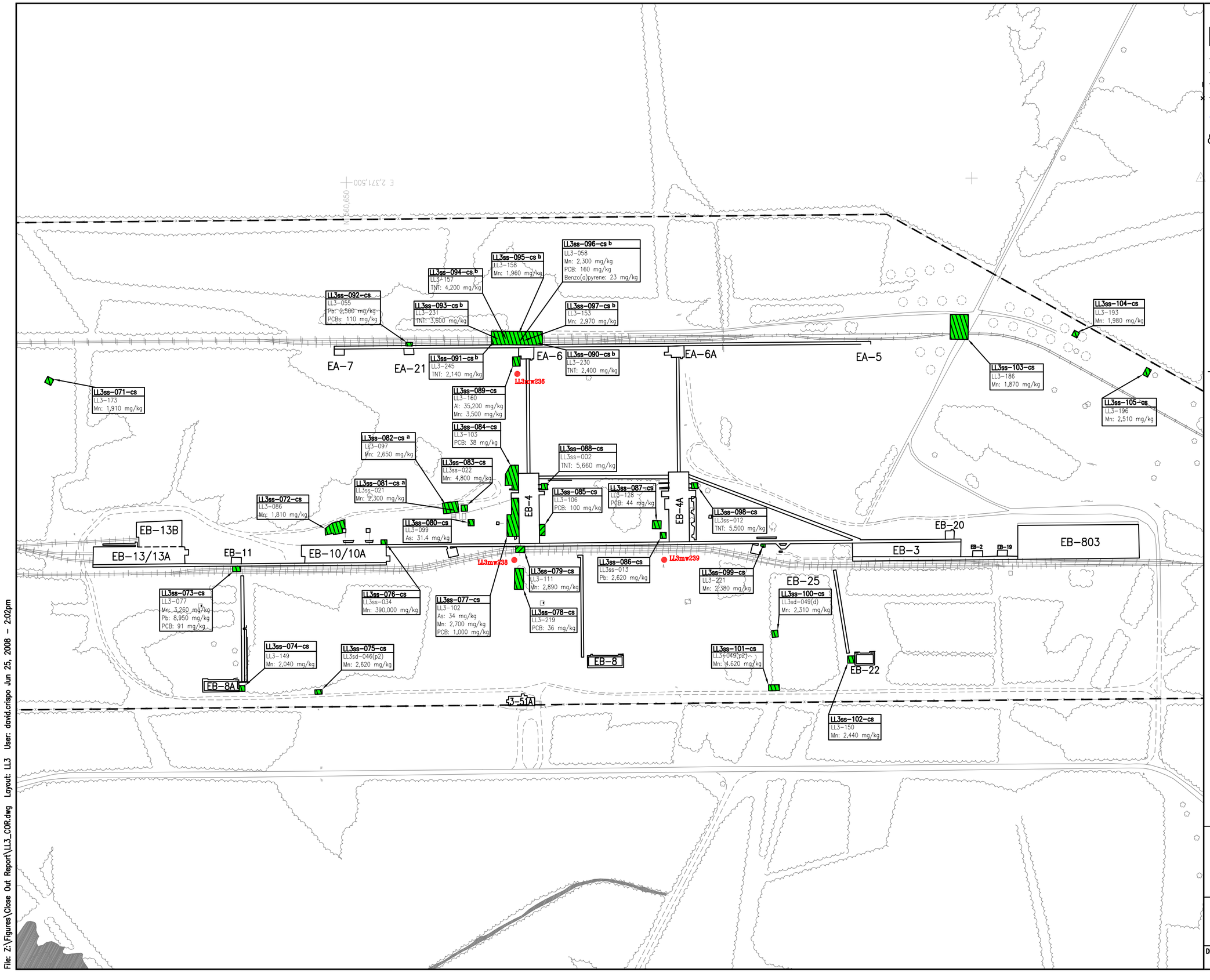
Figure A-2. Load Line 2 - Areas of Soil and Dry Sediment Removal and Multi-Increment Sample Locations



LEGEND:

- BUILDING
- ASPHALT ROAD
- GRAVEL ROAD
- RAILROAD TRACKS
- FENCE LINE
- STREAM
- TREE OR TREELINE
- LOAD LINE 3 AOC BOUNDARY
- LL3mw239 — BASELINE MONITORING WELL
- SOIL/DRY SEDIMENT REMOVAL AREA
- MULTI-INCREMENT SAMPLE AREA
- LL3ss-071-cs / LL3-173 / Mn: 1,910 mg/kg — SHAW CONFIRMATORY SAMPLE LOCATION IDENTIFICATION; PREVIOUS INVESTIGATION SAMPLE LOCATION AND CONTAMINANT CONCENTRATION(S)

NOTES AND ABBREVIATIONS:

1. EXCAVATIONS WITH LIKE CONTAMINANTS OR SAMPLE POINTS IN CLOSE PROXIMITY WERE COMBINED AS NECESSARY. THE COMBINED SAMPLE LOCATIONS AT LOAD LINE 3 INCLUDE THE FOLLOWING:
   - **a** LL3ss-081-cs
   - **b** LL3ss-096-cs
2. Al – ALUMINUM
   As – ARSENIC
   Mn – MANGANESE
   Pb – LEAD
   PCB – POLYCHLORINATED BIPHENYL
   TNT – TRINITROTOLUENE
   mg/kg – MILLIGRAMS PER KILOGRAM
3. THE PURPOSE OF THIS DRAWING IS TO PROVIDE REFERENCE TO THE REMEDIATION AREAS ONLY AND MAY NOT INCLUDE CURRENT OR FORMER BUILDING LOCATIONS.

OHIO STATE PLANE (NAD 83)

0 85 170 340
SCALE: 1" = 170'

Shaw
Environmental & Infrastructure, Inc.

LOAD LINE 3
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

DRAWN BY:	REV. NO./DATE:	CAD FILE:
DCC	2 / 06/25/08	LL3_COR.DWG

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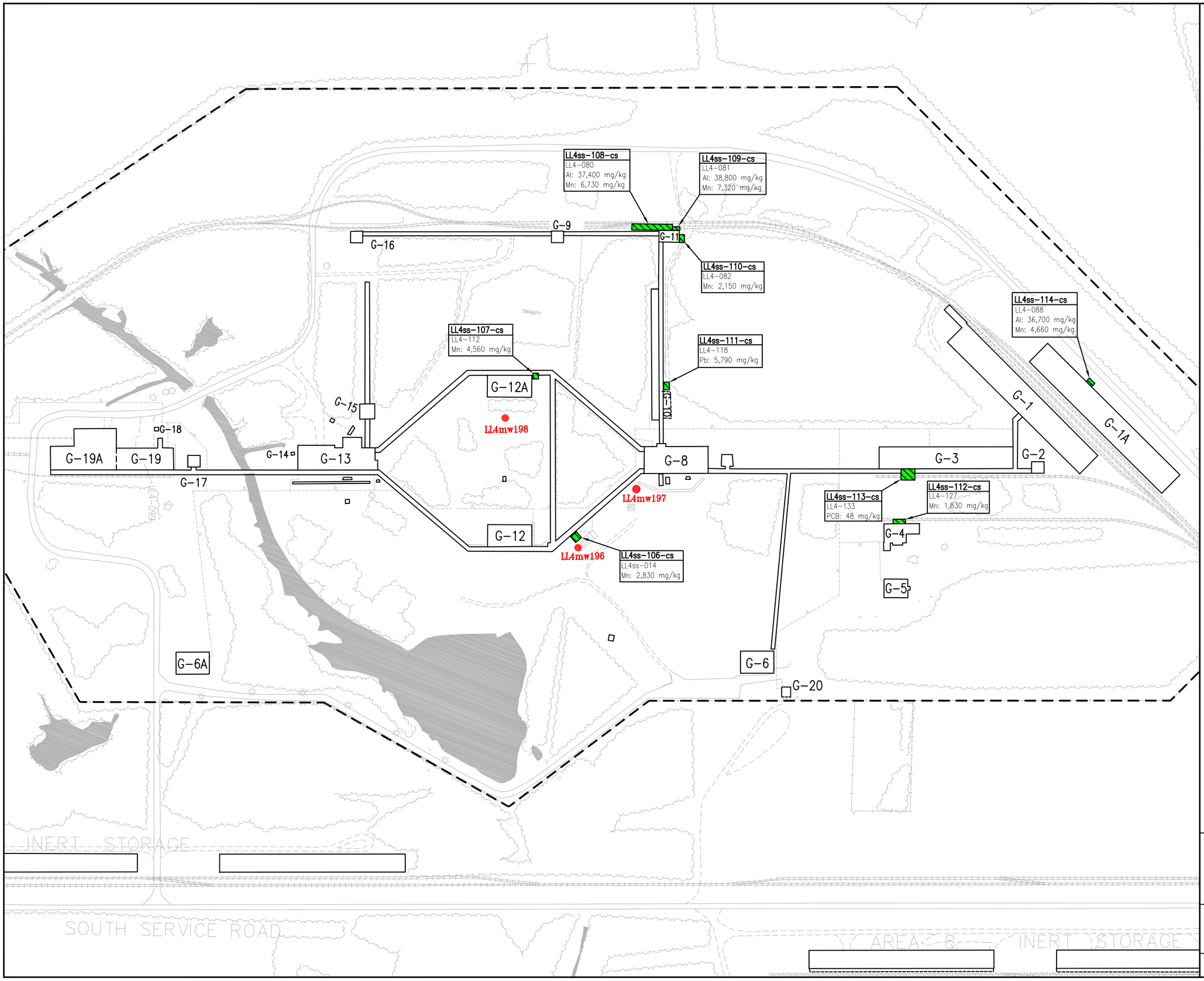
Figure A-3. Load Line 3 - Areas of Soil and Dry Sediment Removal and Multi-Increment Sample Locations



LEGEND:

- BUILDING
- ASPHALT ROAD
- GRAVEL ROAD
- RAILROAD TRACKS
- FENCE LINE
- POND
- STREAM
- TREE OR TREELINE
- LOAD LINE 4 AOC BOUNDARY
- LL4mw196 — BASELINE MONITORING WELL
- SOIL/DRY SEDIMENT REMOVAL AREA
- MULTI-INCREMENT SAMPLE AREA

LL4ss-110-cs
LL4-082
Mn: 2,150 mg/kg

- SHAW CONFIRMATORY SAMPLE LOCATION IDENTIFICATION
- PREVIOUS INVESTIGATION SAMPLE LOCATION AND CONTAMINANT CONCENTRATION(S)

NOTES AND ABBREVIATIONS:

1. Al – ALUMINUM
   Mn – MANGANESE
   Pb – LEAD
   PCB – POLYCHLORINATED BIPHENYL
   mg/kg – MILLIGRAMS PER KILOGRAM

2. THE PURPOSE OF THIS DRAWING IS TO PROVIDE REFERENCE TO THE REMEDIATION AEAS ONLY AND MAY NOT INCLUDED CURRENT OR FORMER BUILDING LOCATIONS.

OHIO STATE PLANE (NAD 83)

0 70 140 280
SCALE: 1" = 140'

Shaw
Environmental & Infrastructure, Inc.

LOAD LINE 4
RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

DRAWN BY:	REV. NO./DATE:	CAD FILE:
DCC	2 / 06/25/08	LL4_COR.DWG

File: Z:\Figures\Close Out Report\LL4_COR.dwg Layout: LL4 User: david.crispo Jun 25, 2008 - 2:00pm

Figure A-4. Load Line 4 - Areas of Soil and Dry Sediment Removal and Multi-Increment Sample Locations

APPENDIX B
DATA SUMMARY TABLES

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LIST OF TABLES

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Table B-1
Groundwater Sample Results

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
Volatiles								
Dichlorodifluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	NS	160	0	<0.25	**0.935 J**	**0.514**	**0.378 J**
Vinyl chloride	µg/L	2	0.02	0	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	NS	8.7	0	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	NS	4.6	0	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	NS	810	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	NS	5500	0	<2.5	<2.5	<2.5	**3.28**
Carbon disulfide	µg/L	NS	1000	0	<0.5	<0.5	<0.5	<0.5
Methyl acetate	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	NS	1300	0	<0.25	<0.25	<0.25	<0.25
Methyl tert-butyl ether	µg/L	NS	NS	0	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	7	NS	0	<0.5	<0.5	<0.5	<0.5
2-Butanone	µg/L	NS	7000	0	<2.5	<2.5	<2.5	<2.5
Chloroform	µg/L	NS	0.17	0	<0.125	<0.125	<0.125	<0.125
1,1,1-Trichloroethane	µg/L	NS	3200	0	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	5	0.17	0	<0.25	<0.25	<0.25	<0.25
Benzene	µg/L	5	0.35	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	5	0.12	0	<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L	5	0.028	0	<0.25	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	5	0.16	0	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	1000	720	0	<0.25	<0.25	<0.25	<0.25
cis-1,3-Dichloropropene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
4-Methyl-2-pentanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
trans-1,3-Dichloropropene	µg/L	NS	0.4	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	NS	0.2	0	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	5	0.1	0	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	NS	110	0	<0.125	<0.125	<0.125	<0.125
Ethyl benzene	µg/L	700	1300	0	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	10000	10000	0	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	100	1600	0	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	NS	8.5	0	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	NS	0.43	0	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	NS	NS	0	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	NS	NS	0	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	70	NS	0	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	100	NS	0	<0.25	<0.25	<0.25	<0.25
Semi-Volatiles								
Dibenzo(a,h)Anthracene	µg/L	NS	0.0093	0	<2.75	<2.69	<2.55	<2.55
Di-n-octylphthalate	µg/L	NS	1500	0	<2.75	<2.69	<2.55	<2.55
Dibenzofuran	µg/L	NS	12	0	<2.75	<2.69	<2.55	<2.55
Diethylphthalate	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Dimethylphthalate	µg/L	NS	360000	0	<2.75	<2.69	<2.55	<2.55
Fluoranthene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Fluorene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
Hexachlorobenzene	µg/L	1	0.042	0	<2.75	<2.69	<2.55	<2.55
Hexachlorobutadiene	µg/L	NS	0.86	0	<2.75	<2.69	<2.55	<2.55
Hexachlorocyclopentadiene	µg/L	50	220	0	<2.75	<2.69	<2.55	<2.55
Bis(2-Chloroethoxy)Methane	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.75	<2.69	<2.55	<2.55
Hexachloroethane	µg/L	NS	4.8	0	<2.75	<2.69	<2.55	<2.55
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0	<2.75	<2.69	<2.55	<2.55
Isophorone	µg/L	NS	71	0	<2.75	<2.69	<2.55	<2.55
N-Nitroso-di-n-propylamine	µg/L	NS	9600	0	<2.75	<2.69	<2.55	<2.55
N-Nitrosodiphenylamine	µg/L	NS	14	0	<2.75	<2.69	<2.55	<2.55
Naphthalene	µg/L	NS	6.2	0	<2.75	<2.69	<2.55	<2.55
Nitrobenzene	µg/L	NS	3.4	0	<2.75	<2.69	<2.55	<2.55
Pentachlorophenol	µg/L	1	0.56	0	<2.75	<2.69	<2.55	<2.55
Phenanthrene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Phenol	µg/L	NS	11000	0	<2.75	<2.69	<2.55	<2.55
Pyrene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
1,1'-Biphenyl	µg/L	NS	NS	0	<22	<21.5	<20.4	<20.4
2,4,5-Trichlorophenol	µg/L	NS	3600	0	<2.75	<2.69	<2.55	<2.55
2,4,6-Trichlorophenol	µg/L	NS	3.6	0	<2.75	<2.69	<2.55	<2.55
2,4-Dichlorophenol	µg/L	NS	110	0	<2.75	<2.69	<2.55	<2.55
2,4-Dimethylphenol	µg/L	NS	730	0	<2.75	<2.69	<2.55	<2.55
2,4-Dinitrophenol	µg/L	NS	73	0	<13.7	<13.4	<12.8	<12.8
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.75	<2.69	<2.55	<2.55
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.75	<2.69	<2.55	<2.55
2-Chloronaphthalene	µg/L	NS	490	0	<2.75	<2.69	<2.55	<2.55
2-Chlorophenol	µg/L	NS	30	0	<2.75	<2.69	<2.55	<2.55
2-Methylnaphthalene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
2-Methylphenol	µg/L	NS	1800	0	<2.75	<2.69	<2.55	<2.55

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
2-Nitroaniline	µg/L	NS	110	0	<13.7	<13.4	<12.8	<12.8
2-Nitrophenol	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
3,3'-Dichlorobenzidine	µg/L	NS	0.15	0	<2.75	<2.69	<2.55	<2.55
3-,4-Methylphenol	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
3-Nitroaniline	µg/L	NS	3.2	0	<13.7	<13.4	<12.8	<12.8
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.75	<2.69	<2.55	<2.55
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	0	<13.7	<13.4	<12.8	<12.8
4-Bromophenyl-phenylether	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
4-Chloro-3-methylphenol	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
4-Chloroaniline	µg/L	NS	150	0	<2.75	<2.69	<2.55	<2.55
4-Chlorophenyl-phenyl ether	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
4-Nitroaniline	µg/L	NS	3.2	0	<2.75	<2.69	<2.55	<2.55
4-Nitrophenol	µg/L	NS	NS	0	<13.7	<13.4	<12.8	<12.8
Acenaphthene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Acenaphthylene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Acetophenone	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Anthracene	µg/L	NS	1800	0	<2.75	<2.69	<2.55	<2.55
Atrazine	µg/L	NS	NS	0	<11	<10.8	<10.2	<10.2
Benzaldehyde	µg/L	NS	NS	0	<11	<10.8	<10.2	<10.2
Benzo(a)anthracene	µg/L	NS	0.092	0	<2.75	<2.69	<2.55	<2.55
Benzo(a)pyrene	µg/L	0.2	0.0092	0	<2.75	<2.69	<2.55	<2.55
Benzo(b)fluoranthene	µg/L	NS	0.092	0	<2.75	<2.69	<2.55	<2.55
Benzo(g,h,i)Perylene	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Benzo(k)fluoranthene	µg/L	NS	0.92	0	<2.75	<2.69	<2.55	<2.55
bis(2-Chloroisopropyl)ether	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
bis(2-Ethylhexyl)phthalate	µg/L	NS	4.8	0	<2.75	<2.69	<2.55	<2.55
Butylbenzylphthalate	µg/L	NS	7300	0	<2.75	<2.69	<2.55	<2.55
Caprolactam	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
Carbazole	µg/L	NS	3.4	0	<2.75	<2.69	<2.55	<2.55
Chrysene	µg/L	NS	9.2	0	<2.75	<2.69	<2.55	<2.55
Di-N-Butylphthalate	µg/L	NS	NS	0	<2.75	<2.69	<2.55	<2.55
Explosives								
1,3-Dinitrobenzene	µg/L	NS	3.6	0	<0.25	<0.255	<0.255	<0.25
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0	<0.25	<0.255	<0.255	<0.25
2,4-Dinitrotoluene	µg/L	NS	73	0	<0.25	<0.255	<0.255	<0.25
2,6-Dinitrotoluene	µg/L	NS	36	0	<0.25	<0.255	<0.255	<0.25
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0	<0.25	<0.255	**0.553 J**	<0.25
2-Nitrotoluene	µg/L	NS	110	0	<0.25	<0.255	<0.255	<0.25
3-Nitrotoluene	µg/L	NS	3.2	0	<0.25	<0.255	<0.255	<0.25
4-Amino-2,6-dinitrotoluene	µg/L	NS	NS	0	<0.25	<0.255	**0.563 J**	<0.25
4-Nitrotoluene	µg/L	NS	3.2	0	<0.25	<0.255	<0.255	<0.25
HMX	µg/L	NS	1800	0	<0.25	<0.255	<0.255	<0.25
Nitrobenzene	µg/L	NS	3.4	0	<0.25	<0.255	<0.255	<0.25
RDX	µg/L	NS	0.61	0	<0.25	<0.255	<0.255	<0.25
1,3,5-Trinitrobenzene	µg/L	NS	1000	0	<0.25	<0.255	<0.255	<0.25
Tetryl	µg/L	NS	360	0	<0.25	<0.255	<0.255	<0.25
Propellants								
Nitrocellulose	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Nitroguanidine	µg/L	NS	NS	0	<25	<25	<25	<25
Metals								
Silver, Dissolved	mg/L	0.1*	0.18	0	<0.005	<0.005	<0.005	<0.005
Barium, Dissolved	mg/L	2	2.6	0.0821	**0.0203**	**0.0115**	**0.0236**	**0.0103**
Beryllium, Dissolved	mg/L	0.004	NS	0	<0.0005	<0.0005	<0.0005	<0.0005
Calcium, Dissolved	mg/L	NS	NS	115	**35.6**	**53.9**	**53.9**	**23**
Cadmium, Dissolved	mg/L	0.005	NS	0	<0.0025	<0.0025	<0.0025	<0.0025

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
Cobalt, Dissolved	mg/L	NS	0.73	0	<0.0025	<0.0025	**0.00748 J**	**0.00301 J**
Chromium, Dissolved	mg/L	0.1	NS	0.0073	<0.0025	<0.0025	<0.0025	<0.0025
Copper, Dissolved	mg/L	1.3*	1.5	0	<0.005	<0.005	<0.005	<0.005
Iron, Dissolved	mg/L	0.3*	11	0.279	<0.025	<0.025	**3.56**	**1.98**
Potassium, Dissolved	mg/L	NS	NS	2.89	**0.785 J**	**3.26**	**2.58**	**1.55**
Magnesium, Dissolved	mg/L	NS	NS	43.3	**11.3**	**8.22**	**13.4**	**11.9**
Manganese, Dissolved	mg/L	0.05*	0.88	1.02	**0.0454**	**0.0559**	**2.09**	**0.693**
Sodium, Dissolved	mg/L	NS	NS	45.7	**2.36**	**4.45**	**2.4**	**1.44**
Nickel, Dissolved	mg/L	0.1	0.73	0	**0.0356 J**	<0.005	**0.0114 J**	**0.00851 J**
Zinc, Dissolved	mg/L	5*	11	0.0609	<0.005	<0.005	**0.0407**	**0.02**
Aluminum, Dissolved	mg/L	NS	36	0	<0.05	<0.05	<0.05	<0.05
Vanadium, Dissolved	mg/L	NS	0.036	0	<0.005	<0.005	<0.005	<0.005
Arsenic, Dissolved	mg/L	0.01	0.000045	0.0117	<0.00025	<0.00025	**0.00102**	**0.00191**
Lead, Dissolved	mg/L	0.015	NS	0	<0.00025	<0.00025	<0.00025	<0.00025
Antimony, Dissolved	mg/L	0.006	0.015	0	**0.00088**	**0.000385J**	<0.00025	<0.00025
Selenium, Dissolved	mg/L	0.05	0.18	0	<0.001	<0.001	<0.001	<0.001
Thallium, Dissolved	mg/L	0.002	0.0024	0	**0.000123**	**0.000273**	**0.000214**	**0.000356**
Mercury, Dissolved	mg/L	0.002	0.011	0	<0.0001	<0.0001	<0.0001	<0.0001
Pesticides								
4,4'-DDD	µg/L	NS	0.28	0	<0.0102	<0.01	<0.01	<0.01
4,4'-DDE	µg/L	NS	0.2	0	<0.0102	<0.01	<0.01	<0.01
4,4'-DDT	µg/L	NS	0.2	0	<0.0102	<0.01	<0.01	<0.01
Aldrin	µg/L	NS	0.003	0	<0.0102	<0.01	<0.01	<0.01
alpha-BHC	µg/L	NS	0.011	0	<0.0102	<0.01	<0.01	<0.01
alpha Chlordane	µg/L	NS	NS	0	<0.0102	<0.01	<0.01	<0.01
beta-BHC	µg/L	NS	0.032	0	<0.0102	<0.01	<0.01	<0.01
delta-BHC	µg/L	NS	NS	0	<0.0102	<0.01	<0.01	<0.01
Dieldrin	µg/L	NS	0.0023	0	<0.0102	<0.01	<0.01	<0.01

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw067 8/01/07 LL1mw067-080107 L0708053 Reg	LL1mw078 8/02/07 LL1mw078-080207 L0708092 Reg	LL1mw081 8/02/07 LL1mw081-080207 L0708092 Reg	LL1mw082 8/02/07 LL1mw082-080207 L0708092 Reg
Endosulfan I	µg/L	NS	220	0	<0.0102	<0.01	<0.01	<0.01
Endosulfan II	µg/L	NS	220	0	<0.0102	<0.01	<0.01	<0.01
Endosulfan sulfate	µg/L	NS	NS	0	<0.0102	<0.01	<0.01	<0.01
Endrin	µg/L	2	11	0	<0.0102	<0.01	<0.01	<0.01
Endrin aldehyde	µg/L	NS	11	0	<0.0102	<0.01	<0.01	<0.01
Endrin ketone	µg/L	NS	NS	0	<0.0102	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	µg/L	0.2	0.052	0	<0.0102	<0.01	<0.01	<0.01
gamma Chlordane	µg/L	NS	NS	0	<0.0102	<0.01	<0.01	<0.01
Heptachlor	µg/L	0.4	0.015	0	<0.0102	<0.01	<0.01	<0.01
Heptachlor epoxide	µg/L	0.2	0.0074	0	<0.0102	<0.01	<0.01	<0.01
Methoxychlor	µg/L	40	180	0	<0.0102	<0.01	<0.01	<0.01
Toxaphene	µg/L	2	0.061	0	<0.306	<0.3	<0.3	<0.3
Polychlorinated Biphenyls								
Aroclor-1016	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1221	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1232	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1242	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1248	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1254	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25
Aroclor-1260	µg/L	0.5	0.034	0	<0.255	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
Volatiles								
Dichlorodifluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	NS	160	0	**0.559 J**	**0.342**	**0.413 J**	**0.324 J**
Vinyl chloride	µg/L	2	0.02	0	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	NS	8.7	0	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	NS	4.6	0	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	NS	810	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	NS	5500	0	<2.5	<2.5	<2.5	<2.5
Carbon disulfide	µg/L	NS	1000	0	<0.5	<0.5	<0.5	<0.5
Methyl acetate	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	NS	1300	0	<0.25	<0.25	<0.25	<0.25
Methyl tert-butyl ether	µg/L	NS	NS	0	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	7	NS	0	<0.5	<0.5	<0.5	<0.5
2-Butanone	µg/L	NS	7000	0	<2.5	<2.5	<2.5	<2.5
Chloroform	µg/L	NS	0.17	0	<0.125	<0.125	<0.125	<0.125
1,1,1-Trichloroethane	µg/L	NS	3200	0	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	5	0.17	0	<0.25	<0.25	<0.25	<0.25
Benzene	µg/L	5	0.35	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	5	0.12	0	<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L	5	0.028	0	<0.25	**0.259 J**	<0.25	<0.25
Methylcyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	5	0.16	0	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	1000	720	0	<0.25	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
cis-1,3-Dichloropropene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
4-Methyl-2-pentanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	µg/L	NS	0.4	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	NS	0.2	0	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	5	0.1	0	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	NS	110	0	<0.125	<0.125	<0.125	<0.125
Ethyl benzene	µg/L	700	1300	0	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	10000	10000	0	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	100	1600	0	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	NS	8.5	0	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	NS	0.43	0	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	NS	NS	0	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	NS	NS	0	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	70	NS	0	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	100	NS	0	<0.25	<0.25	<0.25	<0.25
Semi-Volatiles								
Dibenzo(a,h)Anthracene	µg/L	NS	0.0093	0	<2.66	<2.5	<2.69	<2.72
Di-n-octylphthalate	µg/L	NS	1500	0	<2.66	<2.5	<2.69	<2.72
Dibenzofuran	µg/L	NS	12	0	<2.66	<2.5	<2.69	<2.72
Diethylphthalate	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Dimethylphthalate	µg/L	NS	360000	0	<2.66	<2.5	<2.69	<2.72

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
Fluoranthene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Fluorene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Hexachlorobenzene	µg/L	1	0.042	0	<2.66	<2.5	<2.69	<2.72
Hexachlorobutadiene	µg/L	NS	0.86	0	<2.66	<2.5	<2.69	<2.72
Hexachlorocyclopentadiene	µg/L	50	220	0	<2.66	<2.5	<2.69	<2.72
Bis(2-Chloroethoxy)Methane	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.66	<2.5	<2.69	<2.72
Hexachloroethane	µg/L	NS	4.8	0	<2.66	<2.5	<2.69	<2.72
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0	<2.66	<2.5	<2.69	<2.72
Isophorone	µg/L	NS	71	0	<2.66	<2.5	<2.69	<2.72
N-Nitroso-di-n-propylamine	µg/L	NS	9600	0	<2.66	<2.5	<2.69	<2.72
N-Nitrosodiphenylamine	µg/L	NS	14	0	<2.66	<2.5	<2.69	<2.72
Naphthalene	µg/L	NS	6.2	0	<2.66	<2.5	<2.69	<2.72
Nitrobenzene	µg/L	NS	3.4	0	<2.66	<2.5	<2.69	<2.72
Pentachlorophenol	µg/L	1	0.56	0	<2.66	<2.5	<2.69	<2.72
Phenanthrene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Phenol	µg/L	NS	11000	0	<2.66	<2.5	<2.69	<2.72
Pyrene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
1,1'-Biphenyl	µg/L	NS	NS	0	<21.3	<20	<21.5	<21.7
2,4,5-Trichlorophenol	µg/L	NS	3600	0	<2.66	<2.5	<2.69	<2.72
2,4,6-Trichlorophenol	µg/L	NS	3.6	0	<2.66	<2.5	<2.69	<2.72
2,4-Dichlorophenol	µg/L	NS	110	0	<2.66	<2.5	<2.69	<2.72
2,4-Dimethylphenol	µg/L	NS	730	0	<2.66	<2.5	<2.69	<2.72
2,4-Dinitrophenol	µg/L	NS	73	0	<13.3	<12.5	<13.4	<13.6
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.66	<2.5	<2.69	<2.72
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.66	<2.5	<2.69	<2.72
2-Chloronaphthalene	µg/L	NS	490	0	<2.66	<2.5	<2.69	<2.72
2-Chlorophenol	µg/L	NS	30	0	<2.66	<2.5	<2.69	<2.72

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
2-Methylnaphthalene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
2-Methylphenol	µg/L	NS	1800	0	<2.66	<2.5	<2.69	<2.72
2-Nitroaniline	µg/L	NS	110	0	<13.3	<12.5	<13.4	<13.6
2-Nitrophenol	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
3,3'-Dichlorobenzidine	µg/L	NS	0.15	0	<2.66	<2.5	<2.69	<2.72
3-,4-Methylphenol	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
3-Nitroaniline	µg/L	NS	3.2	0	<13.3	<12.5	<13.4	<13.6
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.66	<2.5	<2.69	<2.72
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	0	<13.3	<12.5	<13.4	<13.6
4-Bromophenyl-phenylether	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
4-Chloro-3-methylphenol	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
4-Chloroaniline	µg/L	NS	150	0	<2.66	<2.5	<2.69	<2.72
4-Chlorophenyl-phenyl ether	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
4-Nitroaniline	µg/L	NS	3.2	0	<2.66	<2.5	<2.69	<2.72
4-Nitrophenol	µg/L	NS	NS	0	<13.3	<12.5	<13.4	<13.6
Acenaphthene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Acenaphthylene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Acetophenone	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Anthracene	µg/L	NS	1800	0	<2.66	<2.5	<2.69	<2.72
Atrazine	µg/L	NS	NS	0	<10.6	<10	<10.8	<10.9
Benzaldehyde	µg/L	NS	NS	0	<10.6	<10	<10.8	<10.9
Benzo(a)anthracene	µg/L	NS	0.092	0	<2.66	<2.5	<2.69	<2.72
Benzo(a)pyrene	µg/L	0.2	0.0092	0	<2.66	<2.5	<2.69	<2.72
Benzo(b)fluoranthene	µg/L	NS	0.092	0	<2.66	<2.5	<2.69	<2.72
Benzo(g,h,i)Perylene	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Benzo(k)fluoranthene	µg/L	NS	0.92	0	<2.66	<2.5	<2.69	<2.72
bis(2-Chloroisopropyl)ether	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
bis(2-Ethylhexyl)phthalate	µg/L	NS	4.8	0	**6.51**	<2.5	<2.69	<2.72

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
Butylbenzylphthalate	µg/L	NS	7300	0	<2.66	<2.5	<2.69	<2.72
Caprolactam	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Carbazole	µg/L	NS	3.4	0	<2.66	<2.5	<2.69	<2.72
Chrysene	µg/L	NS	9.2	0	<2.66	<2.5	<2.69	<2.72
Di-N-Butylphthalate	µg/L	NS	NS	0	<2.66	<2.5	<2.69	<2.72
Explosives								
1,3-Dinitrobenzene	µg/L	NS	3.6	0	**1.33**	<0.263	<0.262	<0.266
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0	**9.18**	<0.263	<0.262	<0.266
2,4-Dinitrotoluene	µg/L	NS	73	0	**4.35**	<0.263	<0.262	<0.266
2,6-Dinitrotoluene	µg/L	NS	36	0	<0.26	<0.263	<0.262	<0.266
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0	**15.8**	<0.263	<0.262	<0.266
2-Nitrotoluene	µg/L	NS	110	0	<0.26	<0.263	<0.262	<0.266
3-Nitrotoluene	µg/L	NS	3.2	0	<0.26	<0.263	<0.262	<0.266
4-Amino-2,6-dinitrotoluene	µg/L	NS	NS	0	**21.9**	<0.263	<0.262	<0.266
4-Nitrotoluene	µg/L	NS	3.2	0	<0.26	<0.263	<0.262	<0.266
HMX	µg/L	NS	1800	0	**0.417 J**	<0.263	<0.262	<0.266
Nitrobenzene	µg/L	NS	3.4	0	<0.26	<0.263	<0.262	<0.266
RDX	µg/L	NS	0.61	0	**2.42**	<0.263	<0.262	<0.266
1,3,5-Trinitrobenzene	µg/L	NS	1000	0	**4.24**	<0.263	<0.262	<0.266
Tetryl	µg/L	NS	360	0	<0.26	<0.263	<0.262	<0.266
Propellants								
Nitrocellulose	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Nitroguanidine	µg/L	NS	NS	0	<25	<25	<25	<25
Metals								
Silver, Dissolved	mg/L	0.1*	0.18	0	<0.005	<0.005	<0.005	<0.005
Barium, Dissolved	mg/L	2	2.6	0.0821	<0.0166	**0.016**	**0.0151**	**0.0156**
Beryllium, Dissolved	mg/L	0.004	NS	0	**<0.000512 J**	<0.0005	<0.0005	<0.0005

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
Calcium, Dissolved	mg/L	NS	NS	115	**37.9**	**60.2**	**41.4**	**43.4**
Cadmium, Dissolved	mg/L	0.005	NS	0	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt, Dissolved	mg/L	NS	0.73	0	**0.0295**	**0.00336 J**	<0.0025	<0.0025
Chromium, Dissolved	mg/L	0.1	NS	0.0073	<0.0025	<0.0025	<0.0025	<0.0025
Copper, Dissolved	mg/L	1.3*	1.5	0	**0.0279**	<0.005	<0.005	<0.005
Iron, Dissolved	mg/L	0.3*	11	0.279	**0.258**	**2.54**	<0.025	<0.025
Potassium, Dissolved	mg/L	NS	NS	2.89	**3.06**	**2.42**	**2.13**	**2.21**
Magnesium, Dissolved	mg/L	NS	NS	43.3	**3.86**	**16.8**	**34.2**	**36.6**
Manganese, Dissolved	mg/L	0.05*	0.88	1.02	**0.306**	**0.613**	**0.291**	**0.263**
Sodium, Dissolved	mg/L	NS	NS	45.7	**5.16**	**1.81**	**8.15**	**8.53**
Nickel, Dissolved	mg/L	0.1	0.73	0	**0.0554**	**0.0135 J**	**0.0158 J**	**0.0155 J**
Zinc, Dissolved	mg/L	5*	11	0.0609	**0.0993**	**0.0109 J**	<0.005	<0.005
Aluminum, Dissolved	mg/L	NS	36	0	<0.05	<0.05	<0.05	<0.05
Vanadium, Dissolved	mg/L	NS	0.036	0	<0.005	<0.005	<0.005	<0.005
Arsenic, Dissolved	mg/L	0.01	0.000045	0.0117	<0.00025	**0.000427**	**0.000312 J**	**0.000268 J**
Lead, Dissolved	mg/L	0.015	NS	0	**0.00281**	<0.00025	<0.00025	<0.00025
Antimony, Dissolved	mg/L	0.006	0.015	0	**0.000322J**	**0.000432J**	**0.000315 J**	**0.000422 J**
Selenium, Dissolved	mg/L	0.05	0.18	0	**0.00119**	<0.001	**0.00111**	**0.00116**
Thallium, Dissolved	mg/L	0.002	0.0024	0	**0.00047**	<0.00005	<0.00005	<0.00005
Mercury, Dissolved	mg/L	0.002	0.011	0	<0.0001	<0.0001	<0.0001	<0.0001
Pesticides								
4,4'-DDD	µg/L	NS	0.28	0	<0.01	<0.0102	<0.0105	<0.0106
4,4'-DDE	µg/L	NS	0.2	0	<0.01	<0.0102	<0.0105	<0.0106
4,4'-DDT	µg/L	NS	0.2	0	<0.01	<0.0102	**0.0311J/0.0433J**	**0.0631J/0.075J**
Aldrin	µg/L	NS	0.003	0	<0.01	<0.0102	<0.0105	<0.0106
alpha-BHC	µg/L	NS	0.011	0	<0.01	<0.0102	<0.0105	<0.0106
alpha Chlordane	µg/L	NS	NS	0	<0.01	<0.0102	<0.0105	<0.0106
beta-BHC	µg/L	NS	0.032	0	<0.01	<0.0102	<0.0105	<0.0106

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL1mw084 8/02/07 LL1mw084-080207 L0708092 Reg	LL1mw085 8/02/07 LL1mw085-080207 L0708092 Reg	LL2mw262 8/01/07 LL2mw262-080107 L0708053 Reg	LL2mw262DUP 8/01/07 LL2mw262DUP-080107 L0708053 FD
delta-BHC	µg/L	NS	NS	0	<0.01	<0.0102	<0.0105	<0.0106
Dieldrin	µg/L	NS	0.0023	0	<0.01	<0.0102	<0.0105	<0.0106
Endosulfan I	µg/L	NS	220	0	<0.01	<0.0102	<0.0105	<0.0106
Endosulfan II	µg/L	NS	220	0	<0.01	<0.0102	<0.0105	<0.0106
Endosulfan sulfate	µg/L	NS	NS	0	<0.01	<0.0102	<0.0105	<0.0106
Endrin	µg/L	2	11	0	<0.01	<0.0102	<0.0105	<0.0106
Endrin aldehyde	µg/L	NS	11	0	<0.01	<0.0102	<0.0105	<0.0106
Endrin ketone	µg/L	NS	NS	0	<0.01	<0.0102	<0.0105	<0.0106
gamma-BHC (Lindane)	µg/L	0.2	0.052	0	<0.01	<0.0102	<0.0105	<0.0106
gamma Chlordane	µg/L	NS	NS	0	<0.01	<0.0102	<0.0105	<0.0106
Heptachlor	µg/L	0.4	0.015	0	<0.01	<0.0102	<0.0105	<0.0106
Heptachlor epoxide	µg/L	0.2	0.0074	0	<0.01	<0.0102	<0.0105	<0.0106
Methoxychlor	µg/L	40	180	0	<0.01	<0.0102	<0.0105	<0.0106
Toxaphene	µg/L	2	0.061	0	<0.3	<0.306	<0.316	<0.319
Polychlorinated Biphenyls								
Aroclor-1016	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1221	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1232	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1242	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1248	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1254	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275
Aroclor-1260	µg/L	0.5	0.034	0	<0.269	<0.255	<0.263	<0.275

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
Volatiles								
Dichlorodifluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	NS	160	0	**0.567 J**	<0.25	<0.25	<0.25
Vinyl chloride	µg/L	2	0.02	0	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	NS	8.7	0	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	NS	4.6	0	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	NS	810	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	NS	5500	0	<2.5	<2.5	<2.5	<2.5
Carbon disulfide	µg/L	NS	1000	0	<0.5	<0.5	<0.5	<0.5
Methyl acetate	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	NS	1300	0	<0.25	<0.25	<0.25	<0.25
Methyl tert-butyl ether	µg/L	NS	NS	0	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	7	NS	0	<0.5	<0.5	<0.5	<0.5
2-Butanone	µg/L	NS	7000	0	<2.5	<2.5	<2.5	<2.5
Chloroform	µg/L	NS	0.17	0	<0.125	<0.125	<0.125	**0.366 J**
1,1,1-Trichloroethane	µg/L	NS	3200	0	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	5	0.17	0	<0.25	<0.25	<0.25	<0.25
Benzene	µg/L	5	0.35	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	5	0.12	0	<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L	5	0.028	0	<0.25	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	5	0.16	0	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	1000	720	0	<0.25	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
cis-1,3-Dichloropropene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
4-Methyl-2-pentanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	µg/L	NS	0.4	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	NS	0.2	0	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	5	0.1	0	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	NS	110	0	<0.125	<0.125	<0.125	<0.125
Ethyl benzene	µg/L	700	1300	0	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	10000	10000	0	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	100	1600	0	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	NS	8.5	0	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	NS	0.43	0	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	NS	NS	0	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	NS	NS	0	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	70	NS	0	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	100	NS	0	<0.25	<0.25	<0.25	<0.25
Semi-Volatiles								
Dibenzo(a,h)Anthracene	µg/L	NS	0.0093	0	<2.69	<2.66	<2.66	<2.5
Di-n-octylphthalate	µg/L	NS	1500	0	<2.69	<2.66	<2.66	<2.5
Dibenzofuran	µg/L	NS	12	0	<2.69	<2.66	<2.66	<2.5
Diethylphthalate	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Dimethylphthalate	µg/L	NS	360000	0	<2.69	<2.66	<2.66	<2.5

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
Fluoranthene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Fluorene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Hexachlorobenzene	µg/L	1	0.042	0	<2.69	<2.66	<2.66	<2.5
Hexachlorobutadiene	µg/L	NS	0.86	0	<2.69	<2.66	<2.66	<2.5
Hexachlorocyclopentadiene	µg/L	50	220	0	<2.69	<2.66	<2.66	<2.5
Bis(2-Chloroethoxy)Methane	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.69	<2.66	<2.66	<2.5
Hexachloroethane	µg/L	NS	4.8	0	<2.69	<2.66	<2.66	<2.5
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0	<2.69	<2.66	<2.66	<2.5
Isophorone	µg/L	NS	71	0	<2.69	<2.66	<2.66	<2.5
N-Nitroso-di-n-propylamine	µg/L	NS	9600	0	<2.69	<2.66	<2.66	<2.5
N-Nitrosodiphenylamine	µg/L	NS	14	0	<2.69	<2.66	<2.66	<2.5
Naphthalene	µg/L	NS	6.2	0	<2.69	<2.66	<2.66	<2.5
Nitrobenzene	µg/L	NS	3.4	0	<2.69	<2.66	<2.66	<2.5
Pentachlorophenol	µg/L	1	0.56	0	<2.69	<2.66	<2.66	<2.5
Phenanthrene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Phenol	µg/L	NS	11000	0	<2.69	<2.66	<2.66	<2.5
Pyrene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
1,1'-Biphenyl	µg/L	NS	NS	0	<21.5	<21.3	<21.3	<20
2,4,5-Trichlorophenol	µg/L	NS	3600	0	<2.69	<2.66	<2.66	<2.5
2,4,6-Trichlorophenol	µg/L	NS	3.6	0	<2.69	<2.66	<2.66	<2.5
2,4-Dichlorophenol	µg/L	NS	110	0	<2.69	<2.66	<2.66	<2.5
2,4-Dimethylphenol	µg/L	NS	730	0	<2.69	<2.66	<2.66	<2.5
2,4-Dinitrophenol	µg/L	NS	73	0	<13.4	<13.3	<13.3	<12.5
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.69	<2.66	<2.66	<2.5
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.69	<2.66	<2.66	<2.5
2-Chloronaphthalene	µg/L	NS	490	0	<2.69	<2.66	<2.66	<2.5
2-Chlorophenol	µg/L	NS	30	0	<2.69	<2.66	<2.66	<2.5

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
2-Methylnaphthalene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
2-Methylphenol	µg/L	NS	1800	0	<2.69	<2.66	<2.66	<2.5
2-Nitroaniline	µg/L	NS	110	0	<13.4	<13.3	<13.3	<12.5
2-Nitrophenol	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
3,3'-Dichlorobenzidine	µg/L	NS	0.15	0	<2.69	<2.66	<2.66	<2.5
3-,4-Methylphenol	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
3-Nitroaniline	µg/L	NS	3.2	0	<13.4	<13.3	<13.3	<12.5
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.69	<2.66	<2.66	<2.5
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	0	<13.4	<13.3	<13.3	<12.5
4-Bromophenyl-phenylether	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
4-Chloro-3-methylphenol	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
4-Chloroaniline	µg/L	NS	150	0	<2.69	<2.66	<2.66	<2.5
4-Chlorophenyl-phenyl ether	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
4-Nitroaniline	µg/L	NS	3.2	0	<2.69	<2.66	<2.66	<2.5
4-Nitrophenol	µg/L	NS	NS	0	<13.4	<13.3	<13.3	<12.5
Acenaphthene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Acenaphthylene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Acetophenone	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Anthracene	µg/L	NS	1800	0	<2.69	<2.66	<2.66	<2.5
Atrazine	µg/L	NS	NS	0	<10.8	<10.6	<10.6	<10
Benzaldehyde	µg/L	NS	NS	0	<10.8	<10.6	<10.6	<10
Benzo(a)anthracene	µg/L	NS	0.092	0	<2.69	<2.66	<2.66	<2.5
Benzo(a)pyrene	µg/L	0.2	0.0092	0	<2.69	<2.66	<2.66	<2.5
Benzo(b)fluoranthene	µg/L	NS	0.092	0	<2.69	<2.66	<2.66	<2.5
Benzo(g,h,i)Perylene	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Benzo(k)fluoranthene	µg/L	NS	0.92	0	<2.69	<2.66	<2.66	<2.5
bis(2-Chloroisopropyl)ether	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
bis(2-Ethylhexyl)phthalate	µg/L	NS	4.8	0	<2.69	<2.66	<2.66	<2.5

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
Butylbenzylphthalate	µg/L	NS	7300	0	<2.69	<2.66	<2.66	<2.5
Caprolactam	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Carbazole	µg/L	NS	3.4	0	<2.69	<2.66	<2.66	<2.5
Chrysene	µg/L	NS	9.2	0	<2.69	<2.66	<2.66	<2.5
Di-N-Butylphthalate	µg/L	NS	NS	0	<2.69	<2.66	<2.66	<2.5
Explosives								
1,3-Dinitrobenzene	µg/L	NS	3.6	0	<0.255	<0.258	<0.266	<0.26
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0	<0.255	<0.258	<0.266	<0.26
2,4-Dinitrotoluene	µg/L	NS	73	0	<0.255	<0.258	<0.266	<0.26
2,6-Dinitrotoluene	µg/L	NS	36	0	<0.255	<0.258	<0.266	<0.26
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0	<0.255	<0.258	<0.266	**0.477 J**
2-Nitrotoluene	µg/L	NS	110	0	<0.255	<0.258	<0.266	<0.26
3-Nitrotoluene	µg/L	NS	3.2	0	<0.255	<0.258	<0.266	<0.26
4-Amino-2,6-dinitrotoluene	µg/L	NS	NS	0	<0.255	<0.258	<0.266	**0.453 J**
4-Nitrotoluene	µg/L	NS	3.2	0	<0.255	<0.258	<0.266	**0.436 J**
HMX	µg/L	NS	1800	0	<0.255	<0.258	<0.266	<0.26
Nitrobenzene	µg/L	NS	3.4	0	<0.255	<0.258	<0.266	<0.26
RDX	µg/L	NS	0.61	0	<0.255	<0.258	<0.266	<0.26
1,3,5-Trinitrobenzene	µg/L	NS	1000	0	<0.255	<0.258	<0.266	<0.26
Tetryl	µg/L	NS	360	0	<0.255	<0.258	<0.266	<0.26
Propellants								
Nitrocellulose	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Nitroguanidine	µg/L	NS	NS	0	<25	<25	<25	<25
Metals								
Silver, Dissolved	mg/L	0.1*	0.18	0	<0.005	<0.005	<0.005	<0.005
Barium, Dissolved	mg/L	2	2.6	0.0821	**0.0311**	**0.0215**	**0.0266**	**0.0241**
Beryllium, Dissolved	mg/L	0.004	NS	0	<0.0005	<0.0005	<0.0005	<0.0005
Calcium, Dissolved	mg/L	NS	NS	115	**36**	**33.6**	**36.5**	**44.5**

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
Cadmium, Dissolved	mg/L	0.005	NS	0	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt, Dissolved	mg/L	NS	0.73	0	<0.0025	**0.0154 J**	**0.0121 J**	**0.00314 J**
Chromium, Dissolved	mg/L	0.1	NS	0.0073	<0.0025	<0.0025	<0.0025	<0.0025
Copper, Dissolved	mg/L	1.3*	1.5	0	<0.005	<0.005	<0.005	<0.005
Iron, Dissolved	mg/L	0.3*	11	0.279	**3.19**	**5.32**	**4.99**	**1.29**
Potassium, Dissolved	mg/L	NS	NS	2.89	**1.04**	**2.01**	**<0.25**	**0.836 J**
Magnesium, Dissolved	mg/L	NS	NS	43.3	**16.5**	**15.6**	**16.5**	**19.5**
Manganese, Dissolved	mg/L	0.05*	0.88	1.02	**0.837**	**1.12**	**0.982**	**0.594**
Sodium, Dissolved	mg/L	NS	NS	45.7	**5.24**	**9.17**	**8.42**	**11.9**
Nickel, Dissolved	mg/L	0.1	0.73	0	<0.005	**0.0125 J**	**0.0119 J**	<0.005
Zinc, Dissolved	mg/L	5*	11	0.0609	<0.005	<0.005	**0.00629 J**	**0.0679 J**
Aluminum, Dissolved	mg/L	NS	36	0	<0.05	<0.05	<0.05	<0.05
Vanadium, Dissolved	mg/L	NS	0.036	0	<0.005	<0.005	<0.005	<0.005
Arsenic, Dissolved	mg/L	0.01	0.000045	0.0117	**0.0104**	**0.00488**	**0.00554**	**0.00438**
Lead, Dissolved	mg/L	0.015	NS	0	<0.00025	<0.00025	<0.00025	<0.0025
Antimony, Dissolved	mg/L	0.006	0.015	0	<0.00025	**0.000452 J**	<0.00025	**0.000525 J**
Selenium, Dissolved	mg/L	0.05	0.18	0	<0.001	<0.001	**0.000945 J**	<0.001
Thallium, Dissolved	mg/L	0.002	0.0024	0	**0.0000555 J**	**0.000112**	**0.000101 J**	<0.00005
Mercury, Dissolved	mg/L	0.002	0.011	0	<0.0001	<0.0001	<0.0001	<0.0001
Pesticides								
4,4'-DDD	µg/L	NS	0.28	0	<0.0104	<0.011	<0.0111	<0.0106
4,4'-DDE	µg/L	NS	0.2	0	<0.0104	<0.011	<0.0111	<0.0106
4,4'-DDT	µg/L	NS	0.2	0	<0.0104	**0.022J/0.030J**	<0.0111	<0.0106
Aldrin	µg/L	NS	0.003	0	<0.0104	<0.011	<0.0111	<0.0106
alpha-BHC	µg/L	NS	0.011	0	<0.0104	<0.011	<0.0111	<0.0106
alpha Chlordane	µg/L	NS	NS	0	<0.0104	<0.011	<0.0111	<0.0106
beta-BHC	µg/L	NS	0.032	0	<0.0104	<0.011	<0.0111	<0.0106
delta-BHC	µg/L	NS	NS	0	<0.0104	<0.011	<0.0111	<0.0106

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw263 8/01/07 LL2mw263-080107 L0708053 Reg	LL2mw266 8/01/07 LL2mw266-080107 L0708053 Reg	LL2mw266DUP 8/01/07 LL2mwDUP-080107 L0708053 FD	LL2mw267 8/01/07 LL2mw267-080107 L0708053 Reg
Dieldrin	µg/L	NS	0.0023	0	<0.0104	<0.011	<0.0111	<0.0106
Endosulfan I	µg/L	NS	220	0	<0.0104	<0.011	<0.0111	<0.0106
Endosulfan II	µg/L	NS	220	0	<0.0104	<0.011	<0.0111	<0.0106
Endosulfan sulfate	µg/L	NS	NS	0	<0.0104	<0.011	<0.0111	<0.0106
Endrin	µg/L	2	11	0	<0.0104	<0.011	<0.0111	<0.0106
Endrin aldehyde	µg/L	NS	11	0	<0.0104	<0.011	<0.0111	<0.0106
Endrin ketone	µg/L	NS	NS	0	<0.0104	<0.011	<0.0111	<0.0106
gamma-BHC (Lindane)	µg/L	0.2	0.052	0	<0.0104	<0.011	<0.0111	<0.0106
gamma Chlordane	µg/L	NS	NS	0	<0.0104	<0.011	<0.0111	<0.0106
Heptachlor	µg/L	0.4	0.015	0	<0.0104	<0.011	<0.0111	<0.0106
Heptachlor epoxide	µg/L	0.2	0.0074	0	<0.0104	<0.011	<0.0111	<0.0106
Methoxychlor	µg/L	40	180	0	<0.0104	<0.011	<0.0111	<0.0106
Toxaphene	µg/L	2	0.061	0	<0.313	<0.33	<0.333	<0.319
Polychlorinated Biphenyls								
Aroclor-1016	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1221	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1232	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1242	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1248	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1254	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266
Aroclor-1260	µg/L	0.5	0.034	0	<0.263	<0.275	<0.329	<0.266

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
Volatiles								
Dichlorodifluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	NS	160	0	<0.25	**0.561 J**	**0.430 J**	**0.317 J**
Vinyl chloride	µg/L	2	0.02	0	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	NS	8.7	0	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	NS	4.6	0	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	NS	810	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	NS	5500	0	<2.5	<2.5	<2.5	**17.7**
Carbon disulfide	µg/L	NS	1000	0	<0.5	<0.5	<0.5	**0.557 J**
Methyl acetate	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	NS	1300	0	<0.25	<0.25	<0.25	<0.25
Methyl tert-butyl ether	µg/L	NS	NS	0	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	7	NS	0	<0.5	<0.5	<0.5	<0.5
2-Butanone	µg/L	NS	7000	0	<2.5	<2.5	<2.5	**4.1**
Chloroform	µg/L	NS	0.17	0	<0.125	<0.125	<0.125	**0.335 J**
1,1,1-Trichloroethane	µg/L	NS	3200	0	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	5	0.17	0	<0.25	<0.25	<0.25	<0.25
Benzene	µg/L	5	0.35	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	5	0.12	0	<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L	5	0.028	0	<0.25	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	5	0.16	0	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	1000	720	0	<0.25	<0.25	<0.25	**0.316 J**
cis-1,3-Dichloropropene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
4-Methyl-2-pentanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	µg/L	NS	0.4	0	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	NS	0.2	0	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	5	0.1	0	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	NS	110	0	<0.125	<0.125	<0.125	<0.125
Ethyl benzene	µg/L	700	1300	0	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	10000	10000	0	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	100	1600	0	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	NS	8.5	0	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	NS	0.43	0	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	NS	NS	0	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	NS	NS	0	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	70	NS	0	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	100	NS	0	<0.25	<0.25	<0.25	<0.25
Semi-Volatiles								
Dibenzo(a,h)Anthracene	µg/L	NS	0.0093	0	<2.6	<2.94	<2.55	<2.6
Di-n-octylphthalate	µg/L	NS	1500	0	<2.6	<2.94	<2.55	<2.6
Dibenzofuran	µg/L	NS	12	0	<2.6	<2.94	<2.55	<2.6
Diethylphthalate	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Dimethylphthalate	µg/L	NS	360000	0	<2.6	<2.94	<2.55	<2.6
Fluoranthene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
Fluorene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Hexachlorobenzene	µg/L	1	0.042	0	<2.6	<2.94	<2.55	<2.6
Hexachlorobutadiene	µg/L	NS	0.86	0	<2.6	<2.94	<2.55	<2.6
Hexachlorocyclopentadiene	µg/L	50	220	0	<2.6	<2.94	<2.55	<2.6
Bis(2-Chloroethoxy)Methane	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.6	<2.94	<2.55	<2.6
Hexachloroethane	µg/L	NS	4.8	0	<2.6	<2.94	<2.55	<2.6
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0	<2.6	<2.94	<2.55	<2.6
Isophorone	µg/L	NS	71	0	<2.6	<2.94	<2.55	<2.6
N-Nitroso-di-n-propylamine	µg/L	NS	9600	0	<2.6	<2.94	<2.55	<2.6
N-Nitrosodiphenylamine	µg/L	NS	14	0	<2.6	<2.94	<2.55	<2.6
Naphthalene	µg/L	NS	6.2	0	<2.6	<2.94	<2.55	<2.6
Nitrobenzene	µg/L	NS	3.4	0	<2.6	<2.94	<2.55	<2.6
Pentachlorophenol	µg/L	1	0.56	0	<2.6	<2.94	<2.55	<2.6
Phenanthrene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Phenol	µg/L	NS	11000	0	<2.6	<2.94	<2.55	<2.6
Pyrene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
1,1'-Biphenyl	µg/L	NS	NS	0	<20.8	<23.5	<20.4	<20.8
2,4,5-Trichlorophenol	µg/L	NS	3600	0	<2.6	<2.94	<2.55	<2.6
2,4,6-Trichlorophenol	µg/L	NS	3.6	0	<2.6	<2.94	<2.55	<2.6
2,4-Dichlorophenol	µg/L	NS	110	0	<2.6	<2.94	<2.55	<2.6
2,4-Dimethylphenol	µg/L	NS	730	0	<2.6	<2.94	<2.55	<2.6
2,4-Dinitrophenol	µg/L	NS	73	0	<13	<14.7	<12.8	<13
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.6	<2.94	<2.55	<2.6
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.6	<2.94	<2.55	<2.6
2-Chloronaphthalene	µg/L	NS	490	0	<2.6	<2.94	<2.55	<2.6
2-Chlorophenol	µg/L	NS	30	0	<2.6	<2.94	<2.55	<2.6
2-Methylnaphthalene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6

Table B-1
Groundwater Sample Results (Continued)

Well Location: / Sample Date: / Sample ID: / Laboratory Report: / Sample Type: / ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
2-Methylphenol	µg/L	NS	1800	0	<2.6	<2.94	<2.55	<2.6
2-Nitroaniline	µg/L	NS	110	0	<13	<14.7	<12.8	<13
2-Nitrophenol	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
3,3'-Dichlorobenzidine	µg/L	NS	0.15	0	<2.6	<2.94	<2.55	<2.6
3-,4-Methylphenol	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
3-Nitroaniline	µg/L	NS	3.2	0	<13	<14.7	<12.8	<13
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.6	<2.94	<2.55	<2.6
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	0	<13	<14.7	<12.8	<13
4-Bromophenyl-phenylether	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
4-Chloro-3-methylphenol	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
4-Chloroaniline	µg/L	NS	150	0	<2.6	<2.94	<2.55	<2.6
4-Chlorophenyl-phenyl ether	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
4-Nitroaniline	µg/L	NS	3.2	0	<2.6	<2.94	<2.55	<2.6
4-Nitrophenol	µg/L	NS	NS	0	<13	<14.7	<12.8	<13
Acenaphthene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Acenaphthylene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Acetophenone	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Anthracene	µg/L	NS	1800	0	<2.6	<2.94	<2.55	<2.6
Atrazine	µg/L	NS	NS	0	<10.4	<11.8	<10.2	<10.4
Benzaldehyde	µg/L	NS	NS	0	<10.4	<11.8	<10.2	<10.4
Benzo(a)anthracene	µg/L	NS	0.092	0	<2.6	<2.94	<2.55	<2.6
Benzo(a)pyrene	µg/L	0.2	0.0092	0	<2.6	<2.94	<2.55	<2.6
Benzo(b)fluoranthene	µg/L	NS	0.092	0	<2.6	<2.94	<2.55	<2.6
Benzo(g,h,i)Perylene	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Benzo(k)fluoranthene	µg/L	NS	0.92	0	<2.6	<2.94	<2.55	<2.6
bis(2-Chloroisopropyl)ether	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
bis(2-Ethylhexyl)phthalate	µg/L	NS	4.8	0	<2.6	<2.94	<2.55	<2.6
Butylbenzylphthalate	µg/L	NS	7300	0	<2.6	<2.94	<2.55	<2.6

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
Caprolactam	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Carbazole	µg/L	NS	3.4	0	<2.6	<2.94	<2.55	<2.6
Chrysene	µg/L	NS	9.2	0	<2.6	<2.94	<2.55	<2.6
Di-N-Butylphthalate	µg/L	NS	NS	0	<2.6	<2.94	<2.55	<2.6
Explosives								
1,3-Dinitrobenzene	µg/L	NS	3.6	0	<0.26	<0.26	<0.26	<0.263
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0	<0.26	<2.55	**65.1**	<2.78
2,4-Dinitrotoluene	µg/L	NS	73	0	<0.26	<2.55	<2.55	<2.78
2,6-Dinitrotoluene	µg/L	NS	36	0	<0.26	<2.55	<2.55	<2.78
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0	<0.26	<2.55	**2.84**	<2.78
2-Nitrotoluene	µg/L	NS	110	0	<0.26	<2.55	<2.55	<2.78
3-Nitrotoluene	µg/L	NS	3.2	0	<0.26	<2.55	<2.55	<2.78
4-Amino-2,6-dinitrotoluene	µg/L	NS	NS	0	<0.26	<2.55	**26.6/26.3**	<2.78
4-Nitrotoluene	µg/L	NS	3.2	0	<0.26	<2.55	<2.55	<2.78
HMX	µg/L	NS	1800	0	<0.26	<2.55	**1.49**	<2.78
Nitrobenzene	µg/L	NS	3.4	0	<0.26	<2.55	<2.55	<2.78
RDX	µg/L	NS	0.61	0	<0.26	<2.55	**8.42**	<2.78
1,3,5-Trinitrobenzene	µg/L	NS	1000	0	<0.26	<2.55	**24**	<2.78
Tetryl	µg/L	NS	360	0	<0.26	<2.55	<2.55	<2.78
Propellants								
Nitrocellulose	µg/L	NS	NS	0	<0.25	<0.25	<0.25	<0.25
Nitroguanidine	µg/L	NS	NS	0	<25	<25	<25	<25
Metals								
Silver, Dissolved	mg/L	0.1*	0.18	0	<0.005	<0.005	<0.005	<0.005
Barium, Dissolved	mg/L	2	2.6	0.0821	**0.263**	<0.0025	<0.0025	**0.0133**
Beryllium, Dissolved	mg/L	0.004	NS	0	<0.0005	<0.0005	<0.0005	<0.0005
Calcium, Dissolved	mg/L	NS	NS	115	**37.9**	**20.8**	**34.7**	**7.99**

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
Cadmium, Dissolved	mg/L	0.005	NS	0	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt, Dissolved	mg/L	NS	0.73	0	<0.0025	<0.0025	<0.0025	**0.00837 J**
Chromium, Dissolved	mg/L	0.1	NS	0.0073	<0.0025	<0.0025	<0.0025	<0.0025
Copper, Dissolved	mg/L	1.3*	1.5	0	<0.005	<0.005	<0.005	<0.005
Iron, Dissolved	mg/L	0.3*	11	0.279	**7.7**	**0.0451**	<0.025	**3.06**
Potassium, Dissolved	mg/L	NS	NS	2.89	**3.72**	**1.37**	**1.76**	**1.09**
Magnesium, Dissolved	mg/L	NS	NS	43.3	**18.1**	**13.5**	**4.68**	**4.94**
Manganese, Dissolved	mg/L	0.05*	0.88	1.02	**1.78**	**0.599**	<0.005	**4.413**
Sodium, Dissolved	mg/L	NS	NS	45.7	**7.08**	**4.1**	**1.75**	**22.6**
Nickel, Dissolved	mg/L	0.1	0.73	0	<0.005	<0.005	<0.005	**0.0191 J**
Zinc, Dissolved	mg/L	5*	11	0.0609	<0.005	<0.005	<0.005	**0.00927 J**
Aluminum, Dissolved	mg/L	NS	36	0	<0.05	<0.05	<0.05	<0.05
Vanadium, Dissolved	mg/L	NS	0.036	0	<0.005	<0.005	<0.005	<0.005
Arsenic, Dissolved	mg/L	0.01	0.000045	0.0117	**0.000623 J**	**0.000277 J**	**0.000434 J**	**0.000981 J**
Lead, Dissolved	mg/L	0.015	NS	0	**0.000423 J**	<0.00025	<0.00025	<0.00025
Antimony, Dissolved	mg/L	0.006	0.015	0	<0.00025	<0.00025	<0.00025	**0.00053 J**
Selenium, Dissolved	mg/L	0.05	0.18	0	**0.000842 J**	<0.001	**0.0013**	<0.001
Thallium, Dissolved	mg/L	0.002	0.0024	0	**0.000564 J**	**0.000509**	**0.000377**	**0.00123**
Mercury, Dissolved	mg/L	0.002	0.011	0	<0.0001	<0.0001	<0.0001	<0.0001
Pesticides								
4,4'-DDD	µg/L	NS	0.28	0	<0.0102	<0.0112	<0.0102	<0.0106
4,4'-DDE	µg/L	NS	0.2	0	<0.0102	<0.0112	<0.0102	<0.0106
4,4'-DDT	µg/L	NS	0.2	0	<0.0102	<0.0112	<0.0102	<0.0106
Aldrin	µg/L	NS	0.003	0	<0.0102	<0.0112	<0.0102	<0.0106
alpha-BHC	µg/L	NS	0.011	0	<0.0102	<0.0112	<0.0102	<0.0106
alpha Chlordane	µg/L	NS	NS	0	<0.0102	<0.0112	<0.0102	<0.0106
beta-BHC	µg/L	NS	0.032	0	<0.0102	<0.0112	<0.0102	<0.0106
delta-BHC	µg/L	NS	NS	0	<0.0102	<0.0112	<0.0102	<0.0106

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL2mw269 7/31/07 LL2mw269-073107 L0708030 Reg	LL3mw236 7/31/07 LL3mw236-073107 L0708030 Reg	LL3mw238 7/31/07 LL3mw238-073107 L0708030 Reg	LL3mw239 7/30/07 LL3mw239-073007 L0707739 Reg
Dieldrin	µg/L	NS	0.0023	0	<0.0102	<0.0112	<0.0102	<0.0106
Endosulfan I	µg/L	NS	220	0	<0.0102	<0.0112	<0.0102	<0.0106
Endosulfan II	µg/L	NS	220	0	<0.0102	<0.0112	<0.0102	<0.0106
Endosulfan sulfate	µg/L	NS	NS	0	<0.0102	<0.0112	<0.0102	<0.0106
Endrin	µg/L	2	11	0	<0.0102	<0.0112	<0.0102	<0.0106
Endrin aldehyde	µg/L	NS	11	0	<0.0102	<0.0112	<0.0102	<0.0106
Endrin ketone	µg/L	NS	NS	0	<0.0102	<0.0112	<0.0102	<0.0106
gamma-BHC (Lindane)	µg/L	0.2	0.052	0	<0.0102	<0.0112	<0.0102	<0.0106
gamma Chlordane	µg/L	NS	NS	0	<0.0102	<0.0112	<0.0102	<0.0106
Heptachlor	µg/L	0.4	0.015	0	<0.0102	<0.0112	<0.0102	<0.0106
Heptachlor epoxide	µg/L	0.2	0.0074	0	<0.0102	<0.0112	<0.0102	<0.0106
Methoxychlor	µg/L	40	180	0	<0.0102	<0.0112	<0.0102	<0.0106
Toxaphene	µg/L	2	0.061	0	<0.306	<0.337	<0.306	<0.319
Polychlorinated Biphenyls								
Aroclor-1016	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1221	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1232	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1242	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1248	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1254	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266
Aroclor-1260	µg/L	0.5	0.034	0	<0.255	<0.281	<0.255	<0.266

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
Volatiles							
Dichlorodifluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Chloromethane	µg/L	NS	160	0	<0.25	**0.307 J**	**0.333 J**
Vinyl chloride	µg/L	2	0.02	0	<0.25	<0.25	<0.25
Bromomethane	µg/L	NS	8.7	0	<0.5	<0.5	<0.5
Chloroethane	µg/L	NS	4.6	0	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	NS	810	0	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Acetone	µg/L	NS	5500	0	<2.5	<2.5	<2.5
Carbon disulfide	µg/L	NS	1000	0	<0.5	<0.5	<0.5
Methyl acetate	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Methylene chloride	µg/L	NS	1300	0	<0.25	<0.25	<0.25
Methyl tert-butyl ether	µg/L	NS	NS	0	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	7	NS	0	<0.5	<0.5	<0.5
2-Butanone	µg/L	NS	7000	0	<2.5	<2.5	<2.5
Chloroform	µg/L	NS	0.17	0	<0.125	<0.125	<0.125
1,1,1-Trichloroethane	µg/L	NS	3200	0	<0.25	<0.25	<0.25
Cyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	5	0.17	0	<0.25	<0.25	<0.25
Benzene	µg/L	5	0.35	0	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	5	0.12	0	<0.2	<0.2	<0.2
Trichloroethene	µg/L	5	0.028	0	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	5	0.16	0	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25
Toluene	µg/L	1000	720	0	<0.25	<0.25	<0.25
cis-1,3-Dichloropropene	µg/L	NS	NS	0	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
4-Methyl-2-pentanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	µg/L	NS	0.4	0	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	NS	0.2	0	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	5	0.1	0	<0.25	<0.25	<0.25
2-Hexanone	µg/L	NS	NS	0	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	NS	0.13	0	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	NS	110	0	<0.125	<0.125	<0.125
Ethyl benzene	µg/L	700	1300	0	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	10000	10000	0	<0.5	<0.5	<0.5
Styrene	µg/L	100	1600	0	<0.125	<0.125	<0.125
Bromoform	µg/L	NS	8.5	0	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	NS	0.43	0	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	NS	NS	0	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	NS	NS	0	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	NS	NS	0	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	NS	NS	0	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	70	NS	0	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	100	NS	0	<0.25	<0.25	<0.25
Semi-Volatiles							
Dibenzo(a,h)Anthracene	µg/L	NS	0.0093	0	<2.55	<2.55	<2.78
Di-n-octylphthalate	µg/L	NS	1500	0	<2.55	<2.55	<2.78
Dibenzofuran	µg/L	NS	12	0	<2.55	<2.55	<2.78
Diethylphthalate	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Dimethylphthalate	µg/L	NS	360000	0	<2.55	<2.55	<2.78
Fluoranthene	µg/L	NS	NS	0	<2.55	<2.55	<2.78

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
Fluorene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Hexachlorobenzene	µg/L	1	0.042	0	<2.55	<2.55	<2.78
Hexachlorobutadiene	µg/L	NS	0.86	0	<2.55	<2.55	<2.78
Hexachlorocyclopentadiene	µg/L	50	220	0	<2.55	<2.55	<2.78
Bis(2-Chloroethoxy)Methane	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.55	<2.55	<2.78
Hexachloroethane	µg/L	NS	4.8	0	<2.55	<2.55	<2.78
Indeno(1,2,3-cd)pyrene	µg/L	NS	0.092	0	<2.55	<2.55	<2.78
Isophorone	µg/L	NS	71	0	<2.55	<2.55	<2.78
N-Nitroso-di-n-propylamine	µg/L	NS	9600	0	<2.55	<2.55	<2.78
N-Nitrosodiphenylamine	µg/L	NS	14	0	<2.55	<2.55	<2.78
Naphthalene	µg/L	NS	6.2	0	<2.55	<2.55	<2.78
Nitrobenzene	µg/L	NS	3.4	0	<2.55	<2.55	<2.78
Pentachlorophenol	µg/L	1	0.56	0	<2.55	<2.55	<2.78
Phenanthrene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Phenol	µg/L	NS	11000	0	<2.55	<2.55	<2.78
Pyrene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
1,1'-Biphenyl	µg/L	NS	NS	0	<20.4	<20.4	<22.2
2,4,5-Trichlorophenol	µg/L	NS	3600	0	<2.55	<2.55	<2.78
2,4,6-Trichlorophenol	µg/L	NS	3.6	0	<2.55	<2.55	<2.78
2,4-Dichlorophenol	µg/L	NS	110	0	<2.55	<2.55	<2.78
2,4-Dimethylphenol	µg/L	NS	730	0	<2.55	<2.55	<2.78
2,4-Dinitrophenol	µg/L	NS	73	0	<12.8	<12.8	<13.9
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.55	<2.55	<2.78
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.55	<2.55	<2.78
2-Chloronaphthalene	µg/L	NS	490	0	<2.55	<2.55	<2.78
2-Chlorophenol	µg/L	NS	30	0	<2.55	<2.55	<2.78
2-Methylnaphthalene	µg/L	NS	NS	0	<2.55	<2.55	<2.78

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
2-Methylphenol	µg/L	NS	1800	0	<2.55	<2.55	<2.78
2-Nitroaniline	µg/L	NS	110	0	<12.8	<12.8	<13.9
2-Nitrophenol	µg/L	NS	NS	0	<2.55	<2.55	<2.78
3,3'-Dichlorobenzidine	µg/L	NS	0.15	0	<2.55	<2.55	<2.78
3-,4-Methylphenol	µg/L	NS	NS	0	<2.55	<2.55	<2.78
3-Nitroaniline	µg/L	NS	3.2	0	<12.8	<12.8	<13.9
Bis(2-Chloroethyl)ether	µg/L	NS	0.001	0	<2.55	<2.55	<2.78
4,6-Dinitro-2-methylphenol	µg/L	NS	NS	0	<12.8	<12.8	<13.9
4-Bromophenyl-phenylether	µg/L	NS	NS	0	<2.55	<2.55	<2.78
4-Chloro-3-methylphenol	µg/L	NS	NS	0	<2.55	<2.55	<2.78
4-Chloroaniline	µg/L	NS	150	0	<2.55	<2.55	<2.78
4-Chlorophenyl-phenyl ether	µg/L	NS	NS	0	<2.55	<2.55	<2.78
4-Nitroaniline	µg/L	NS	3.2	0	<2.55	<2.55	<2.78
4-Nitrophenol	µg/L	NS	NS	0	<12.8	<12.8	<13.9
Acenaphthene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Acenaphthylene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Acetophenone	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Anthracene	µg/L	NS	1800	0	<2.55	<2.55	<2.78
Atrazine	µg/L	NS	NS	0	<10.2	<10.2	<11.1
Benzaldehyde	µg/L	NS	NS	0	<10.2	<10.2	<11.1
Benzo(a)anthracene	µg/L	NS	0.092	0	<2.55	<2.55	<2.78
Benzo(a)pyrene	µg/L	0.2	0.0092	0	<2.55	<2.55	<2.78
Benzo(b)fluoranthene	µg/L	NS	0.092	0	<2.55	<2.55	<2.78
Benzo(g,h,i)Perylene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Benzo(k)fluoranthene	µg/L	NS	0.92	0	<2.55	<2.55	<2.78
bis(2-Chloroisopropyl)ether	µg/L	NS	NS	0	<2.55	<2.55	<2.78
bis(2-Ethylhexyl)phthalate	µg/L	NS	4.8	0	<2.55	<2.55	<2.78
Butylbenzylphthalate	µg/L	NS	7300	0	<2.55	<2.55	<2.78

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
Caprolactam	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Carbazole	µg/L	NS	3.4	0	<2.55	<2.55	<2.78
Chrysene	µg/L	NS	9.2	0	<2.55	<2.55	<2.78
Di-N-Butylphthalate	µg/L	NS	NS	0	<2.55	<2.55	<2.78
Explosives							
1,3-Dinitrobenzene	µg/L	NS	3.6	0	<0.255	<0.255	<0.255
2,4,6-Trinitrotoluene	µg/L	NS	2.2	0	<2.55	<2.55	<2.78
2,4-Dinitrotoluene	µg/L	NS	73	0	<2.55	<2.55	<2.78
2,6-Dinitrotoluene	µg/L	NS	36	0	<2.55	<2.55	<2.78
2-Amino-4,6-dinitrotoluene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
2-Nitrotoluene	µg/L	NS	110	0	<2.55	<2.55	<2.78
3-Nitrotoluene	µg/L	NS	3.2	0	<2.55	<2.55	<2.78
4-Amino-2,6-dinitrotoluene	µg/L	NS	NS	0	<2.55	<2.55	<2.78
4-Nitrotoluene	µg/L	NS	3.2	0	<2.55	<2.55	<2.78
HMX	µg/L	NS	1800	0	<2.55	<2.55	<2.78
Nitrobenzene	µg/L	NS	3.4	0	<2.55	<2.55	<2.78
RDX	µg/L	NS	0.61	0	<2.55	<2.55	<2.78
1,3,5-Trinitrobenzene	µg/L	NS	1000	0	<2.55	<2.55	<2.78
Tetryl	µg/L	NS	360	0	<2.55	<2.55	<2.78
Propellants							
Nitrocellulose	µg/L	NS	NS	0	<0.25	<0.25	<0.25
Nitroguanidine	µg/L	NS	NS	0	<25	<25	<25
Metals							
Silver, Dissolved	mg/L	0.1*	0.18	0	<0.005	<0.005	<0.005
Barium, Dissolved	mg/L	2	2.6	0.0821	**0.0284**	**0.00397 J**	**0.00941 J**
Beryllium, Dissolved	mg/L	0.004	NS	0	<0.0005	<0.0005	<0.0005
Calcium, Dissolved	mg/L	NS	NS	115	**52.3**	**95.6**	**31.4**

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
Cadmium, Dissolved	mg/L	0.005	NS	0	<0.0025	<0.0025	<0.0025
Cobalt, Dissolved	mg/L	NS	0.73	0	<0.0025	<0.0025	<0.0025
Chromium, Dissolved	mg/L	0.1	NS	0.0073	<0.0025	<0.0025	<0.0025
Copper, Dissolved	mg/L	1.3*	1.5	0	<0.005	<0.005	<0.005
Iron, Dissolved	mg/L	0.3*	11	0.279	**0.238**	<0.025	**3.62**
Potassium, Dissolved	mg/L	NS	NS	2.89	**0.602 J**	**0.497**	**1.22**
Magnesium, Dissolved	mg/L	NS	NS	43.3	**16.8**	**25.7**	**15.2**
Manganese, Dissolved	mg/L	0.05*	0.88	1.02	**0.115**	<0.005	**1.23**
Sodium, Dissolved	mg/L	NS	NS	45.7	**1.59**	**1.55**	**8.08**
Nickel, Dissolved	mg/L	0.1	0.73	0	<0.005	<0.005	**0.044**
Zinc, Dissolved	mg/L	5*	11	0.0609	<0.005	<0.005	**0.115**
Aluminum, Dissolved	mg/L	NS	36	0	<0.05	<0.05	<0.05
Vanadium, Dissolved	mg/L	NS	0.036	0	<0.005	<0.005	<0.005
Arsenic, Dissolved	mg/L	0.01	0.000045	0.0117	**0.000709 J**	**0.000268 J**	**0.000421 J**
Lead, Dissolved	mg/L	0.015	NS	0	<0.00025	**0.000333 J**	<0.00025
Antimony, Dissolved	mg/L	0.006	0.015	0	<0.00025	**0.000333 J**	<0.00025
Selenium, Dissolved	mg/L	0.05	0.18	0	**0.000501 J**	<0.001	<0.001
Thallium, Dissolved	mg/L	0.002	0.0024	0	**0.000649**	**0.0002**	**0.000601**
Mercury, Dissolved	mg/L	0.002	0.011	0	<0.0001	<0.0001	<0.0001
Pesticides							
4,4'-DDD	µg/L	NS	0.28	0	<0.0102	<0.0102	<0.01
4,4'-DDE	µg/L	NS	0.2	0	<0.0102	<0.0102	<0.01
4,4'-DDT	µg/L	NS	0.2	0	<0.0102	<0.0102	<0.01
Aldrin	µg/L	NS	0.003	0	<0.0102	<0.0102	<0.01
alpha-BHC	µg/L	NS	0.011	0	<0.0102	<0.0102	<0.01
alpha Chlordane	µg/L	NS	NS	0	<0.0102	<0.0102	<0.01
beta-BHC	µg/L	NS	0.032	0	<0.0102	<0.0102	<0.01
delta-BHC	µg/L	NS	NS	0	<0.0102	<0.0102	<0.01

Table B-1
Groundwater Sample Results (Continued)

Well Location: Sample Date: Sample ID: Laboratory Report: Sample Type: ANALYTE	UNITS	MCL	Region 9 PRG	RVAAP Background	LL4mw196 7/30/07 LL4mw196-073007 L0707739 Reg	LL4mw197 7/30/07 LL4mw197-073007 L0707739 Reg	LL4mw198 7/30/07 LL4mw198-073007 L0707739 Reg
Dieldrin	µg/L	NS	0.0023	0	<0.0102	<0.0102	<0.01
Endosulfan I	µg/L	NS	220	0	<0.0102	<0.0102	<0.01
Endosulfan II	µg/L	NS	220	0	<0.0102	<0.0102	<0.01
Endosulfan sulfate	µg/L	NS	NS	0	<0.0102	<0.0102	<0.01
Endrin	µg/L	2	11	0	<0.0102	<0.0102	<0.01
Endrin aldehyde	µg/L	NS	11	0	<0.0102	<0.0102	<0.01
Endrin ketone	µg/L	NS	NS	0	<0.0102	<0.0102	<0.01
gamma-BHC (Lindane)	µg/L	0.2	0.052	0	<0.0102	<0.0102	<0.01
gamma Chlordane	µg/L	NS	NS	0	<0.0102	<0.0102	<0.01
Heptachlor	µg/L	0.4	0.015	0	<0.0102	<0.0102	<0.01
Heptachlor epoxide	µg/L	0.2	0.0074	0	<0.0102	<0.0102	<0.01
Methoxychlor	µg/L	40	180	0	<0.0102	<0.0102	<0.01
Toxaphene	µg/L	2	0.061	0	<0.306	<0.306	<0.3
Polychlorinated Biphenyls							
Aroclor-1016	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1221	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1232	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1242	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1248	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1254	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25
Aroclor-1260	µg/L	0.5	0.034	0	<0.255	<0.255	<0.25

Table B-1
Groundwater Sample Results (Continued)

Well Location:		NA	NA	NA	NA
Sample Date:		7/30/07	7/30/08	7/31/07	7/31/07
Sample ID:		Pump Rinsate-073007	Trip Blank-073007	Pump Rinsate-073107	Trip Blank-073107
Laboratory Report:		L0708030	L0707739	L0708030	L0708030
Sample Type:		RB	TB	RB	TB
ANALYTE	**UNITS**				
Volatiles					
Dichlorodifluoromethane	µg/L	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	<0.25	**0.448 J**	<0.25	**0.447 J**
Vinyl chloride	µg/L	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	**5.43 J**	<2.5	**5.50 J**	<2.5
Carbon disulfide	µg/L	<0.5	<0.5	<0.5	<0.5
Methyl acetate	µg/L	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	<0.25	**1.02 J**	<0.25	**1.03 J**
Methyl tert-butyl ether	µg/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	<0.125	<0.125	<0.125	<0.125
2-Butanone	µg/L	<2.5	<2.5	<2.5	<2.5
Chloroform	µg/L	**0.330 J**	<0.125	**0.314 J**	<0.125
1,1,1-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	<0.125	<0.125	<0.125	<0.125
Benzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Trichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	**0.414 J**	<0.25	**0.396 J**	<0.250
cis-1,3-Dichloropropene	µg/L	<0.25	<0.25	<0.25	<0.25
4-Methyl-2-pentanone	µg/L	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5

Table B-1
Groundwater Sample Results (Continued)

ANALYTE	UNITS	Well Location: NA Sample Date: 7/30/07 Sample ID: Pump Rinsate-073007 Laboratory Report: L0708030 Sample Type: RB	Well Location: NA Sample Date: 7/30/08 Sample ID: Trip Blank-073007 Laboratory Report: L0707739 Sample Type: TB	Well Location: NA Sample Date: 7/31/07 Sample ID: Pump Rinsate-073107 Laboratory Report: L0708030 Sample Type: RB	Well Location: NA Sample Date: 7/31/07 Sample ID: Trip Blank-073107 Laboratory Report: L0708030 Sample Type: TB
1,1,2-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	µg/L	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25

Table B-1
Groundwater Sample Results (Continued)

ANALYTE	UNITS	Well Location: NA Sample Date: 8/1/07 Sample ID: Pump Rinsate 1 Laboratory Report: L0708092 Sample Type: RB	Well Location: NA Sample Date: 8/2/07 Sample ID: Pump Rinsate 2 Laboratory Report: L0708092 Sample Type: RB	Well Location: NA Sample Date: 8/1/07 Sample ID: Trip Blank-080107 Laboratory Report: L0708053 Sample Type: TB	Well Location: NA Sample Date: 8/2/07 Sample ID: Trip Blank-080207 Laboratory Report: L0708092 Sample Type: TB
Volatiles					
Dichlorodifluoromethane	µg/L	<0.25	<0.25	<0.25	<0.25
Chloromethane	µg/L	**0.307 J**	**0.326 J**	**0.381 J**	**0.560 J**
Vinyl chloride	µg/L	<0.25	<0.25	<0.25	<0.25
Bromomethane	µg/L	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	µg/L	<0.25	<0.25	<0.25	<0.25
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Acetone	µg/L	<2.5	<2.5	<2.5	<2.5
Carbon disulfide	µg/L	<0.5	<0.5	<0.5	<0.5
Methyl acetate	µg/L	<0.25	<0.25	<0.25	<0.25
Methylene chloride	µg/L	<0.25	<0.25	**1.13 J**	<0.25
Methyl tert-butyl ether	µg/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	<0.125	<0.125	<0.125	<0.125
2-Butanone	µg/L	<2.5	<2.5	<2.5	<2.5
Chloroform	µg/L	**0.337 J**	**0.327 J**	<0.125	<0.125
1,1,1-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Cyclohexane	µg/L	<0.25	<0.25	<0.25	<0.25
Carbon tetrachloride	µg/L	<0.125	<0.125	<0.125	<0.125
Benzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Trichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
Methylcyclohexane	µg/L	<0.25	<0.25	<0.25	<0.25
1,2-Dichloropropane	µg/L	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L	<0.25	<0.25	<0.25	<0.25
Toluene	µg/L	**0.734 J**	**0.729 J**	<0.25	<0.25
cis-1,3-Dichloropropene	µg/L	<0.25	<0.25	<0.25	<0.25
4-Methyl-2-pentanone	µg/L	<2.5	<2.5	<2.5	<2.5

Table B-1
Groundwater Sample Results (Continued)

	Well Location:	NA	NA	NA	NA
	Sample Date:	8/1/07	8/2/07	8/1/07	8/2/07
	Sample ID:	Pump Rinsate 1	Pump Rinsate 2	Trip Blank-080107	Trip Blank-080207
	Laboratory Report:	L0708092	L0708092	L0708053	L0708092
	Sample Type:	RB	RB	TB	TB
ANALYTE	UNITS				
trans-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
2-Hexanone	µg/L	<2.5	<2.5	<2.5	<2.5
Dibromochloromethane	µg/L	<0.25	<0.25	<0.25	<0.25
1,2-Dibromoethane	µg/L	<0.25	<0.25	<0.25	<0.25
Chlorobenzene	µg/L	<0.25	<0.25	<0.25	<0.25
Ethyl benzene	µg/L	<0.25	<0.25	<0.25	<0.25
Xylenes, Total	µg/L	<0.5	<0.5	<0.5	<0.5
Styrene	µg/L	<0.125	<0.125	<0.125	<0.125
Bromoform	µg/L	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	µg/L	<0.25	<0.25	<0.25	<0.25
1,1,2,2-Tetrachloroethane	µg/L	<0.125	<0.125	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	<0.25	<0.25	<0.25	<0.25
1,4-Dichlorobenzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dichlorobenzene	µg/L	<0.125	<0.125	<0.125	<0.125
1,2-Dibromo-3-chloropropane	µg/L	<1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25
trans-1,2-Dichloroethene	µg/L	<0.25	<0.25	<0.25	<0.25

Notes and Data Qualifiers:

MCL	Maximum Contaminant Limit
PRG	Preliminary Remediation Goal
REG	regular sample
FD	field duplicate
RB	equipment rinsate blank
TB	trip blank
NA	not analyzed
NS	no standard

µg/L	micrograms per liter
mg/L	milligrams per liter
Bold	detected compounds
<	This result was not detected at or above the sample detection limit.
J	The result was positively identified but is less than the reporting limit.
*	Secondary Drinking Water MCL.

Table B-2
Off-Site Water Source Sample Results

Off-Site Water Source Location:		Newton Falls Water Treatment Facility	
Sample ID:		RVAAP-OSS	Trip Blank-080707
Laboratory Report:		L0708235	L0708235
Sample Date:		08/07/07	8/07/07
ANALYTE	UNITS		
Volatiles			
Acetone	µg/L	3.23 J	<2.50
Benzene	µg/L	<0.125	<0.125
Bromodichloromethane	µg/L	22.1	<0.250
Bromoform	µg/L	1.27 J	<0.500
Bromomethane	µg/L	<0.500	<0.500
2-Butanone	µg/L	<2.50	<2.50
Carbon disulfide	µg/L	<0.500	<0.500
Carbon tetrachloride	µg/L	<0.250	<0.250
Chlorobenzene	µg/L	<0.125	<0.125
Chloroethane	µg/L	<0.500	<0.500
Chloroform	µg/L	41.8	<0.125
Chloromethane	µg/L	0.835 J	0.510 J
Cyclohexane	µg/L	<0.250	<0.250
Dibromochloromethane	µg/L	6.85	<0.250
1,2-Dibromo-3-chloropropane	µg/L	<1.00	<1.00
1,2-Dibromoethane	µg/L	<0.250	<0.250
1,2-Dichlorobenzene	µg/L	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	<0.250	<0.250
1,4-Dichlorobenzene	µg/L	<0.125	<0.125
Dichlorodifluoromethane	µg/L	<0.250	<0.250
1,1-Dichloroethane	µg/L	<0.125	<0.125
1,2-Dichloroethane	µg/L	<0.250	<0.250
1,1-Dichloroethene	µg/L	<0.500	<0.500
cis-1,2-Dichloroethene	µg/L	<0.250	<0.250
trans-1,2-Dichloroethene	µg/L	<0.250	<0.250
1,2-Dichloropropane	µg/L	<0.200	<0.200
cis-1,3-Dichloropropene	µg/L	<0.250	<0.250
trans-1,3-Dichloropropene	µg/L	<0.500	<0.500
Ethylbenzene	µg/L	<0.250	<0.250
2-Hexanone	µg/L	<2.50	<2.50
Isopropylbenzene	µg/L	<0.250	<0.250
4-Methyl-2-pentanone	µg/L	<2.50	<2.50
Methyl acetate	µg/L	<0.250	<0.250
Methyl tert butyl ether	µg/L	<0.500	<0.500
Methylcyclohexane	µg/L	<0.250	<0.250
Methylene chloride	µg/L	<0.250	<0.250
Styrene	µg/L	<0.125	<0.125
1,1,2,2-Tetrachloroethane	µg/L	<0.125	<0.125
Tetrachloroethane	µg/L	<0.250	<0.250
Toluene	µg/L	<0.250	<0.250
1,2,4-Trichlorobenzene	µg/L	<0.200	<0.200
1,1,1-Trichloroethane	µg/L	<0.250	<0.250

Table B-2
Off-Site Water Source Sample Results (Continued)

Off-Site Water Source Location:		Newton Falls Water Treatment Facility	
Sample ID:		RVAAP-OSS	Trip Blank
Laboratory Report:		L0708235	L0708235
Sample Date:		8/07/07	8/07/07
ANALYTE	UNITS		
1,1,2-Trichloroethane	µg/L	<0.250	<0.250
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	<0.250	<0.250
Trichloroethene	µg/L	<0.250	<0.250
Trichlorofluoromethane	µg/L	<0.250	<0.250
Vinyl chloride	µg/L	<0.250	<0.250
Total Xylenes	µg/L	<0.500	<0.500
Semi-Volatiles			NA
1,1-Biphenyl	µg/L	<2.55	
Phenol	µg/L	<2.55	
bis (2-Chloroethyl) ether	µg/L	<2.55	
2-Chlorophenol	µg/L	<2.55	
2-Methylphenol	µg/L	<2.55	
3-, 4-Methylphenol	µg/L	<2.55	
bis (2-chloroisopropyl) ether	µg/L	<2.55	
N-Nitroso-di-n-propylamine	µg/L	<2.55	
Hexachloroethane	µg/L	<2.55	
Nitrobenzene	µg/L	<2.55	
Isophorone	µg/L	<2.55	
2-Nitrophenol	µg/L	<2.55	
2,4-Dimethylphenol	µg/L	<2.55	
bis (2-Chloroethoxy) methane	µg/L	<2.55	
2,4-Dichlorophenol	µg/L	<2.55	
Naphthalene	µg/L	<2.55	
4-Chloroaniline	µg/L	<2.55	
Hexachlorobutadiene	µg/L	<2.55	
4-Chloro-3-methylphenol	µg/L	<2.55	
2-Methylnaphthalene	µg/L	<2.55	
Hexachlorocyclopentadiene	µg/L	<2.55	
2,4,6-Trichlorophenol	µg/L	<2.55	
2,4,5-Trichlorophenol	µg/L	<2.55	
2-Chloronaphthalene	µg/L	<2.55	
2-Nitroaniline	µg/L	<12.8	
Dimethylphthalate	µg/L	<2.55	
Acenaphthylene	µg/L	<2.55	
2,6-Dintrotoluene	µg/L	<2.55	
3-Nitroaniline	µg/L	<12.8	
Acenaphthene	µg/L	<2.55	
Acetaphenone	µg/L	<2.55	
2,4-Dinitrophenol	µg/L	<12.8	
4-Nitrophenol	µg/L	<2.55	
Dibenzofuran	µg/L	<2.55	
2,4-Dinitrotoluene	µg/L	<2.55	
Diethylphthalate	µg/L	<2.55	

Table B-2
Off-Site Water Source Sample Results (Continued)

Off-Site Water Source Location:		Newton Falls Water Treatment Facility	
Sample ID:		RVAAP-OSS	Trip Blank
Laboratory Report:		L0708235	L0708235
Sample Date:		8/07/07	8/07/07
ANALYTE	UNITS		
4-Chlorophenyl-phenyl ether	µg/L	<12.8	
Fluorene	µg/L	<2.55	
4-Nitroaniline	µg/L	<12.8	
4,6-Dinitro-2-methylphenol	µg/L	<12.8	
N-Nitrosodiphenylamine	µg/L	<2.55	
4-Bromophenyl-phenylether	µg/L	<2.55	
Hexachlorobenzene	µg/L	<2.55	
Pentachlorophenol	µg/L	<2.55	
Phenanthrene	µg/L	<2.55	
Anthracene	µg/L	<2.55	
Atrazine	µg/L	<10.2	
Di-N-Butylphthalate	µg/L	<2.55	
Fluoranthene	µg/L	<2.55	
Pyrene	µg/L	<2.55	
Butylbenzylphthalate	µg/L	<2.55	
Caprolactam	µg/L	<2.55	
Carbazole	µg/L	<2.55	
3,3'-Dichlorobenzidine	µg/L	<2.55	
Benzo(a)anthracene	µg/L	<2.55	
Chrysene	µg/L	<2.55	
bis (2-Ethylhexyl) phthalate	µg/L	<2.55	
Di-n-octylphthalate	µg/L	<2.55	
Benzaldhyde	µg/L	<10.2	
Benzo(b)fluoranthene	µg/L	<2.55	
Benzo(k)fluoranthene	µg/L	<2.55	
Benzo(a)pyrene	µg/L	<2.55	
Indeno(1,2,3-cd)pyrene	µg/L	<2.55	
Dibenzo(a,h)anthracene	µg/L	<2.55	
Benzo(g,h,i)perylene	µg/L	<2.55	
Explosives			NA
1,3-Dinitrobenzene	mg/L	<0.255	
2,4,6-Trinitrotoluene	mg/L	<0.255	
2,4-Dinitrotoluene	mg/L	<0.255	
2,6-Dinitrotoluene	mg/L	<0.255	
2-Amino-4,6-dinitrotoluene	mg/L	<0.255	
2-Nitrotoluene	mg/L	<0.255	
3-Nitrotoluene	mg/L	<0.255	
4-Amino-2,6-dinitrotoluene	mg/L	<0.255	
4-Nitrotoluene	mg/L	<0.255	
HMX	mg/L	<0.255	
Nitrobenzene	mg/L	<0.255	
RDX	mg/L	<0.255	
1,3,5-Trinitrobenzene	mg/L	<0.255	

Table B-2
Off-Site Water Source Sample Results (Continued)

Off-Site Water Source Location:		Newton Falls Water Treatment Facility	
Sample ID:		RVAAP-OSS	Trip Blank
Laboratory Report:		L0708235	L0708235
Sample Date:		8/07/07	8/07/07
ANALYTE	UNITS		
Tetryl	mg/L	<0.255	
Nitroglycerine	mg/L	<0.255	
Nitrocellulose	mg/L	<0.250	
Nitroguanidine	mg/L	<25.0	
Metals			NA
Mercury, Dissolved	mg/L	<0.000100	
Arsenic, Dissolved	mg/L	<0.00500	
Lead, Dissolved	mg/L	<0.00250	
Antimony, Dissolved	mg/L	0.000402 J	
Selenium, Dissolved	mg/L	0.00148	
Thallium, Dissolved	mg/L	0.0000820 J	
Aluminum, Dissolved	mg/L	<0.0500	
Silver, Dissolved	mg/L	<0.00500	
Barium, Dissolved	mg/L	0.0297	
Beryllium, Dissolved	mg/L	<0.000500	
Calcium, Dissolved	mg/L	38.0	
Cadmium, Dissolved	mg/L	<0.00250	
Cobalt, Dissolved	mg/L	<0.00250	
Chromium, Dissolved	mg/L	<0.00250	
Copper, Dissolved	mg/L	<0.00500	
Iron, Dissolved	mg/L	<0.00250	
Potassium, Dissolved	mg/L	4.81	
Magnesium, Dissolved	mg/L	11.3	
Manganese, Dissolved	mg/L	<0.00500	
Sodium, Dissolved	mg/L	42.2	
Nickel, Dissolved	mg/L	<0.00500	
Vanadium, Dissolved	mg/L	<0.00500	
Zinc, Dissolved	mg/L	0.00887	
Pesticides			NA
4,4'-DDD	µg/L	<0.0102	
4,4'-DDE	µg/L	<0.0102	
4,4'-DDT	µg/L	<0.0102	
Aldrin	µg/L	<0.0102	
alpha-BHC	µg/L	<0.0102	
alpha Chlordane	µg/L	<0.0102	
beta-BHC	µg/L	<0.0102	
delta-BHC	µg/L	<0.0102	
Dieldrin	µg/L	<0.0102	
Endosulfan I	µg/L	<0.0102	
Endosulfan II	µg/L	<0.0102	
Endosulfan sulfate	µg/L	<0.0102	
Endrin	µg/L	<0.0102	
Endrin aldehyde	µg/L	<0.0102	

Table B-2
Off-Site Water Source Sample Results (Continued)

Off-Site Water Source Location:		Newton Falls Water Treatment Facility	
Sample ID:		RVAAP-OSS	Trip Blank
Laboratory Report:		L0708235	L0708235
Sample Date:		8/07/07	8/07/07
ANALYTE	**UNITS**		
Endrin ketone	µg/L	<0.0102	
gamma-BHC (Lindane)	µg/L	<0.0102	
gamma Chlordane	µg/L	<0.0102	
Heptachlor	µg/L	<0.0102	
Heptachlor epoxide	µg/L	<0.0102	
Methoxychlor	µg/L	<0.0102	
Toxaphene	µg/L	<0.306	
Polychlorinated Biphenyls			NA
Aroclor-1016	µg/L	<0.255	
Aroclor-1221	µg/L	<0.255	
Aroclor-1232	µg/L	<0.255	
Aroclor-1242	µg/L	<0.255	
Aroclor-1248	µg/L	<0.255	
Aroclor-1254	µg/L	<0.255	
Aroclor-1260	µg/L	<0.255	

Notes and Qualifiers:

µg/L micrograms per liter
mg/L milligrams per liter
NA not analyzed
< This result was not detected at or above the sample detection limit.
J The result was positively identified but is less than the reporting limit.

Table B-3
Confirmatory Soil Multi-Increment Sample Results

Station ID	Station ID for Combined Sample Locations	Alternate Sample ID No.	Sample Date	QC	Sample Depth (ft bgs)	Units	PCBs	SVOC	Explosives		Propellant			Metals						Laboratory Report No.	
							Arochlor -1254	Benzo(a)pryene	2,4,6-TNT	RDX	Nlintroguanidine	Nintroglycerine	Nintrocellulose	Aluminum	Antimony	Arsenic	Hex. Chromium	Lead	Manganese		
Surface Soil (0-1 ft bgs) Cleanup Goals (mg/kg):							**35**	**10**	**1,646**	**838**	**NA**	**NA**	**NA**	**34,942**	**2,458**	**31**	**16**	**1,995**	**1,800**		
Subsurface Soil (1-4 ft bgs) Cleanup Goals (mg/kg):																			**3,030**	**Test America**	**Kemron**
LL1ss-001-cs		LL1ss-001-0822-cs	8/22/2007		0 - 2.25	mg/kg													556	A7H230265	
LL1ss-002-cs		LL1ss-002-0822-cs	8/22/2007		0 - 2.25	mg/kg								5730		7.1			615	A7H230265	
LL1ss-003-cs		LL1ss-003-0822-cs	8/22/2007		0 - 2.5	mg/kg													1150	A7H230265	
		LL1ss-003-0911-cs	9/11/2007		0 - 2.5	mg/kg					<0.25	2.3	17.5							A7I130241	
		LL1ss-003-0927-cs	9/27/2007		0 - 2.5	mg/kg					<0.25	0.25J	9.8J							A71270359	
LL1ss-004-cs		LL1ss-004-0822-cs	8/22/2007		0 - 2.25	mg/kg													857	A7H230265	
LL1ss-005-cs		LL1ss-005-1003-cs	10/3/2007		0 - 2.25	mg/kg													696	A7J050117	
LL1ss-006-cs	LL1ss-006-cs	LL1ss-006-1017-cs	10/17/2007		0 - 2	mg/kg											<0.101		1190		L0710549
LL1ss-007-cs																					
LL1ss-008-cs		LL1ss-006-1017-cs-DUP	10/17/07	FD	0 - 2	mg/kg											<0.101		1490		
LL1ss-009-cs	LL1ss-009-cs	LL1ss-009-0821-cs	8/21/2007		0 - 2	mg/kg													900	A7H230253	
LL1ss-010-cs		LL1ss-009-0911-cs	9/11/2007		0 - 2	mg/kg					<0.25	<0.5	1.9B							A7I130241	
LL1ss-011-cs		LL1ss-009-0926-cs	9/26/2007		0 - 2	mg/kg					<0.25	<0.5	3.6B,J							A7I260304	
LL1ss-012-cs	LL1ss-012-cs	LL1ss-012-0924-cs	9/24/2007		0 - 2.5	mg/kg					0.098J [c]	0.89 [c]	50.3J [c]				0.47B [c]		820	A7I260304	
		LL1ss-012-1015-cs-DUP	10/15/2007	FD	0 – 2.5	mg/kg					<0.25 [c]	0.86 [c]	53.9 [c]				3.2 [c]			A7J160300	
LL1ss-013-cs		LL1ss-012-0827-cs	8/27/2007		0 - 2.5	mg/kg											1.7			A7H280103	
		LL1ss-012-0827-cs-DUP	8/27/2007	FD	0 – 2.5	mg/kg											2.7				
LL1ss-014-cs		LL1ss-014-1004-cs	10/4/2007		0 - 2.75	mg/kg													976	A7J100154	
LL1ss-015-cs		LL1ss-015-1022-cs	10/22/2007		0 - 1	mg/kg												111	329		L0710819
		LL1ss-015-1120-cs	11/20/2007		0 - 1	mg/kg	1.15														L0711604
LL1ss-016-cs		LL1ss-016-0920-cs	9/20/2007		0 - 0.5	mg/kg												122		A7I240122	
LL1ss-017-cs		LL1ss-017-1029-cs	10/29/2007		0 - 2	mg/kg	10.9														L0710842
LL1ss-018-cs		LL1ss-018-0905-cs	9/5/2007		0 - 2.25	mg/kg													380J	A7I130253	
LL1ss-019-cs		LL1ss-019-0921-cs	9/21/2007		0 - 2	mg/kg										8.1			584	A7I260267	
LL1ss-020-cs	LL1ss-020-cs	LL1ss-020-1003-cs	10/3/2007		0 - 2	mg/kg										8.4			728	A7J050117	
LL1ss-021-cs																					
LL1ss-022-cs		LL1ss-022-1018-cs	10/18/2007		0 - 2	mg/kg								12,100		12.8			590		L0710549
		LL1ss-022-1018-cs-DUP	10/18/2007	FD	0 - 2	mg/kg								13,600		13.8			542		
LL1ss-023-cs		LL1ss-023-0823-cs	8/23/2007		0 - 2	mg/kg													474J	A7H240252	
LL1ss-024-cs		LL1ss-024-0912-cs	9/12/2007		0 - 2.5	mg/kg			290											A7I130274	
LL1ss-025-cs	LL1ss-025-cs	LL1ss-025-1003-cs	10/3/2007		0 - 2	mg/kg			350										397	A7J050117	
LL1ss-026-cs																					
LL1ss-027-cs		LL1ss-027-0907-cs	9/7/2007		0 - 2	mg/kg													845J	A7I130241	
		LL1ss-027-1003-cs	10/3/2007		0 - 2	mg/kg													1330	A7J050117	
LL1ss-028-cs		LL1ss-028-1022-cs	10/22/2007		0 - 2	mg/kg										6.03		150			L0710819
		LL1ss-028-1120-cs	11/20/2007		0 - 2	mg/kg	0.683														L0711604

Table B-3
Confirmatory Soil Multi-Increment Sample Results (Continued)

Station ID	Station ID for Combined Sample Locations	Alternate Sample ID No.	Sample Date	QC	Sample Depth (ft bgs)	Units	PCBs	SVOC	Explosives		Propellant			Metals						Laboratory Report No.	
							Arochlor -1254	Benzo(a)pryene	2,4,6-TNT	RDX	Nlintroguanidine	Nitroglycerine	Nintrocellulose	Aluminum	Antimony	Arsenic	Hex. Chromium	Lead	Manganese	Test America	Kemron
Surface Soil (0-1 ft bgs) Cleanup Goals (mg/kg):							35	10	1,646	838	NA	NA	NA	34,942	2,458	31	16	1,995	1,800		
Subsurface Soil (1-4 ft bgs) Cleanup Goals (mg/kg):																			3,030		
LL1ss-029-cs	LL1ss-029-cs	LL1ss-029-1022-cs	10/22/2007		0 - 2	mg/kg												430			L0710819
LL1ss-030-cs		LL1ss-029-1120-cs	11/20/2007		0 - 2	mg/kg	54.3 [a]														L0711604
LL1ss-031-cs																					
LL1ss-032-cs		LL1ss-032-1011-cs	10/11/2007		0 - 2	mg/kg			14.9	28.1											L0710423
		LL1ss-032-1011-cs-DUP	10/11/2007	FD	0 - 2	mg/kg			21.2	39.3											
LL1ss-033-cs		LL1ss-033-0911-cs	9/11/2007		0 - 2.25	mg/kg			160											A7I130241	
LL1ss-034-cs		LL1ss-034-0829-cs	8/29/2007		0 - 2.25	mg/kg								9590		12.4				A7H310107	
LL1ss-035-cs		LL1ss-035-0824-cs	8/24/2007		0 - 2	mg/kg													352J	A7H240252	
LL1ss-036-cs		LL1ss-036-0827-cs	8/27/2007		0 - 2.5	mg/kg													346	A7H280103	
LL1ss-037-cs		LL1ss-037-0828-cs	8/28/2007		0 - 3	mg/kg													898	A7H290102	
LL1ss-038-cs		LL1ss-038-1011-cs	10/11/2007		0 - 0.5	mg/kg			2010 [a]	2.4											L0710423
		LL1ss-038-1011-cs-DUP	10/11/2007	FD	0 – 0.5	mg/kg			1790 [a]	3.21											
		LL1ss-038-1108-cs	11/8/2007		0 – 0.5	mg/kg			<0.0992												L0711259
LL1ss-039-cs		LL1ss-039-0924-cs	9/24/2007		0 - 0.5	mg/kg												259		A7I260304	
LL1ss-040-cs		LL1ss-040-0912-cs	9/12/2007		0 - 2	mg/kg		0.49												A7I130274	
LL1ss-041-cs		LL1ss-041-0905-cs	9/5/2007		0 - 2	mg/kg													798J	A7I130253	
LL1ss-042-cs		LL1ss-042-0828-cs	8/28/2007		0 - 2	mg/kg													490	A7H290102	
LL1ss-043-cs		LL1ss-043-0921-cs	9/21/2007		0 - 2	mg/kg												84.6		A7I260304	
LL1ss-044-cs		LL1ss-044-1011-cs	10/11/2007		0 - 2	mg/kg									0.476			33.5			L0710422
LL1ss-045-cs		LL1ss-045-0829-cs	8/29/2007		0 - 2	mg/kg													929	A7H310107	
LL1ss-046-cs		LL1ss-046-0829-cs	8/29/2007		0 - 2.5	mg/kg													633	A7H310107	
LL1ss-115-cs		LL1ss-115-0917-cs	9/17/2007		0 - 2	mg/kg													586	A7I240122	
LL1ss-116-cs		LL1ss-116-0917-cs	9/17/2007		0 - 2	mg/kg													866	A7I240122	
LL1ss-117-cs		LL1ss-117-0927-cs	9/27/2007		0 - 2	mg/kg													951	A7I240122	
LL1ss-118-cs		LL1ss-118-1011-cs	10/11/2007		NA	mg/kg										12.5					L0710423
LL1ss-119-cs		LL1ss-119-1011-cs	10/11/2007		NA	mg/kg													964		L0710423
LL2ss-047-cs		LL2ss-047-1009-cs	10/9/2007		0 - 2	mg/kg													308	A7J100154	
LL2ss-048-cs		LL2ss-048-1010-cs	10/10/2007		0 - 2	mg/kg										19.9					L0710422
LL2ss-049-cs		LL2ss-049-1010-cs	10/10/2007		0 - 2	mg/kg										76.3 [a]					L0710422
		LL2ss-049-1108-cs	11/8/2007		0 - 2	mg/kg										14.1					L0711259
LL2ss-050-cs		LL2ss-050-1019-cs	10/19/2007		0 - 2	mg/kg											<0.103		1410		L0710586
LL2ss-051-cs		LL2ss-051-1010-cs	10/10/2007		0 - 2	mg/kg													437		L0710422
LL2ss-052-cs		LL2ss-052-1011-cs	10/11/2007		0 - 2	mg/kg													210		L0710422
LL2ss-053-cs		LL2ss-053-1011-cs	10/11/2007		0 - 2	mg/kg													1210		L0710422
LL2ss-054-cs		LL2ss-054-1011-cs	10/11/2007		0 - 2	mg/kg			<0.246												L0710423
LL2ss-055-cs		LL2ss-055-1008-cs	10/8/2007		0 - 2	mg/kg			77.6												L0710422
LL2ss-056-cs		LL2ss-056-1019-cs	10/19/2007		0 - 2	mg/kg													450		L0710586
LL2ss-057-cs		LL2ss-057-1010-cs	10/10/2007		0 - 2	mg/kg													1140		L0710422
LL2ss-058-cs		LL2ss-058-1010-cs	10/10/2007		0 - 2	mg/kg													330		L0710422
LL2ss-059-cs		LL2ss-059-1008-cs	10/8/2007		0 - 2	mg/kg			0.27												L0710422

Table B-3
Confirmatory Soil Multi-Increment Sample Results (Continued)

Station ID	Station ID for Combined Sample Locations	Alternate Sample ID No.	Sample Date	QC	Sample Depth (ft bgs)	Units	PCBs	SVOC	Explosives		Propellant			Metals						Laboratory Report No.	
							Arochlor -1254	Benzo(a)pryene	2,4,6-TNT	RDX	Nlintroguanidine	Nitroglycerine	Nitrocellulose	Aluminum	Antimony	Arsenic	Hex. Chromium	Lead	Manganese		
Surface Soil (0-1 ft bgs) Cleanup Goals (mg/kg):							**35**	**10**	**1,646**	**838**	**NA**	**NA**	**NA**	**34,942**	**2,458**	**31**	**16**	**1,995**	**1,800**		
Subsurface Soil (1-4 ft bgs) Cleanup Goals (mg/kg):																			**3,030**	**Test America**	**Kemron**
LL2ss-060-cs		LL2ss-060-1008-cs	10/8/2007		0 - 2	mg/kg				<0.976											L0710422
LL2ss-061-cs		LL2ss-061-1004-cs	10/4/2007		0 - 2	mg/kg										11.2				A7J080109	
		LL2ss-061-1004-cs-DUP	10/4/2007	FD	0 - 2	mg/kg										11.8					
LL2ss-062-cs																					
LL2ss-063-cs	LL2ss-062-cs	LL2ss-062-1030-cs	10/30/2007		0 - 2.5	mg/kg	0.427									7.52 [c]		44.5	578 [c]		L0711004
LL2ss-064-cs																					
LL2ss-065-cs		LL2ss-065-1019-cs	10/19/2007		0 - 2	mg/kg												78.6			L0710586
LL2ss-066-cs		LL2ss-066-1217-cs	12/17/2007		0 - 2	mg/kg											<0.101	40.3			L0712501
LL2ss-067-cs		LL2ss-067-1004-cs	10/4/2007		0 - 2	mg/kg									<10.3	11.9		18.6		A7J080109	
		LL2ss-067-1004-cs-DUP	10/4/2007	FD	0 - 2	mg/kg									<10.3	12		17.3			
LL2ss-068-cs		LL2ss-068-1004-cs	10/4/2007		0 - 2	mg/kg													926	A7J090219	
LL2ss-069-cs		LL2ss-069-1011-cs	10/11/2007		0 - 1	mg/kg													441		L0710422
LL2ss-070-cs		LL2ss-070-1011-cs	10/11/2007		0 - 2	mg/kg													1030		L0710422
LL3ss-071-cs		LL3ss-071-0926-cs	9/26/2007		0 - 2	mg/kg													686	A7I260304	
LL3ss-072-cs		LL3ss-072-0828-cs	8/28/2007		0 - 2	mg/kg													3830 [b]	A7H310107	
		LL3ss-072-0828-cs	8/28/2007	FD	0 - 2	mg/kg													2000 [a]		
		LL3ss-072-0828-cs	10/8/2007		0 - 2	mg/kg											<0.23 BJ [c]		1040	A7J090219	
LL3ss-073-cs		LL3ss-073-1022-cs	10/22/2007		0 - 2.5	mg/kg	13.8											309	1550		L0710781
LL3ss-074-cs		LL3ss-074-0830-cs	8/30/2007		0 - 2	mg/kg													987J	A7H310107	
LL3ss-075-cs		LL3ss-075-0921-cs	9/21/2007		0 - 2	mg/kg													908	A7I260267	
LL3ss-076-cs		LL3ss-076-0927-cs	9/27/2007		0 - 2	mg/kg			1.5											A71270359	
LL3ss-077-cs	LL3ss-077-cs	LL3ss-077-1024-cs	10/24/2007		0 - 2.5	mg/kg										14			497		L0710819
LL3ss-084-cs		LL3ss-077-1024-cs	11/20/2007		0 – 2.5	mg/kg	6.09														L0711604
LL3ss-078-cs		LL3ss-078-1120-cs	11/20/2007		0 - 2	mg/kg	0.246														L0711604
LL3ss-079-cs		LL3ss-079-0912-cs	9/12/2007		0 - 2.5	mg/kg													589J	A7I140292	
LL3ss-080-cs		LL3ss-080-0829-cs	8/29/2007		0 - 2	mg/kg										9.3				A7H310107	
LL3ss-081-cs	LL3ss-081-cs	LL3ss-081-1010-cs	10/10/2007		0 - 0.67	mg/kg													1510		L0710422
LL3ss-082-cs																					
LL3ss-083-cs		LL3ss-083-0829-cs	8/29/2007		0 - 2	mg/kg													931	A7H310107	
LL3ss-085-cs		LL3ss-085-1031-cs	10/31/2007		0 - 2.5	mg/kg	3.38														L0711004
LL3ss-086-cs		LL3ss-086-0907-cs	9/7/2007		0 - 2	mg/kg												26.9		A7I130241	
LL3ss-087-cs		LL3ss-087-1108-cs	11/8/2007		0 - 2.7	mg/kg	<0.00826														L0711259
		LL3ss-087-1108-cs-DUP	11/8/2007	FD	0 – 2.7	mg/kg	0.0132														
LL3ss-088-cs		LL3ss-088-0921-cs	9/21/2007		0 - 2	mg/kg			0.063J											A7I240122	
LL3ss-089-cs		LL3ss-089-1008-cs	10/8/2007		0 - 2	mg/kg								12,600					871	A7J090219	
		LL3ss-089-1008-cs-DUP	10/8/2007	FD	0 - 2	mg/kg								12,300					921		
LL3ss-092-cs		LL3ss-092-1024-cs	10/24/2007		0 - 2	mg/kg	1.19									30.5 [c]		46.6			L0710842

Table B-3
Confirmatory Soil Multi-Increment Sample Results (Continued)

Station ID	Station ID for Combined Sample Locations	Alternate Sample ID No.	Sample Date	QC	Sample Depth (ft bgs)	Units	PCBs	SVOC	Explosives		Propellant			Metals						Laboratory Report No.	
							Arochlor -1254	Benzo(a)pryene	2,4,6-TNT	RDX	Nlintroguanidine	Nintroglycerine	Nintrocellulose	Aluminum	Antimony	Arsenic	Hex. Chromium	Lead	Manganese		
Surface Soil (0-1 ft bgs) Cleanup Goals (mg/kg):							35	10	1,646	838	NA	NA	NA	34,942	2,458	31	16	1,995	1,800		
Subsurface Soil (1-4 ft bgs) Cleanup Goals (mg/kg):																			3,030	Test America	Kemron
LL3ss-090-cs	LL3ss-096-cs	LL3ss-096-1018-cs	10/18/2007		0 - 2	mg/kg	0.0229	0.102	0.314							20 [c]			534		L0710586
LL3ss-091-cs																					
LL3ss-093-cs																					
LL3ss-094-cs																					
LL3ss-095-cs																					
LL3ss-096-cs																					
LL3ss-097-cs																					
LL3ss-098-cs		LL3ss-098-0921-cs	9/21/2007		0 - 2	mg/kg			83											A7I240122	
LL3ss-099-cs		LL3ss-099-0925-cs	9/25/2007		0 - 2.6	mg/kg													563	A7I260304	
LL3ss-100-cs		LL3ss-100-0921-cs	9/21/2007		0 - 2	mg/kg													927	A7I260267	
LL3ss-101-cs		LL3ss-101-0921-cs	9/21/2007		0 - 2	mg/kg													1580	A7I260267	
LL3ss-102-cs		LL3ss-102-0927-cs	9/27/2007		0 - 2	mg/kg													449J	A7I270359	
LL3ss-103-cs		LL3ss-103-1010-cs	10/10/2007		0 - 2	mg/kg											<0.102 [c]		1480		L0710422
LL3ss-104-cs		LL3ss-104-0910-cs	9/10/2007		0 - 2	mg/kg													1090J	A7I130241	
LL3ss-105-cs		LL3ss-105-1005-cs	10/5/2007		0 - 2	mg/kg													1070	A7J100154	
LL4ss-106-cs		LL4ss-106-0823-cs	8/23/2007		0 - 2	mg/kg													949	A7H240252	
LL4ss-107-cs		LL4ss-107-0822-cs	8/22/2007		0 - 2.5	mg/kg													528	A7H230265	
LL4ss-108-cs		LL4ss-108-0823-cs	8/23/2007		0 - 2.5	mg/kg								29600					5300 [b]	A7H240252	
		LL4ss-108-1011-cs	10/11/2007		0 – 2.5	mg/kg													420		L0710422
LL4ss-109-cs		LL4ss-109-0823-cs	8/23/2007		0 - 2.5	mg/kg								11700					713	A7H240252	
LL4ss-110-cs		LL4ss-110-0823-cs	8/23/2007		0 - 2.8	mg/kg													803	A7H240252	
LL4ss-111-cs		LL4ss-111-0822-cs	8/22/2007		0 - 2	mg/kg												25.4		A7H230265	
LL4ss-112-cs		LL4ss-112-1120-cs	11/20/2007		0 - 2.5	mg/kg	<0.0166														L0711604
		LL4ss-112-1120-cs-DUP	11/20/2007	FD	0 – 2.5	mg/kg	<0.0162														
LL4ss-113-cs		LL4ss-113-0822-cs	8/22/2007		0 - 3	mg/kg													1090	A7H230265	
LL4ss-114-cs		LL4ss-114-0822-cs	8/22/2007		0 - 2.5	mg/kg								4820					465	A7H230265	

Notes and Qualifiers:

Blank Cell – indicates that sample was not analyzed for that particular compound.

a Result exceeds the surface soil cleanup goal

b Result exceeds the surface and subsurface soil cleanup goals (applicable for manganese only)

c Although not originally identified as a contaminant of concern at this location, the analyte was detected during field screen analysis to exceed the applicable cleanup goals, was excavated and submitted for MI analysis.

ft bgs	feet below ground surface	NA	Not Applicable
cs	confirmation sample	mg/kg	milligrams per kilogram
PCBs	polychlorinated biphenyls	FD	field duplicate
SVOCs	semi-volatile organic compounds	<	This result was not detected at or above the sample detection limit.
QC	Quality Control		
TNT	Trinitrotoluene	J	The result was positively identified but is less than the reporting limit.
RDX	Cyclonite		

Table B-4
Borrow Source Sample Results

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank-112007	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	UNITS			UNITS	
Volatiles					
Acetone	µg/kg	<6.29	<5.79	µg/L	<2.50
Acrolein	µg/kg	NA	<23.2	µg/L	NA
Acrylonitrile	µg/kg	NA	<2.90	µg/L	NA
Benzene	µg/kg	<0.629	<0.579	µg/L	<0.125
Bromobenzene	µg/kg	<0.629	<0.579	µg/L	NA
Bromochloromethane	µg/kg	<0.629	<0.579	µg/L	NA
Bromodichloromethane	µg/kg	<0.629	<0.579	µg/L	<0.250
Bromoform	µg/kg	<0.629	<0.579	µg/L	<0.500
Bromomethane	µg/kg	<1.26	<1.16	µg/L	<0.500
1-Butanol	µg/kg	NA	<29.0	µg/L	NA
2-Butanone	µg/kg	<3.15	<2.90	µg/L	<2.50
n-Butylbenzene	µg/kg	<0.629	<0.579	µg/L	NA
sec-Butylbenzene	µg/kg	<0.629	<0.579	µg/L	NA
tert-Butylbenzene	µg/kg	NA	<0.579	µg/L	NA
Carbon disulfide	µg/kg	<0.629	<0.579	µg/L	<0.500
Carbon tetrachloride	µg/kg	<0.629	<0.579	µg/L	<0.250
Chlorobenzene	µg/kg	<0.629	<0.579	µg/L	<0.125
Chlorodibromomethane	µg/kg	<0.629	<0.579	µg/L	<0.250
Chloroethane	µg/kg	<1.26	<1.16	µg/L	<0.500
2-Chloroethyl vinyl ether	µg/kg	<2.52	NA	µg/L	NA
Chloroform	µg/kg	<0.629	<0.579	µg/L	<0.125
Chloromethane	µg/kg	<2.52	<2.32	µg/L	NA
1-Chlorohexane	µg/kg	NA	<0.579	µg/L	NA
2-Chlorotoluene	µg/kg	<0.629	<0.579	µg/L	NA
4-Chlorotoluene	µg/kg	<0.629	<0.579	µg/L	NA
Cyclohexane	µg/kg	NA	NA	µg/L	<0.250
Dibromochloromethane	µg/kg	NA	NA	µg/L	<0.250
1,2-Dibromo-3-chloropropane	µg/kg	<2.52	<2.32	µg/L	<1.00
1,2-Dibromoethane	µg/kg	<0.629	<0.579	µg/L	<0.250
1,2-Dichlorobenzene	µg/kg	<0.629	NA	µg/L	<0.125
1,3-Dichlorobenzene	µg/kg	<0.629	NA	µg/L	<0.250
1,4-Dichlorobenzene	µg/kg	<0.629	<0.579	µg/L	<0.125
Dichlorodifluoromethane	µg/kg	<1.26	<1.16	µg/L	<0.250
1,1-Dichloroethane	µg/kg	<1.26	<1.16	µg/L	<0.125
1,2-Dichloroethane	µg/kg	<0.629	NA	µg/L	<0.250
1,1-Dichloroethene	µg/kg	<0.629	NA	µg/L	<0.500
cis-1,2-Dichloroethene	µg/kg	<0.629	<0.579	µg/L	<0.250
trans-1,2-Dichloroethene	µg/kg	<0.629	<0.579	µg/L	<0.250
1,2-Dichloropropane	µg/kg	<0.629	NA	µg/L	<0.250
1,3-Dichloropropane	µg/kg	<0.629	NA	µg/L	NA
2,2-Dichloropropane	µg/kg	<0.629	<0.579	µg/L	NA
cis-1,3-Dichloropropene	µg/kg	<0.629	<0.579	µg/L	<0.250
trans-1,3-Dichloropropene	µg/kg	<0.629	<0.579	µg/L	<0.500

Table B-4
Borrow Source Sample Results (Continued)

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	UNITS			UNITS	
trans-1,4-Dichloro-2-butene	µg/kg	NA	<0.579	µg/L	NA
1,1-Dichloropropene	µg/kg	<0.629	NA	µg/L	<0.200
Diisopropyl ether	µg/kg	NA	<5.79	µg/L	NA
Ethylbenzene	µg/kg	<0.629	<0.579	µg/L	<0.250
Ethyl methacrylate	µg/kg	NA	<1.16	µg/L	NA
Ethyl tert butyl ether	µg/kg	NA	<0.579	µg/L	NA
2-Hexanone	µg/kg	<3.15	<2.90	µg/L	<2.50
Hexachlorobutadiene	µg/kg	<0.629	<0.579	µg/L	NA
Iodomethane	µg/kg	NA	<1.16	µg/L	NA
Isopropylbenzene	µg/kg	<0.629	<0.579	µg/L	<0.250
p-Isopropyltoluene	µg/kg	<0.629	<0.579	µg/L	NA
4-Methyl-2-pentanone	µg/kg	<3.15	<2.90	µg/L	<2.50
Methyl acetate	µg/kg	NA	NA	µg/L	<0.250
Methylene chloride	µg/kg	<1.26	1.70 J	µg/L	<0.250
Methyl tert butyl ether	µg/kg	NA	<0.579	µg/L	<0.500
Naphthalene	µg/kg	<0.629	NA	µg/L	NA
n-Propylbenzene	µg/kg	<0.629	<0.579	µg/L	NA
Styrene	µg/kg	<0.629	<0.579	µg/L	<0.125
Tert-amyl-methyl ether	µg/kg	NA	<5.79	µg/L	NA
1,1,1,2-Tetrachloroethane	µg/kg	<0.629	NA	µg/L	<0.125
1,1,2,2-Tetrachloroethane	µg/kg	<0.629	NA	µg/L	<0.250
Tetrachloroethane	µg/kg	<0.629	<0.579	µg/L	NA
Toluene	µg/kg	<0.629	<0.579	µg/L	<0.250
1,2,3-Trichlorobenzene	µg/kg	<0.629	NA	µg/L	NA
1,2,4-Trichlorobenzene	µg/kg	<0.629	NA	µg/L	<0.200
1,1,1-Trichloroethane	µg/kg	<0.629	NA	µg/L	<0.250
1,1,2-Trichloroethane	µg/kg	<0.629	NA	µg/L	<0.250
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/kg	NA	NA	µg/L	<0.250
Trichloroethene	µg/kg	<0.629	<0.579	µg/L	<0.250
Trichlorofluoromethane	µg/kg	<1.26	<1.16	µg/L	<0.250
1,2,3-Trichloropropane	µg/kg	<1.26	<1.16	µg/L	NA
1,2,4-Trimethylbenzene	µg/kg	<0.629	NA	µg/L	NA
1,3,5-Trimethylbenzene	µg/kg	<0.629	NA	µg/L	NA
Vinyl acetate	µg/kg	<1.26	<1.16	µg/L	NA
Vinyl chloride	µg/kg	<1.26	<1.16	µg/L	<0.250
Total Xylenes	µg/kg	<0.629	-	µg/L	<0.500
o-Xylene	µg/kg	<0.629	<0.579	µg/L	-
m-, p-Xylene	µg/kg	<0.629	<0.579	µg/L	-
Semi-Volatiles					NA
1,1-Biphenyl	µg/kg	NA	<93.8		
Phenol	µg/kg	<111	<93.8		
bis (2-Chloroethyl) ether	µg/kg	<111	<93.8		
2-Chlorophenol	µg/kg	<111	<93.8		
1,3-Dichlorobenzene	µg/kg	<111	NA		

Table B-4
Borrow Source Sample Results (Continued)

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	UNITS			UNITS	
1,4-Dichlorobenzene	µg/kg	<111	NA		
Benzyl alcohol	µg/kg	<111	NA		
1,2-Dichlorobenzene	µg/kg	<111	NA		
2-Methylphenol	µg/kg	<111	<93.8		
3-, 4-Methylphenol	µg/kg	<111	<93.8		
bis (2-chloroisopropyl) ether	µg/kg	<111	<93.8		
N-Nitrosodipropylamine	µg/kg	<111	<93.8		
Hexachloroethane	µg/kg	<111	<93.8		
Nitrobenzene	µg/kg	<111	<93.8		
Isophorone	µg/kg	<111	<93.8		
2-Nitrophenol	µg/kg	<111	<93.8		
2,4-Dimethylphenol	µg/kg	<111	<93.8		
Benzoic acid	µg/kg	<444	NA		
bis (2-Chloroehoxy) Methane	µg/kg	<111	<93.8		
2,4-Dichlorophenol	µg/kg	<111	<93.8		
1,2,4-Trichlorobenzene	µg/kg	<111	NA		
Naphthalene	µg/kg	<111	<93.8		
4-Chloroaniline	µg/kg	<111	<93.8		
Hexachlorobutadiene	µg/kg	<111	<93.8		
4-Chloro-3-methylphenol	µg/kg	<111	<93.8		
2-Methylnaphthalene	µg/kg	<111	<93.8		
Hexachlorocyclopentadiene	µg/kg	<111	<93.8		
2,4,6-Trichlorophenol	µg/kg	<111	<93.8		
2,4,5-Trichlorophenol	µg/kg	<111	<93.8		
2-Chloronaphthalene	µg/kg	<111	<93.8		
2-Nitroaniline	µg/kg	<444	<375		
Dimethylphthalate	µg/kg	<111	<93.8		
Acenaphthylene	µg/kg	<111	<93.8		
2,6-Dintrotoluene	µg/kg	<111	<93.8		
3-Nitroaniline	µg/kg	<444	<375		
Acenaphthene	µg/kg	<111	<93.8		
Acetaphenone	µg/kg	NA	<93.8		
2,4-Dinitrophenol	µg/kg	<444	<375		
4-Nitrophenol	µg/kg	<444	<375		
Dibenzofuran	µg/kg	<111	<93.8		
2,4-Dinitrotoluene	µg/kg	<111	<93.8		
Diethylphthalate	µg/kg	<111	<93.8		
4-Chlorophenyl-phenyl ether	µg/kg	<111	<93.8		
Fluorene	µg/kg	<111	<93.8		
4-Nitroaniline	µg/kg	<444	<375		
4,6-Dinitro-2-methylphenol	µg/kg	<444	<375		
N-Nitrosodiphenylamine	µg/kg	<111	<93.8		
4-Bromophenyl-phenylether	µg/kg	<111	<93.8		
Hexachlorobenzene	µg/kg	<111	<93.8		

Table B-4
Borrow Source Sample Results (Continued)

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	UNITS			UNITS	
Pentachlorophenol	µg/kg	<444	<375		
Phenanthrene	µg/kg	<111	<93.8		
Anthracene	µg/kg	<111	<93.8		
Atrazine	µg/kg	NA	<93.8		
Di-N-Butylphthalate	µg/kg	<111	<93.8		
Fluoranthene	µg/kg	<111	<93.8		
Pyrene	µg/kg	<111	<93.8		
Butylbenzylphthalate	µg/kg	<111	<93.8		
Caprolactam	µg/kg	NA	<93.8		
Carbazole	µg/kg	NA	<93.8		
3,3'-Dichlorobenzidine	µg/kg	<222	<188		
Benzo(a)anthracene	µg/kg	<111	<93.8		
Chrysene	µg/kg	<111	<93.8		
bis (2-Ethylhexyl) phthalate	µg/kg	<111	<93.8		
Di-n-octylphthalate	µg/kg	<111	<93.8		
Benzaldhyde	µg/kg	NA	<93.8		
Benzo(b)fluoranthene	µg/kg	<111	<93.8		
Benzo(k)fluoranthene	µg/kg	<111	<93.8		
Benzo(a)pyrene	µg/kg	<111	<93.8		
Indeno(1,2,3-cd)pyrene	µg/kg	<111	<93.8		
Dibenzo(a,h)anthracene	µg/kg	<111	<93.8		
Benzo(g,h,i)perylene	µg/kg	<111	<93.8		
Explosives					NA
1,3-Dinitrobenzene	mg/kg	<0.25	<0.0973		
2,4,6-Trinitrotoluene	mg/kg	<0.25	<0.0973		
2,4-Dinitrotoluene	mg/kg	<0.25	<0.0973		
2,6-Dinitrotoluene	mg/kg	<0.25	<0.0973		
2-Amino-4,6-dinitrotoluene	mg/kg	<0.25	<0.0973		
2-Nitrotoluene	mg/kg	<0.25	<0.0973		
3-Nitrotoluene	mg/kg	<0.25	<0.0973		
4-Amino-2,6-dinitrotoluene	mg/kg	<0.25	<0.0973		
4-Nitrotoluene	mg/kg	<0.25	<0.0973		
HMX	mg/kg	<0.25	<0.0973		
Nitrobenzene	mg/kg	<0.25	<0.126		
RDX	mg/kg	<0.25	<0.0973		
1,3,5-Trinitrobenzene	mg/kg	<0.25	<0.243		
Tetryl	mg/kg	<0.25	<0.195		
Nitroglycerine	mg/kg	<0.25	<0.0973		
Nitrocellulose	mg/kg	1.2 B	<1.99		
Nitroguanidine	mg/kg	<0.25	<0.147		
Metals					NA
Mercury, Total	mg/kg	<0.0127	<0.0112		
Arsenic, Total	mg/kg	17.8	10.4		
Lead, Total	mg/kg	12.7	9.64		

Table B-4
Borrow Source Sample Results (Continued)

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	UNITS			UNITS	
Antimony, Total	mg/kg	0.0651 J	<0.0589		
Selenium, Total	mg/kg	<0.127	0.160 J		
Thallium, Total	mg/kg	0.170	0.149		
Aluminum, Total	mg/kg	11400	8730		
Silver, Total	mg/kg	<0.239	<0.218		
Barium, Total	mg/kg	43.1	42.2		
Beryllium, Total	mg/kg	0.520	0.428 J		
Calcium, Total	mg/kg	17500	27100		
Cadmium, Total	mg/kg	0.220 J	0.180 J		
Cobalt, Total	mg/kg	10.7	8.47		
Chromium, Total	mg/kg	14.8	12.8		
Copper, Total	mg/kg	21.6	16.7		
Iron, Total	mg/kg	33500	21300		
Potassium, Total	mg/kg	1910	1100		
Magnesium, Total	mg/kg	6400	12200		
Manganese, Total	mg/kg	304	272		
Sodium, Total	mg/kg	114	68.5		
Nickel, Total	mg/kg	27.2	21.0		
Vanadium, Total	mg/kg	16.4	13.2		
Zinc, Total	mg/kg	65.9	54.33		
Pesticides					NA
4,4'-DDD	µg/kg	<0.415	<0.384		
4,4'-DDE	µg/kg	<0.415	<0.384		
4,4'-DDT	µg/kg	<0.415	<0.384		
Aldrin	µg/kg	<0.415	<0.384		
alpha-BHC	µg/kg	<0.415	<0.384		
alpha Chlordane	µg/kg	<0.415	<0.384		
beta-BHC	µg/kg	<0.415	<0.384		
delta-BHC	µg/kg	<0.415	<0.384		
Dieldrin	µg/kg	<0.415	<0.384		
Endosulfan I	µg/kg	<0.415	<0.384		
Endosulfan II	µg/kg	<0.415	<0.384		
Endosulfan sulfate	µg/kg	<0.415	<0.384		
Endrin	µg/kg	<0.415	<0.384		
Endrin aldehyde	µg/kg	<0.415	<0.384		
Endrin ketone	µg/kg	<0.415	<0.384		
gamma-BHC (Lindane)	µg/kg	<0.415	<0.384		
gamma Chlordane	µg/kg	<0.415	<0.384		
Heptachlor	µg/kg	<0.415	<0.384		
Heptachlor epoxide	µg/kg	<0.415	<0.384		
Methoxychlor	µg/kg	<0.415	<0.384		
Toxaphene	µg/kg	<21.0	<19.4		
Herbicides					NA
2,4-D	µg/kg	<25.3	<23.3		

Table B-4
Borrow Source Sample Results (Continued)

Borrow Source Location:		Route 5 Sand & Gravel			
Sample ID:		Rt 5 Sand&Gravel	RT 5-SG-02	Trip Blank	
Laboratory Report:		L0705315	L0711600	L0711600	
Sample Date:		5/10/07	11/20/07	11/20/07	
ANALYTE	**UNITS**			**UNITS**	
2,4-DB	µg/kg	<25.3	<23.3		
2,4,5-T	µg/kg	<2.53	<2.33		
2,4,5-TP (Silvex)	µg/kg	<1.89	<1.75		
Dalapon	µg/kg	<63.1	<58.3		
Dicamba	µg/kg	<2.53	<2.33		
Dichloroprop	µg/kg	<25.3	<23.3		
Dinoseb	µg/kg	<12.6	<11.7		
MCPA	µg/kg	<2530	<2330		
MCPP		<2530	<2330		
Pentachlorophenol	µg/kg	<2.53	<2.33		
Polychlorinated Biphenyls					NA
Aroclor-1016	µg/kg	<10.2	<9.61		
Aroclor-1221	µg/kg	<10.2	<9.61		
Aroclor-1232	µg/kg	<10.2	<9.61		
Aroclor-1242	µg/kg	<10.2	<9.61		
Aroclor-1248	µg/kg	<10.2	<9.61		
Aroclor-1254	µg/kg	<10.2	<9.61		
Aroclor-1260	µg/kg	<10.2	<9.61		
RCRA Characteristics					NA
Corrosivity pH	Unit	8.13	6.49		
Percent Solids			84.9		

Notes and Qualifiers:

RCRA	Resource Conservation and Recovery Act
NA	not analyzed
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
µg/L	micrograms per liter
<	This result is below the sample detection limit.
B	Estimated result. Result is less than the reporting limit
J	The result was positively identified but is less than the reporting limit.

Table B-5
Stockpiled Soil Multi-Increment Sample Results

Sample ID:		LL1-001	LL1-002	LL3-003	LL3-004	LL1-005	LL3-006	LL4-007
Laboratory		Test America	Test America	Test America	Test America	Test America	Test America	Test America
Laboratory Report:		A7J020173	A7J020173	A7J020173	A7J020173	A7J030108	A7J030108	A7J030108
Sample Date:		10/1/07	10/1/07	10/1/07	10/1/07	10/2/07	10/2/07	10/2/07
Stockpile Designation:		PCB	PCB	PCB	PCB	Non-Haz	Non-Haz	Non-Haz
ANALYTE	**UNITS**							
TCLP Semi-Volatiles								
o-Cresol	mg/L	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
m-Cresol & p-Cresol	mg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,4-Dichlorobenzene	mg/L	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
2,4-Dinitrotoluene	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexachlorobenzene	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexachlorobutadiene	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexachloroethane	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Nitrobenzene	mg/L	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Pentachlorophenol	mg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Pyridine	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2,4,5-Trichlorophenol	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2,4,6-Trichlorophenol	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
TCLP Pesticides								
Endrin	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lindane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Methoxychlor	mg/L	<0.0010	0.000022 J	<0.0010	0.00025 J	<0.0010	<0.0010	<0.0010
Toxaphene	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlordane	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Heptachlor	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Heptachlor Epoxide	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
TCLP Herbicides								
2,4-D	mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2,4,5-TP (Silvex)	mg/L	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TCLP Metals								
Mercury	mg/L	0.00010 BJ	0.00012 BJ	0.00010 BJ	0.00014 BJ	<0.0020	<0.0020	<0.0020
Silver	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	mg/L	<0.50	<0.50	0.0050	<0.50	<0.50	0.0054 B	<0.50

Table B-5
Stockpiled Soil Multi-Incremental Sample Results (Continued)

Sample ID:		LL1-001	LL1-002	LL3-003	LL3-004	LL1-005	LL3-006	LL4-007
Laboratory:		Test America	Test America	Test America	Test America	Test America	Test America	Test America
Laboratory Report:		A7J020173	A7J020173	A7J020173	A7J020173	A7J030108	A7J030108	A7J030108
Sample Date:		10/1/07	10/1/07	10/1/07	10/1/07	10/2/07	10/2/07	10/2/07
Stockpile Designation:		PCB	PCB	PCB	PCB	Non-Haz	Non-Haz	Non-Haz
ANALYTE	UNITS							
Barium	mg/L	0.90 B	1.0 B	0.28 B	0.65 B	0.66 BJ	0.59 BJ	0.69 BJ
Cadmium	mg/L	0.0082 B	0.0072 B	0.0087 B	0.0046 B	0.0074 B	0.0027 B	<0.10
Chromium	mg/L	0.0036 BJ	0.0016 BJ	0.0029 BJ	0.0018 BJ	0.0030 B	0.0090 B	0.0024 B
Lead	mg/L	0.062 B	0.021 B	0.066 B	0.13 B	0.018 B	0.0053 B	0.0023 B
Selenium	mg/L	0.0037 B	0.0057 B	0.0042 B	<0.25	<0.25	<0.25	<0.25
Explosives								
Nitroglycerine	mg/kg	<0.49	<0.50	<0.50	<0.10	<5.0	<0.50	<0.50
1,3,5-Trinitrobenzene	mg/kg	0.022 J	0.034 J	0.27	0.44 J	0.28 J	<0.25	0.041 J
1,3-Dinitrobenzene	mg/kg	<0.24	<0.25	0.060 J	<5.0	<2.5	<0.25	<0.25
2,4,6-Trinitrotoluene	mg/kg	1.3	4.4	2.7	240	65	0.14 J	0.042 J
2,4-Dinitrotoluene	mg/kg	0.025 J	<0.25	0.37 J	<5.0	<2.5	<0.25	<0.25
2,6-Dinitrotoluene	mg/kg	<0.24	<0.25	0.13 J	<5.0	<2.5	<0.25	<0.25
2-Amino-4,6-dinitrotoluene	mg/kg	0.38	0.28	2.4	3.1 J	1.4 J	<0.25	<0.25
2-Nitrotoluene	mg/kg	<0.24	<0.25	<0.25	<5.0	<2.5	<0.25	<0.25
3-Nitrotoluene	mg/kg	<0.24	<0.25	<0.25	<5.0	<2.5	<0.25	<0.25
4-Nitrotoluene	mg/kg	<0.24	<0.25	<0.25	<5.0	<2.5	<0.25	<0.25
4-Amino-2,6-dinitrotoluene	mg/kg	0.51	0.41	1.8	4.9 J	1.9 J	0.10 J	<0.25
HMX	mg/kg	<0.24	<0.25	0.037 J	<5.0	<2.5	<0.25	0.12 J
Nitrobenzene	mg/kg	<0.24	<0.25	0.29	<5.0	<2.5	<0.25	<0.25
RDX	mg/kg	0.047 J	<0.25	<0.25	<5.0	<2.5	<0.25	0.40
Tetryl	mg/kg	<0.24	<0.25	<0.25	<5.0	<2.5	<0.25	<0.25
PCBs								
Aroclor-1016	µg/kg	1800	180	70	3700	270	56	54
Aroclor-1221	µg/kg	1800	180	70	3700	270	56	54
Aroclor-1232	µg/kg	1800	180	70	3700	270	56	54
Aroclor-1242	µg/kg	1800	180	70	3700	270	56	54
Aroclor-1248	µg/kg	1800	180	70	3700	270	56	54
Aroclor-1254	µg/kg	8900	2500	1300	11000	1200	45 J	54
Aroclor-1260	µg/kg	1800	180	70	3700	270	56	81

Table B-5
Stockpiled Soil Multi-Incremental Sample Results (Continued)

ANALYTE	UNITS	Sample ID: LL1-001	LL1-002	LL3-003	LL3-004	LL1-005	LL3-006	LL4-007
		Laboratory: Test America	Test America	Test America	Test America	Test America	Test America	Test America
		Laboratory Report: A7J020173	A7J020173	A7J020173	A7J020173	A7J030108	A7J030108	A7J030108
		Sample Date: 10/1/07	10/1/07	10/1/07	10/1/07	10/2/07	10/2/07	10/2/07
		Stockpile Designation: PCB	PCB	PCB	PCB	Non-Haz	Non-Haz	Non-Haz
RCRA Characteristics								
Corrosivity pH	Units	7.8	8.2	7.9	7.2	6.1	6.5	7.7
Ignitability	°F	>180	>180	>180	>180	>180	>180	>180
Reactive Sulfide	mg/kg	<550	<550	<530	<560	<540	<560	<540

Notes and Qualifiers:

TCLP Toxicity Characteristic Leaching Procedures (USEPA Method 1311)
RCRA Resource Conservation and Recovery Act
µg/L micrograms per liter
µg/kg micrograms per kilogram
mg/L milligrams per liter
mg/kg milligrams per kilogram
°F degrees Fahrenheit
< This result was not detected at or above the reporting limit.
J This is an estimated result that is less than the reporting limit except for metals. For metals, this a qualifier for blank contamination and the associated method blank contains the target analyte at a reportable level.
B For metals only, this is an estimated result that is less than the reporting limit.

Table B-5
Stockpiled Soil Multi-Incremental Sample Results (Continued)

	Sample ID:	LL2-008	LL2-009	LL2-010	LL4-011	LL2-012	LL2-013
	Laboratory:	Kemron	Kemron	Kemron	Kemron	Kemron	Kemron
	Laboratory Report:	L0710454	L0710454	L0710454	L0711045	L0711045	L0711045
	Sample Date:	10/12/07	10/12/07	10/12/07	11/01/07	11/01/07	11/01/07
	Stockpile Designation:	Non-Haz	PCB	Non-Haz	Non-Haz	Non-Haz	Non-Haz
ANALYTE	UNITS						
TCLP Semi-Volatiles							
o-Cresol	µg/L	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	µg/L	<25	<25	<25	<25	<25	<25
2,4-Dinitrotoluene	µg/L	<25	<25	<25	<25	<25	<25
Hexachlorobenzene	µg/L	<25	<25	<25	<25	<25	<25
Hexachlorobutadiene	µg/L	<25	<25	<25	<25	<25	<25
Hexachloroethane	µg/L	<25	<25	<25	<25	<25	<25
Nitrobenzene	µg/L	<25	<25	<25	<25	<25	<25
Pentachlorophenol	µg/L	<25	<25	<25	<25	<25	<25
Pyridine	µg/L	<250	<250	<250	<250	<250	<250
2,4,5-Trichlorophenol	µg/L	<25	<25	<25	<25	<25	<25
2,4,6-Trichlorophenol	µg/L	<25	<25	<25	<25	<25	<25
TCLP Pesticides							
Endrin	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
alpha Chlordane	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
gamma Chlordane	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TCLP Herbicides							
2,4-D	µg/L	<10	<10	<10	<10	<10	<10
2,4,5-TP (Silvex)	µg/L	<1	<1	<1	<1	<1	<1
TCLP Metals							
Mercury	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table B-5
Stockpiled Soil Multi-Incremental Sample Results (Continued)

Sample ID:		LL2-008	LL2-009	LL2-010	LL4-011	LL2-012	LL2-013
Laboratory:		Kemron	Kemron	Kemron	Kemron	Kemron	Kemron
Laboratory Report:		L0710454	L0710454	L0710454	L0711045	L0711045	L0711045
Sample Date:		10/12/07	10/12/07	10/12/07	11/01/07	11/01/07	11/01/07
Stockpile Designation:		Non-Haz	PCB	Non-Haz	Non-Haz	Non-Haz	Non-Haz
ANALYTE	**UNITS**						
Barium	mg/L	0.720 J	0.437 J	0.448 J	0.417 J	0.502 J	0.179 J
Cadmium	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Chromium	mg/L	<0.025	<0.025	<0.025	<0.025	0.0719 J	<0.025
Lead	mg/L	<0.1	<0.1	<0.1	<0.1	0.149 J	<0.1
Selenium	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Explosives							
1,3,5-Trinitrobenzene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	0.153 J
1,3-Dinitrobenzene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
2,4,6-Trinitrotoluene	mg/kg	<0.0993	<0.0983	8.32	<0.0997	<0.0986	2.56
2,4-Dinitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
2,6-Dinitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
2-Amino-4,6-dinitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	0.340
2-Nitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
3-Nitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
4-Nitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
4-Amino-2,6-dinitrotoluene	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	0.259
HMX	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
Nitrobenzene	mg/kg	<0.129	<0.128	<0.130	<0.130	<0.128	<0.130
RDX	mg/kg	<0.0993	<0.0983	<0.0999	<0.0997	<0.0986	<0.0998
Tetryl	mg/kg	<0.199	<0.197	<0.200	<0.199	<0197	<0.200
Polychlorinated Biphenyls							
Aroclor-1016	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67
Aroclor-1221	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67
Aroclor-1232	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67
Aroclor-1242	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67
Aroclor-1248	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67
Aroclor-1254	µg/kg	498	968	638	86.7	1590	132
Aroclor-1260	µg/kg	<8.99	<46.0	<9.58	<8.76	<8.73	<8.67

Table B-5
Stockpiled Soil Multi-Incremental Sample Results (Continued)

	Sample ID:	LL2-008	LL2-009	LL2-010	LL4-011	LL2-012	LL2-013
	Laboratory:	Kemron	Kemron	Kemron	Kemron	Kemron	Kemron
	Laboratory Report:	L0710454	L0710454	L0710454	L0711045	L0711045	L0711045
	Sample Date:	10/12/07	10/12/07	10/12/07	11/01/07	11/01/07	11/01/07
	Stockpile Designation:	Non-Haz	PCB	Non-Haz	Non-Haz	Non-Haz	Non-Haz
ANALYTE	**UNITS**						
RCRA Characteristics							
Corrosivity pH	Units	8.27	7.49	5.56	8.73	8.50	9.00
Ignitability	°C	>80	>79	>85	>72	>70	>73
Reactive Sulfide	mg/kg	<50	<50	<50	<50	<50	<50
Reactive Cyanide	mg/kg	<24.9	<24.9	<24.9	<4.90	<4.98	<4.95

Notes and Qualifiers:

TCLP	Toxicity Characteristic Leaching Procedures (USEPA Method 1311)
RCRA	Resource Conservation and Recovery Act
µg/L	micrograms per liter
µg/kg	micrograms per kilogram
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
°C	degrees Celcius
<	This result was not detected at or above the sample detection limit.
J	The analyte was positively identified but was below the reporting limit.

Table B-6
Waste Purged Groundwater Sample Results

ANALYTE	UNITS	Sample ID: MW Drum Water Laboratory Report: L0708092 Sample Date: 08/02/07	Trip Blank L0708092 8/02/07
Volatiles			
Acetone	µg/L	4.32 J	<2.50
Benzene	µg/L	<0.125	<0.125
Bromodichloromethane	µg/L	<0.250	<0.250
Bromoform	µg/L	<0.500	<0.500
Bromomethane	µg/L	<0.500	<0.500
2-Butanone	µg/L	<2.50	<2.50
Carbon disulfide	µg/L	<0.500	<0.500
Carbon tetrachloride	µg/L	<0.250	<0.250
Chlorobenzene	µg/L	<0.125	<0.125
Chloroethane	µg/L	<0.500	<0.500
Chloroform	µg/L	<0.125	<0.125
Chloromethane	µg/L	0.300 J	0.560 J
Cyclohexane	µg/L	<0.250	<0.250
Dibromochloromethane	µg/L	<0.250	<0.250
1,2-Dibromo-3-chloropropane	µg/L	<1.00	<1.00
1,2-Dibromoethane	µg/L	<0.250	<0.250
1,2-Dichlorobenzene	µg/L	<0.125	<0.125
1,3-Dichlorobenzene	µg/L	<0.250	<0.250
1,4-Dichlorobenzene	µg/L	<0.125	<0.125
Dichlorodifluoromethane	µg/L	<0.250	<0.250
1,1-Dichloroethane	µg/L	<0.125	<0.125
1,2-Dichloroethane	µg/L	<0.250	<0.250
1,1-Dichloroethene	µg/L	<0.500	<0.500
cis-1,2-Dichloroethene	µg/L	<0.250	<0.250
trans-1,2-Dichloroethene	µg/L	<0.250	<0.250
1,2-Dichloropropane	µg/L	<0.200	<0.200
cis-1,3-Dichloropropene	µg/L	<0.250	<0.250
trans-1,3-Dichloropropene	µg/L	<0.500	<0.500
Ethylbenzene	µg/L	1.35 J	<0.250
2-Hexanone	µg/L	<2.50	<2.50
Isopropylbenzene	µg/L	<0.250	<0.250
4-Methyl-2-pentanone	µg/L	<2.50	<2.50
Methyl acetate	µg/L	<0.250	<0.250
Methyl tert butyl ether	µg/L	<0.500	<0.500
Methylcyclohexane	µg/L	<0.250	<0.250
Methylene chloride	µg/L	<0.250	<0.250
Styrene	µg/L	<0.125	<0.125
1,1,2,2-Tetrachloroethane	µg/L	<0.125	<0.125
Tetrachloroethane	µg/L	<0.250	<0.250
Toluene	µg/L	<0.250	<0.250
1,2,4-Trichlorobenzene	µg/L	<0.200	<0.200
1,1,1-Trichloroethane	µg/L	<0.250	<0.250

Table B-6
Waste Purged Groundwater Sample Results (Continued)

ANALYTE	UNITS	Sample ID: MW Drum Water Laboratory Report: L0708092 Sample Date: 08/02/07	Trip Blank L0708092 8/02/07
1,1,2-Trichloroethane	µg/L	<0.250	<0.250
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	<0.250	<0.250
Trichloroethene	µg/L	<0.250	<0.250
Trichlorofluoromethane	µg/L	<0.250	<0.250
Vinyl chloride	µg/L	<0.250	<0.250
Total Xylenes	µg/L	6.74	<0.500
Semi-Volatiles			NA
1,1-Biphenyl	µg/L	<3.25	
Phenol	µg/L	<3.25	
bis (2-Chloroethyl) ether	µg/L	<3.25	
2-Chlorophenol	µg/L	<3.25	
2-Methylphenol	µg/L	<3.25	
3-, 4-Methylphenol	µg/L	<3.25	
bis (2-chloroisopropyl) ether	µg/L	<3.25	
N-Nitroso-di-n-propylamine	µg/L	<3.25	
Hexachloroethane	µg/L	<3.25	
Nitrobenzene	µg/L	<3.25	
Isophorone	µg/L	<3.25	
2-Nitrophenol	µg/L	<3.25	
2,4-Dimethylphenol	µg/L	<3.25	
bis (2-Chloroethoxy) methane	µg/L	<3.25	
2,4-Dichlorophenol	µg/L	<3.25	
Naphthalene	µg/L	<3.25	
4-Chloroaniline	µg/L	<3.25	
Hexachlorobutadiene	µg/L	<3.25	
4-Chloro-3-methylphenol	µg/L	<3.25	
2-Methylnaphthalene	µg/L	<3.25	
Hexachlorocyclopentadiene	µg/L	<3.25	
2,4,6-Trichlorophenol	µg/L	<3.25	
2,4,5-Trichlorophenol	µg/L	<3.25	
2-Chloronaphthalene	µg/L	<3.25	
2-Nitroaniline	µg/L	<16.2	
Dimethylphthalate	µg/L	<3.25	
Acenaphthylene	µg/L	<3.25	
2,6-Dintrotoluene	µg/L	<3.25	
3-Nitroaniline	µg/L	<16.2	
Acenaphthene	µg/L	<3.25	
Acetaphenone	µg/L	<3.25	
2,4-Dinitrophenol	µg/L	<16.2	
4-Nitrophenol	µg/L	<16.2	
Dibenzofuran	µg/L	<3.25	
2,4-Dinitrotoluene	µg/L	<3.25	
Diethylphthalate	µg/L	<3.25	
4-Chlorophenyl-phenyl ether	µg/L	<3.25	

Table B-6
Waste Purged Groundwater Sample Results (Continued)

ANALYTE	UNITS	Sample ID: MW Drum Water Laboratory Report: L0708092 Sample Date: 08/02/07	Trip Blank L0708092 8/02/07
Fluorene	µg/L	<3.25	
4-Nitroaniline	µg/L	<16.2	
4,6-Dinitro-2-methylphenol	µg/L	<16.2	
N-Nitrosodiphenylamine	µg/L	<3.25	
4-Bromophenyl-phenylether	µg/L	<3.25	
Hexachlorobenzene	µg/L	<3.25	
Pentachlorophenol	µg/L	<3.25	
Phenanthrene	µg/L	<3.25	
Anthracene	µg/L	<3.25	
Atrazine	µg/L	<13.0	
Di-N-Butylphthalate	µg/L	<3.25	
Fluoranthene	µg/L	<3.25	
Pyrene	µg/L	<3.25	
Butylbenzylphthalate	µg/L	<3.25	
Caprolactam	µg/L	<3.25	
Carbazole	µg/L	<3.25	
3,3'-Dichlorobenzidine	µg/L	<3.25	
Benzo(a)anthracene	µg/L	<3.25	
Chrysene	µg/L	<3.25	
bis (2-Ethylhexyl) phthalate	µg/L	<3.25	
Di-n-octylphthalate	µg/L	<3.25	
Benzaldhyde	µg/L	<13.0	
Benzo(b)fluoranthene	µg/L	<3.25	
Benzo(k)fluoranthene	µg/L	<3.25	
Benzo(a)pyrene	µg/L	<3.25	
Indeno(1,2,3-cd)pyrene	µg/L	<3.25	
Dibenzo(a,h)anthracene	µg/L	<3.25	
Benzo(g,h,i)perylene	µg/L	<3.25	
Explosives			NA
1,3-Dinitrobenzene	mg/L	<0.255	
2,4,6-Trinitrotoluene	mg/L	<0.255	
2,4-Dinitrotoluene	mg/L	<0.255	
2,6-Dinitrotoluene	mg/L	<0.255	
2-Amino-4,6-dinitrotoluene	mg/L	<0.255	
2-Nitrotoluene	mg/L	<0.255	
3-Nitrotoluene	mg/L	<0.255	
4-Amino-2,6-dinitrotoluene	mg/L	<0.255	
4-Nitrotoluene	mg/L	<0.255	
HMX	mg/L	<0.255	
Nitrobenzene	mg/L	<0.255	
RDX	mg/L	<0.255	
1,3,5-Trinitrobenzene	mg/L	<0.255	
Tetryl	mg/L	<0.255	
Nitroglycerine	mg/L	<0.255	

Table B-6
Waste Purged Groundwater Sample Results (Continued)

ANALYTE	UNITS	Sample ID: MW Drum Water Laboratory Report: L0708092 Sample Date: 08/02/07	Trip Blank L0708092 8/02/07
Nitrocellulose	mg/L	<0.250	
Nitroguanidine	mg/L	<25.0	
Metals			NA
Mercury, Dissolved	mg/L	<0.000100	
Arsenic, Dissolved	mg/L	<0.000250	
Lead, Dissolved	mg/L	<0.000250	
Antimony, Dissolved	mg/L	0.000322 J	
Selenium, Dissolved	mg/L	<0.000500	
Thallium, Dissolved	mg/L	<0.0000500	
Aluminum, Dissolved	mg/L	<0.0500	
Silver, Dissolved	mg/L	<0.0500	
Barium, Dissolved	mg/L	0.0261	
Beryllium, Dissolved	mg/L	<0.000500	
Calcium, Dissolved	mg/L	42.8	
Cadmium, Dissolved	mg/L	<0.00250	
Cobalt, Dissolved	mg/L	<0.00250	
Chromium, Dissolved	mg/L	<0.00250	
Copper, Dissolved	mg/L	<0.00500	
Iron, Dissolved	mg/L	1.74	
Potassium, Dissolved	mg/L	1.74	
Magnesium, Dissolved	mg/L	18.2	
Manganese, Dissolved	mg/L	0.871	
Sodium, Dissolved	mg/L	9.18	
Nickel, Dissolved	mg/L	<0.00500	
Vanadium, Dissolved	mg/L	<0.00500	
Zinc, Dissolved	mg/L	0.0180 J	
Pesticides			NA
4,4'-DDD	µg/L	<0.0538	
4,4'-DDE	µg/L	<0.0538	
4,4'-DDT	µg/L	<0.0538	
Aldrin	µg/L	<0.0538	
alpha-BHC	µg/L	<0.0538	
alpha Chlordane	µg/L	<0.0538	
beta-BHC	µg/L	<0.0538	
delta-BHC	µg/L	<0.0538	
Dieldrin	µg/L	<0.0538	
Endosulfan I	µg/L	<0.0538	
Endosulfan II	µg/L	<0.0538	
Endosulfan sulfate	µg/L	<0.0538	
Endrin	µg/L	<0.0538	
Endrin aldehyde	µg/L	<0.0538	
Endrin ketone	µg/L	<0.0538	
gamma-BHC (Lindane)	µg/L	<0.0538	
gamma Chlordane	µg/L	<0.0538	

Table B-6
Waste Purged Groundwater Sample Results (Continued)

ANALYTE	UNITS	Sample ID: MW Drum Water Laboratory Report: L0708092 Sample Date: 08/02/07	Trip Blank L0708092 8/02/07
Heptachlor	µg/L	<0.0538	
Heptachlor epoxide	µg/L	<0.0538	
Methoxychlor	µg/L	<0.0538	
Toxaphene	µg/L	<1.08	
Polychlorinated Biphenyls			NA
Aroclor-1016	µg/L	<0.269	
Aroclor-1221	µg/L	<0.269	
Aroclor-1232	µg/L	<0.269	
Aroclor-1242	µg/L	<0.269	
Aroclor-1248	µg/L	<0.269	
Aroclor-1254	µg/L	<0.269	
Aroclor-1260	µg/L	<0.269	

:

Notes and Qualifiers:

µg/L micrograms per liter
mg/L milligrams per liter
< This result was not detected at or above the sample detection limit.
J The result was positively identified but is less than the reporting limit.
NA not analyzed

Table B-7
Waste Decontamination Liquids Sample Results

ANALYTE	UNITS	Sample ID: Decon Water Laboratory Report: L08010047 Sample Date: 01/02/08
Volatiles		
Acetone	µg/L	4.25 J
Benzene	µg/L	<0.125
Bromodichloromethane	µg/L	10.2
Bromoform	µg/L	<0.500
Bromomethane	µg/L	<0.500
2-Butanone	µg/L	<2.50
Carbon disulfide	µg/L	<0.500
Carbon tetrachloride	µg/L	<0.250
Chlorobenzene	µg/L	<0.125
Chloroethane	µg/L	<0.250
Chloroform	µg/L	25.0
Chloromethane	µg/L	<0.500
Cyclohexane	µg/L	<0.250
Dibromochloromethane	µg/L	3.78
1,2-Dibromo-3-chloropropane	µg/L	<1.00
1,2-Dibromoethane	µg/L	<0.250
1,2-Dichlorobenzene	µg/L	<0.125
1,3-Dichlorobenzene	µg/L	<0.250
1,4-Dichlorobenzene	µg/L	<0.125
Dichlorodifluoromethane	µg/L	<0.250
1,1-Dichloroethane	µg/L	<0.125
1,2-Dichloroethane	µg/L	<0.250
1,1-Dichloroethene	µg/L	<0.500
cis-1,2-Dichloroethene	µg/L	<0.250
trans-1,2-Dichloroethene	µg/L	<0.250
1,2-Dichloropropane	µg/L	<0.200
cis-1,3-Dichloropropene	µg/L	<0.250
trans-1,3-Dichloropropene	µg/L	<0.500
Ethylbenzene	µg/L	<0.250
2-Hexanone	µg/L	<2.50
Isopropylbenzene	µg/L	<0.250
4-Methyl-2-pentanone	µg/L	<2.50
Methyl acetate	µg/L	<0.250
Methyl tert butyl ether	µg/L	<0.500
Methylcyclohexane	µg/L	<0.250
Methylene chloride	µg/L	<0.250
Styrene	µg/L	<0.125
1,1,2,2-Tetrachloroethane	µg/L	<0.125
Tetrachloroethane	µg/L	<0.250
Toluene	µg/L	0.350 J
1,2,4-Trichlorobenzene	µg/L	<0.200
1,1,1-Trichloroethane	µg/L	<0.250

Table B-7
Waste Decontamination Liquids Sample Results (Continued)

ANALYTE	UNITS	Sample ID: Decon Water Laboratory Report: L08010047 Sample Date: 01/02/08
1,1,2-Trichloroethane	µg/L	<0.250
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	<0.250
Trichloroethene	µg/L	<0.250
Trichlorofluoromethane	µg/L	<0.250
Vinyl chloride	µg/L	<0.250
Total Xylenes	µg/L	<0.500
Semi-Volatiles		
1,1-Biphenyl	µg/L	<2.50
Phenol	µg/L	<2.50
bis (2-Chloroethyl) ether	µg/L	<2.50
2-Chlorophenol	µg/L	<2.50
2-Methylphenol	µg/L	<2.50
3-, 4-Methylphenol	µg/L	<2.50
bis (2-chloroisopropyl) ether	µg/L	<2.50
N-Nitroso-di-n-propylamine	µg/L	<2.50
Hexachloroethane	µg/L	<2.50
Nitrobenzene	µg/L	<2.50
Isophorone	µg/L	<2.50
2-Nitrophenol	µg/L	<2.50
2,4-Dimethylphenol	µg/L	<2.50
bis (2-Chloroethoxy) methane	µg/L	<2.50
2,4-Dichlorophenol	µg/L	<2.50
Naphthalene	µg/L	<2.50
4-Chloroaniline	µg/L	<2.50
Hexachlorobutadiene	µg/L	<2.50
4-Chloro-3-methylphenol	µg/L	<2.50
2-Methylnaphthalene	µg/L	<2.50
Hexachlorocyclopentadiene	µg/L	<2.50
2,4,6-Trichlorophenol	µg/L	<2.50
2,4,5-Trichlorophenol	µg/L	<2.50
2-Chloronaphthalene	µg/L	<2.50
2-Nitroaniline	µg/L	<12.5
Dimethylphthalate	µg/L	<2.50
Acenaphthylene	µg/L	<2.50
2,6-Dintrotoluene	µg/L	<2.50
3-Nitroaniline	µg/L	<12.5
Acenaphthene	µg/L	<2.50
Acetaphenone	µg/L	<2.50
2,4-Dinitrophenol	µg/L	<12.5
4-Nitrophenol	µg/L	<12.5
Dibenzofuran	µg/L	<2.50
2,4-Dinitrotoluene	µg/L	<2.50
Diethylphthalate	µg/L	<2.50
4-Chlorophenyl-phenyl ether	µg/L	<2.50

Table B-7
Waste Decontamination Liquids Sample Results (Continued)

ANALYTE	UNITS	Sample ID: Decon Water Laboratory Report: L08010047 Sample Date: 01/02/08
Fluorene	µg/L	<2.50
4-Nitroaniline	µg/L	<12.5
4,6-Dinitro-2-methylphenol	µg/L	<12.5
N-Nitrosodiphenylamine	µg/L	<2.50
4-Bromophenyl-phenylether	µg/L	<2.50
Hexachlorobenzene	µg/L	<2.50
Pentachlorophenol	µg/L	<2.50
Phenanthrene	µg/L	<2.50
Anthracene	µg/L	<2.50
Atrazine	µg/L	<10.0
Di-N-Butylphthalate	µg/L	<2.50
Fluoranthene	µg/L	<2.50
Pyrene	µg/L	<2.50
Butylbenzylphthalate	µg/L	<2.50
Caprolactam	µg/L	<2.50
Carbazole	µg/L	<2.50
3,3'-Dichlorobenzidine	µg/L	<2.50
Benzo(a)anthracene	µg/L	<2.50
Chrysene	µg/L	<2.50
bis (2-Ethylhexyl) phthalate	µg/L	<2.50
Di-n-octylphthalate	µg/L	<2.50
Benzaldhyde	µg/L	<10.0
Benzo(b)fluoranthene	µg/L	<2.50
Benzo(k)fluoranthene	µg/L	<2.50
Benzo(a)pyrene	µg/L	<2.50
Indeno(1,2,3-cd)pyrene	µg/L	<2.50
Dibenzo(a,h)anthracene	µg/L	<2.50
Benzo(g,h,i)perylene	µg/L	<2.50
Diesel/Gasoline Range Organics		
Diesel Range	µg/L	<272
Gasoline Range	µg/L	<45.0
Hexane Extractable Materials	mg/L	<2.50
Explosives		
1,3-Dinitrobenzene	mg/L	<0.255
2,4,6-Trinitrotoluene	mg/L	<0.255
2,4-Dinitrotoluene	mg/L	<0.255
2,6-Dinitrotoluene	mg/L	<0.255
2-Amino-4,6-dinitrotoluene	mg/L	<0.255
2-Nitrotoluene	mg/L	<0.255
3-Nitrotoluene	mg/L	<0.255
4-Amino-2,6-dinitrotoluene	mg/L	<0.255
4-Nitrotoluene	mg/L	<0.255
HMX	mg/L	<0.255
Nitrobenzene	mg/L	<0.255

Table B-7
Waste Decontamination Liquids Sample Results (Continued)

ANALYTE	UNITS	Sample ID: Decon Water Laboratory Report: L08010047 Sample Date: 01/02/08
RDX	mg/L	<0.255
1,3,5-Trinitrobenzene	mg/L	<0.255
Tetryl	mg/L	<0.255
Nitroglycerine	mg/L	<0.255
Metals		
Mercury, Total	mg/L	<0.000100
Arsenic, Total	mg/L	<0.00500
Lead, Total	mg/L	<0.00500
Selenium, Total	mg/L	<0.00500
Silver, Total	mg/L	<0.00500
Barium, Total	mg/L	0.0194
Cadmium, Total	mg/L	<0.00250
Chromium, Total	mg/L	<0.00250
Polychlorinated Biphenyls		
Aroclor-1016	µg/L	<0.250
Aroclor-1221	µg/L	<0.250
Aroclor-1232	µg/L	<0.250
Aroclor-1242	µg/L	<0.250
Aroclor-1248	µg/L	<0.250
Aroclor-1254	µg/L	<0.250
Aroclor-1260	µg/L	<0.250

Notes and Qualifiers:

µg/L micrograms per liter
mg/L milligrams per liter
< This result was not detected at or above the sample detection limit.
J The result was positively identified but is less than the reporting limit.

Table B-8
LL2ss-066 Excavation Discharged Storm Water Sample Results

ANALYTE	UNITS	Station ID: LL2ss-066-cs Sample ID: LL2sw-066 Laboratory Report: L0711258 Sample Date: 11/08/07
Semi-Volatiles		
1,1-Biphenyl	µg/L	<2.55
Phenol	µg/L	<2.55
bis (2-Chloroethyl) ether	µg/L	<2.55
2-Chlorophenol	µg/L	<2.55
2-Methylphenol	µg/L	<2.55
3-, 4-Methylphenol	µg/L	<2.55
bis (2-chloroisopropyl) ether	µg/L	<2.55
N-Nitroso-di-n-propylamine	µg/L	<2.55
Hexachloroethane	µg/L	<2.55
Nitrobenzene	µg/L	<2.55
Isophorone	µg/L	<2.55
2-Nitrophenol	µg/L	<2.55
2,4-Dimethylphenol	µg/L	<2.55
bis (2-Chloroethoxy) methane	µg/L	<2.55
2,4-Dichlorophenol	µg/L	<2.55
Naphthalene	µg/L	<2.55
4-Chloroaniline	µg/L	<2.55
Hexachlorobutadiene	µg/L	<2.55
4-Chloro-3-methylphenol	µg/L	<2.55
2-Methylnaphthalene	µg/L	<2.55
Hexachlorocyclopentadiene	µg/L	<2.55
2,4,6-Trichlorophenol	µg/L	<2.55
2,4,5-Trichlorophenol	µg/L	<2.55
2-Chloronaphthalene	µg/L	<2.55
2-Nitroaniline	µg/L	<2.55
Dimethylphthalate	µg/L	<2.55
Acenaphthylene	µg/L	<2.55
2,6-Dintrotoluene	µg/L	<2.55
3-Nitroaniline	µg/L	<12.8
Acenaphthene	µg/L	<2.55
Acetaphenone	µg/L	<2.55
2,4-Dinitrophenol	µg/L	<12.8
4-Nitrophenol	µg/L	<12.8
Dibenzofuran	µg/L	<2.55
2,4-Dinitrotoluene	µg/L	<2.55
Diethylphthalate	µg/L	<2.55
4-Chlorophenyl-phenyl ether	µg/L	<2.55
Fluorene	µg/L	<2.55
4-Nitroaniline	µg/L	<12.8
4,6-Dinitro-2-methylphenol	µg/L	<12.8
N-Nitrosodiphenylamine	µg/L	<2.55
4-Bromophenyl-phenylether	µg/L	<2.55
Hexachlorobenzene	µg/L	<2.55
Pentachlorophenol	µg/L	<2.55

Table B-8
LL2ss-066 Excavation Discharged Storm Water Sample Results (Continued)

ANALYTE	UNITS	Sample ID: LL-2SS066 Laboratory Report: L0711258 Sample Date: 11/08/07
Phenanthrene	µg/L	<2.55
Anthracene	µg/L	<2.55
Atrazine	µg/L	<10.2
Di-N-Butylphthalate	µg/L	<2.55
Fluoranthene	µg/L	<2.55
Pyrene	µg/L	<2.55
Butylbenzylphthalate	µg/L	<2.55
Caprolactam	µg/L	<2.55
Carbazole	µg/L	<2.55
3,3'-Dichlorobenzidine	µg/L	<2.55
Benzo(a)anthracene	µg/L	<2.55
Chrysene	µg/L	<2.55
bis (2-Ethylhexyl) phthalate	µg/L	3.15 J
Di-n-octylphthalate	µg/L	<2.55
Benzaldhyde	µg/L	<10.2
Benzo(b)fluoranthene	µg/L	<2.55
Benzo(k)fluoranthene	µg/L	<2.55
Benzo(a)pyrene	µg/L	<2.55
Indeno(1,2,3-cd)pyrene	µg/L	<2.55
Dibenzo(a,h)anthracene	µg/L	<2.55
Benzo(g,h,i)perylene	µg/L	<2.55
Explosives		
1,3-Dinitrobenzene	mg/L	<0.258
2,4,6-Trinitrotoluene	mg/L	<0.258
2,4-Dinitrotoluene	mg/L	<0.258
2,6-Dinitrotoluene	mg/L	<0.258
2-Amino-4,6-dinitrotoluene	mg/L	<0.258
2-Nitrotoluene	mg/L	<0.258
3-Nitrotoluene	mg/L	<0.258
4-Amino-2,6-dinitrotoluene	mg/L	<0.258
4-Nitrotoluene	mg/L	<0.258
HMX	mg/L	<0.258
Nitrobenzene	mg/L	<0.258
RDX	mg/L	<0.258
1,3,5-Trinitrobenzene	mg/L	<0.258
Tetryl	mg/L	<0.258
Nitroglycerine	mg/L	<0.258
Metals		
Mercury, Total	mg/L	<0.000100
Arsenic, Total	mg/L	0.0260
Lead, Total	mg/L	0.00736
Antimony, Total	mg/L	0.00273

Table B-8
LL2ss-066 Excavation Discharged Storm Water Sample Results (Continued)

ANALYTE	UNITS	Sample ID: LL-2SS066 Laboratory Report: L0711258 Sample Date: 11/08/07
Selenium, Total	mg/L	0.000823 J
Thallium, Total	mg/L	0.0000658 J
Aluminum, Total	mg/L	1.62
Silver, Total	mg/L	<0.00500
Barium, Total	mg/L	0.0384
Beryllium, Total	mg/L	<0.000500
Calcium, Total	mg/L	30.4
Cadmium, Total	mg/L	<0.00250
Cobalt, Total	mg/L	<0.00500
Chromium, Total	mg/L	0.00510 J
Copper, Total	mg/L	0.00774 J
Iron, Total	mg/L	1.24
Potassium, Total	mg/L	1.53
Magnesium, Total	mg/L	3.33
Manganese, Total	mg/L	0.0866
Sodium, Total	mg/L	1.93
Nickel, Total	mg/L	<0.00500
Vanadium, Total	mg/L	<0.00500
Zinc, Total	mg/L	0.0107 J

Notes and Qualifiers:

µg/L micrograms per liter
mg/L milligrams per liter
sw surface water
< This result was not detected at or above the sample detection limit.
J The result was positively identified but is less than the reporting limit.