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1.0 INTRODUCTION

This report documents the results of the Atlas Scrap Yard (ASY) (AOC-50) sampling effort, which was completed during the activities conducted to characterize the 14 Ravenna Army Ammunition Plant (RVAAP) Areas of Concern (AOCs). This document summarizes the results of the field activities conducted from October 2004 to May 2005.

1.1 PURPOSE AND SCOPE

Characterization activities were conducted at ASY to collect sufficient data for all applicable media to allow efficient planning and execution of future environmental actions.

The characterization effort for the ASY was undertaken to accomplish the following:

- Collect characterization data using multi-increment (MI) sampling to provide data for future risk assessments that may be conducted;
- Develop and/or update the Conceptual Site Model to identify the key elements that should be considered in future actions;
- Assess AOC-specific physical characteristics;
- Assess potential sources of contamination;
- Allow initial assessment of the nature and lateral extent of soil, sediment, surface and groundwater contamination (the depth of contamination was not evaluated for this characterization effort); and
- Conduct a preliminary human health and ecological screening.

The investigation approach to the ASY involved a combination of field and laboratory activities to characterize the site. Field investigation techniques included surface soil (0-1 ft) samples (multi-increment (MI) and discrete), soil boring and sampling, surface water, monitoring well installation and development, groundwater sampling, sample and monitoring well location survey, and aquifer testing. The rationale for the AOC-specific sampling plan was biased based on historical information including past usage, past investigations, ecological settings, climatic conditions, and geological and hydrologic characteristics. The field program was conducted in general accordance with the revised (USACE, 2001a) and the Final Sampling and Analysis Plan Addendum FSAP for the characterization of 14 RVAAP AOCs (MKM, 2004).

1.2 BACKGROUND INFORMATION

This section briefly describes ASY and lists an evaluation that was previously conducted for the AOC.

1.2.1 AOC Description and History

ASY is a 60.7 ha (150 acre) AOC located southwest of the intersection of Newton Falls Road and Paris-Windham Road. ASY was a construction camp built in 1940 to house workers and their families during the construction of the plant. After World War II, the facilities were demolished. Since that time, Atlas has served as a storage area for non-explosive scrap materials. Currently, the area is covered by thick grass and

is littered with miscellaneous non-explosive scraps, pipes, railroad ballast, railroad ties, concrete rubble and chipped ammunition boxes. Remnants of an unimproved road can be seen. Figure 1-2, Volume I shows the location of ASY within the RVAAP.

1.2.2 Previous Investigation

The following evaluation has been conducted at ASY:

1.2.2.1 Relative Risk Site Evaluation for Newly Added Sites at the Ravenna Army Ammunition Plant (USACHPPM 1998).

ASY was scored with a moderate (6.43) CHF for groundwater and a potential migration pathway factor and receptor pathway factor. The AOC also was scored with a moderate (14.9) CHF for surface soil with a potential migration pathway factor and receptor pathway factor. The final RRSE score for the AOC was "Medium".

1.2.3 Regulatory Authorities

Volume I, Section 1.2.3 identifies the regulatory authorities that oversee remedial activities for these AOCs.

1.2.4 Regulatory Status of Atlas Scrap Yard

Volume I, Section 1.2.4 identifies the regulatory status for these AOCs.

2.0 ENVIRONMENTAL SETTING AT ATLAS SCRAP YARD

This section describes the physical characteristics of ASY that are factors in interpreting the potential contaminant transport pathways, receptor populations and exposure scenarios with respect to the evaluation of human health and ecological risks. The area immediately surrounding ASY is a combination of forested and mostly open areas of former operations. An unnamed stream is located approximately 3300 feet to the northeast of the AOC that flows to Cobbs Ponds. This AOC is approximately 1000 feet west of LL 12. The AOC surface water flows to the east with a very low gradient. Paris Windham Road is located adjacent to the eastern boundary of the AOC. The AOC has very little topographic relief.

2.1 SURFACE FEATURES

The topography at ASY very gently slopes from west to east, with the sharpest contours associated with the drainage ditches along the adjacent roads. Ground elevations adjacent to the ten monitoring wells installed at this site ranged from 976 to 982 ft amsl (USGS Topographic Map, Windham Quadrangle, 1994).

2.2 METEOROLOGY AND CLIMATE

Meteorology and climate are addressed in Section 2.2 of Volume I.

2.3 SURFACE WATER HYDROLOGY

Surface water drainage generally follows the topography of the AOC toward the east. However, an underground storm water drainage system exists in the western portion of ASY. Ditches, which run parallel to the roads adjacent to the AOC, are fed by surface runoff from precipitation events. The ditches tend to hold water for extended periods due to the low permeability of soils and gradient.

2.4 GEOLOGY

Lithologic logs from ten borings, which were advanced during the characterization activities and were completed as monitoring wells, were used to characterize the subsurface geology at ASY. The boring logs, which detail the vertical lithologic sequences, are found in Appendix H.

2.4.1 Glacial Deposits

Subsurface lithology at ASY consists mostly of silts and silty clay with interbedded sands. These deposits are generally firm with low to moderate plasticity. Cross-sections of the subsurface at ASY illustrate the lateral distribution and variation of these discontinuous glaciated sediments (Figures ASY-1 thru ASY-5).

2.4.2 Sedimentary Rocks

Weathered sandstone was encountered in four of the ten monitoring wells that were drilled. Auger refusal, which would denote competent bedrock, occurred at depths ranging from 20 ft bgs to 29 ft bgs. The weathered bedrock encountered at this AOC was a fine to medium grained sandstone.

2.5 SOIL

Two soil types are found at ASY: the Mahoning Silt Loam (2 to 6 percent slopes) and the Trumbull Silt Loam (0 to 2 percent slopes). The Mahoning Silt Loam covers the majority of the interior of the site. Trumbull Silt Loam covers the southwest corner and an area near the eastern boundary of ASY. There is also a thin finger of Trumbull Silt Loam that extends into the center of the AOC from the west side of ASY.

The Mahoning series consists of deep, somewhat poorly drained, nearly level to gently sloping soils that formed in silty clay loam or clay loam glacial till. The Mahoning Silt Loam (2 to 6 percent slopes) is characterized by more gently sloped land with medium to rapid runoff with erosion as a hazard. These low areas are slow to dry out in spring. Seasonal wetness and slow permeability characterize both of these soil types.

The Trumbull Series consists of deep, poorly drained, nearly level soils. These soils formed in silty clay loam, clay loam, or silty clay glacial till. Permeability is very slow in the subsoil and underlying glacial till. Runoff is slow, and ponding is common after heavy rains. Trumbull soils are slow to dry in spring.

Trumbull Silt Loam (0 to 2 percent slopes) is a nearly level soil mainly along small drainageways or in small depressions adjacent to the better drained Mahoning and Remsen soils. Seasonal wetness and very slow permeability are limitations.

2.6 HYDROGEOLOGY

This section describes the unconsolidated sediments and bedrock characteristics found at RVAAP and the ASY.

2.6.1 Unconsolidated Sediments

Groundwater was encountered at approximately 12 to 16 ft bgs during drilling of the ten groundwater monitor wells. Four of the ten borings encountered saturated weathered sandstone.

Because the topography is relatively flat and the top of the bedrock encountered appears to slope to the south, the groundwater flows in a southerly direction in the southern half of the site. In the northwest portion of the AOC, groundwater flows in a northerly direction.

2.6.2 Bedrock

Weathered sandstone was encountered at four of the ten monitoring wells were drilled. Auger refusal occurred at depths ranging from 20 ft bgs to 29 ft bgs. The weathered bedrock encountered at this site was a fine to medium grained sandstone.

2.7 DEMOGRAPHY AND LAND USE

Demographics and land use are discussed in Volume 1, Section 2.7.

2.8 ECOLOGY

Ecological information is provided in Volume I, Section 2.8.

3.0 CHARACTERIZATION ACTIVITIES AT ATLAS SCRAP YARD

This section describes the field and analytical methods implemented during the characterization at the ASY. The field and analytical programs were conducted in accordance with the RVAAP Facility Wide Sampling and Analysis Plan (FWSAP) (USACE, 2001) and the RVAAP 14 AOC FWSAP Addendum (MKM, 2004). Characterization objectives, rationale for sampling locations and sampling methods are briefly discussed in this section.

3.1 FIELD ACTIVITIES

AOC specific field activities conducted from August 2004 thru May 2005 at the ASY included:

- Collecting MI surface soil (0-1 ft) soil samples (11-03-04 – 11-11-04);
- Excavating eight test trenches (10-11-04 – 10-12-04);
- Installing ten groundwater monitoring wells (11-11-04 – 11-16-04);
- Collecting geotechnical samples from the borings (Shelby Tubes) (11-11-04 – 11-15-04);
- Conducting well slug tests (01-21-05);
- Collecting groundwater samples from monitoring wells (11-30-04 – 12-13-04);
- Collecting surface water samples from sanitary sewers (12-06-04 – 12-10-04);
- Collecting sediment samples from sanitary sewers (12-07-04 – 12-10-04);
- Conducting a sampling location and monitoring well survey (12-13-04 – 01-07-05); and
- Conducting an Geophysical Investigation (electromagnetic) over two areas that historically were designated as fueling stations with underground storage tanks (08-16-04 – 08-20-04).

Sampling points were located to assess the impact that the ASY operations may have had on soil, sediments, surface water and groundwater; and to determine where those contaminants are located. Information from USACHPPM's site evaluation and institutional knowledge about the disposal that occurred at ASY was used to determine the sampling locations, type of media collected, analysis run and numbers of samples for this characterization activity. Table ASY-1 summarizes the types and numbers of samples that were collected and the analyses conducted on the samples. A photolog of the investigation activities is provided in Appendix C. Figure ASY-6 shows the monitoring well locations and Figure ASY-7 shows the sample locations for all other media collected at this AOC.

3.1.1 Trenching Activities

Before drilling activities were initiated, eight test trenches were excavated near proposed monitoring well locations. The trenching activities provided information about the soil stratification profile, depth to groundwater and depth to bedrock.

Trenching was halted upon encountering saturation. Saturation was encountered between 7.2 and 14 ft bgs. No suspect soil or MEC was encountered during the trenching operation. Trenching activities were conducted as detailed in Volume I, Section 3.1.5.

3.1.2 MI Surface Soil (0-1 ft) Sampling

MI surface soil (0-1 ft) samples were collected at this AOC to:

- Assess the potential impact of ASY operations on the soils within the AOC;
- Characterize soil around the stockpile areas and service stations; and
- Determine the nature of contamination found.

ASY was divided into 34 MI grids located around stockpiles of debris consisting of pipes, railroad ballast, railroad ties, concrete rubble and chipped ammunition boxes. Additional MI grids were located in portions of the AOC where specific operations occurred or where equipment associated with specific operations was located: demilitarized, tar cleaning tank, incinerator, and Service Stations 1 and 2. Each MI sampling grid is considered an exposure unit. Samples were also collected from dry ditches located within the AOC. At one dry ditch surface soil (0-1 ft) MI sample location, the sampling crew found standing water and sediment. Therefore, the sample was collected and handled as a sediment sample rather than a dry soil sample. One MI surface soil (0-1 ft) sample was collected from each grid. Multi-increment samples were collected as described in Volume I, Section 3.1.10.1. Five split samples were collected and submitted for analysis by an independent, USACE-approved laboratory. Analysis of MI surface soils (0-1 ft) for LL8 included the following parameters: TAL Metals and Explosives.

Eight VOC samples were collected as discrete samples to fulfill the 10 percent full suite requirement and the FWSAP approved VOC collection methods. Section 3.1.10.3, Volume I describes the procedure used to collect discrete surface soil (0-1 ft) samples. Samples were prepared, packaged and shipped per Section 3.1.14, Volume I. Discrete VOC samples were not subjected to MI sample drying or processing. Field sampling forms documenting the surface soil (0-1 ft) soil sampling activities are presented in Appendix E.

3.1.3 Surface Water Sampling (Sewers)

Surface water samples were collected from sewers at this AOC to:

- Evaluate whether water found in sewers is being impacted by runoff from AOC; and
- Identify the migration pathways for contaminated runoff from the ASY.

Fourteen of the 16 sewer locations contained enough water for a viable sample. Samples were not collected from two sewer locations. The sewer assigned sample number ASYsw-013 could not be located and ASYsw-015, did not have a lid and was filled with surface debris, soil and railroad ties. A contingency sewer water sample was collected from a previously unidentified sewer, which was located in a wooded area in the southeast portion of the AOC (ASYsw-017).

When possible, sewer water samples were collected as described in Section 3.1.10.6, Volume I, where applicable. In sewers with insufficient water depth, or where the depth to the surface water was too great to employ FWSAP approved sampling methods, an alternate sampling method was used. The alternate method employed a peristaltic pump and silicone tubing to achieve a sewer water sample, and is described in Volume I. Water quality measurements (pH, conductivity, dissolved oxygen content and temperature) were recorded just prior to sample collection. Analysis of surface water at ASY included the following

parameters: TAL Metals, Explosives, VOCs, SVOCs, Nitrate, Pesticides and PCBs. TPH GRO/DRO was added to the analytical suite due to tar/organic odor and visual contamination in sewers for ASYsw-010, ASYsw-011 and ASYsw-012.

Two split samples were collected and submitted for analysis to an independent USACE-approved laboratory. Samples were prepared, packaged and shipped per Section 3.1.14, Volume I. Field sampling forms for the surface water are presented in Appendix O.

3.1.4 Sewer Sediment Sampling

Sewer sediment samples were collected at this AOC to:

- Evaluate whether sewer sediments are being impacted via surface water runoff from ASY; and
- Evaluate whether contaminants in sewer sediment have migrated beyond the AOC boundaries.

Sewer sediment samples (if present) were co-located with the sewer water samples. Seven of the 17 sewers contained enough sediment for a viable sample. All sewer sediment samples were collected using a long handled scoop or telescopic pole with Teflon® swivel cup as specified in Section 3.1.10.7, Volume I. TPH GRO/DRO was added to the analytical suite due to tar/organic odor and visual contamination in sewers for ASYsw-010, ASYsw-011 and ASYsw-012. Two split samples were collected and submitted for analysis to an independent, USACE-approved laboratory. Analysis of sediment for ASY included the following parameters: TAL Metals, Explosives, TOC and grain size. Samples were prepared, packaged and shipped per Section 3.1.14, Volume I. Field sampling forms are presented in Appendix Q.

3.1.5 Groundwater Investigation Activities

Four of the ten boreholes were advanced into weathered sandstone. Borehole termination depth ranged from 20.0 ft to 28.0 ft bgs at the ASY. The groundwater activities were conducted at this AOC to:

- Determine whether ASY operations had adversely impacted groundwater quality underlying the AOC;
- Evaluate the quality of groundwater upgradient of ASY; and
- Collect data pertaining to the groundwater flow regime at ASY.

The monitoring wells were strategically located to maximize the information obtained from the characterization activities.

Three monitoring wells (ASYmw-001, ASYmw-002 and ASYmw-009) are located upgradient of the AOC.

- ASYmw-003 is located in the portion of the AOC where stockpiles of debris exist.
- ASYmw-004 is located downgradient of former Service Station No. 1.
- ASYmw-005 is located east of the ammunition box storage area.
- ASYmw-006 is located west of the operations area.
- ASYmw-007 is located downgradient of former Service Station No. 2 and the associated paint and repair shop.
- ASYmw-008 is located near former Service Station No. 2.

- ASYmw-010 is location north of former Service Station No. 2.

3.1.5.1 Monitoring Well Installation and Development

An 8.25 in. OD, hollow-stem auger was used to advance the borehole through unconsolidated material to an average depth of 7.54 m (24.73 ft) bgs. Bedrock was encountered in four of the ten boring locations at depths of 16.0 ft bgs (ASYmw-001), 18.0 ft bgs (ASYmw-002), 20.0 ft bgs (ASYmw-003) and 21.5 ft bgs (ASYmw-009).

Monitoring well installation and development at ASY followed the procedures reported in Section 3.1.6, Volume I. Well construction diagrams and well development records are provided in Appendix H.

3.1.5.2 Geotechnical Sample Collection (Shelby Tubes)

Geotechnical analysis was conducted during groundwater monitoring well installation. Three Shelby Tubes were collected at monitoring well locations ASYmw-001 (4 to 6 ft), ASYmw-003 (6 to 8 ft) and ASYmw-007 (8 to 10 ft), and sent to the laboratory for analysis. Geotechnical sample collection was conducted in accordance with Section 4.4.2.4.1 of the FWSAP. Geotechnical analytical data can be found in Appendix J.

3.1.5.3 Groundwater Sampling

All groundwater sampling was conducted as outlined in Section 3.1.10.11, Volume I of this characterization report. No detections were observed in the PID readings for the wells at ASY. This information is provided on the field forms located in Appendix H. Specific information related to the type of PID used and calibration is included in Section 3.1.5, Volume 1. Samples were prepared, packaged and shipped per Section 3.1.14, Volume I. One split sample was collected and submitted for analysis to an independent, USACE-approved laboratory. Analysis of groundwater at ASY included the following parameters: TAL Metals, Explosives, VOCs, SVOCs, Nitrate, Pesticides and PCBs. Well purging and sampling records are provided in Appendix H. All groundwater sampling was conducted in accordance with the procedures provided in Section 4.3.4 and 4.3.5 of the FWSAP. Section 3.1.10.11, Volume 1 also discusses the groundwater sampling procedures used for this project.

3.1.5.4 In-Situ Permeability Testing

Slug tests were performed at the six ASY monitoring wells as discussed in Section 3.1.10.12, Volume I. Slug test data records are provided in Appendix K. The slug test results are located in Section 4.6.

3.1.5.5 Water Level Measurements

Water level measurements were performed at the ten ASY monitoring wells as discussed in Section 3.1.10.13, Volume I. Groundwater elevation data are included in Appendix M.

3.1.6 Sampling Location and Monitoring Well Survey

The sampling location and monitoring well survey at ASY was conducted per the specifications in Section 3.1.11, Volume I of this characterization report. The monitoring well survey report can be found in Appendix N and sampling location survey data is located in Appendix S.

3.1.7 Geophysical Survey

An electromagnetic geophysical survey was conducted at two locations within the ASY. Based upon historical records, these two sites had functioned as fueling stations during operations. The objective of the surveys was to locate subsurface metallic targets that could be underground storage tanks.

The surveys were conducted using two electromagnetic geophysical devices including an EM31/MK2 and Geonics EM61. The surveys spatial positions were recorded using a Trimble GPS Total Station 5700® and rover to provide positional accuracy of 3 centimeters for stacked , stationary readings. The locations of electromagnetic anomalies (if any) were flagged. The results of the geophysical screen are discussed in the ASY Report (Volume IID). Appendix T contains the geophysical survey report for ASY.

3.2 DEVIATIONS FROM THE WORK PLAN

Every effort was made to complete the field activities as outlined in the FWSAP and the approved RVAAP 14 AOC FWSAP Addendum. However, circumstances or field conditions sometimes necessitated a modification. Changes made during the ASY characterization are noted below.

- One surface soil (0-1 ft) MI sample which was designated in a dry ditch sample in the SOW was collected as a sediment sample due to the presence of standing water at the sampling location. Sample ASYss-024M-SO was deleted and sample ASYss-024M-SD was collected instead.
- Two surface water samples stipulated in the SOW and plan were not collected. The sewer where Sample ASYsw-013 was to be collected could not be located. The sewer where Sample ASYsw-015 was to be collected did not have a lid. The sewer was filled with surface debris, soil and railroad ties.
- Seven sewer sediment samples were not collected due to lack of sufficient sediment.
- A full suite sediment sample (ASYsd-017-SD) was collected from a previously unidentified sewer.
- Due to the surface soil (0-1 ft) total depth of four wells, construction deviated from the FWSAP.
- ASYmw-001, ASYmw-002, ASYmw-003 and ASYmw-009 were constructed with 1 ft to 2 ft of sand above the screen rather than 3 ft.
- The same wells have 2 ft of bentonite rather than 3 ft.

    - Two of the monitoring wells were relocated.
    - ASYmw-005 was relcated because the original location was under water.
    - ASYmw-008 was relocated because the location shown in the SOW was not near Service Station No. 2.

- At three sewer surface water locations (ASYsw-010, ASYsw-011 and ASYsw-012), a tarry, organic odor was present and visual contamination was noted. Therefore, TPH GRO/DRO analyses were added to the samples collected from those locations.
- Shipment problems delayed the laboratory's receipt of samples ASYmw-004-GW and ASYmw-007-GW. Therefore, additional groundwater was collected a few days later so the Cr^{+6} analyses could be run.

Although deviations were implemented, the objectives of the ASY characterization were achieved.

4.0 NATURE OF CONTAMINATION AT ATLAS SCRAP YARD

This section summarizes the surface soil (0-1 ft), groundwater, surface water and sediment analytical results obtained from the environmental sampling conducted at the ASY. The results are organized by media: surface soil (0-1 ft), groundwater, surface water and sediment. The number of samples collected and the number of analytical results that exceeded either the RVAAP background criteria or Region 9 Preliminary residential or tap water Remediation Goals are listed in each subsection. The evaluation completed in this section is a preliminary comparison and is not intended to be used alone for making risk management decisions. The risk screening, presented later in this report, further discusses and evaluates the contaminants detected during this AOC characterization. The following sections present a summary and initial screening of the analytical data for samples collected during the AOC characterization.

4.1 MI SURFACE SOIL (0-1 FT)

Thirty-nine MI surface soil (0-1 ft) samples (33 regular and 6 QC) were collected from various locations during the ASY characterization. Additionally, seven discrete surface soil (0-1 ft) samples (6 regular and 1 QC) were collected for VOC analysis. All positive detections were compared to RVAAP background and Region 9 residential PRGs.

Surface soil (0-1 ft) results at or above detection limits are presented in Table ASY-2. All surface soil (0-1 ft) analytical results is presented in Table ASY-6. Locations where surface soil (0-1 ft) analytes were detected at or above background levels and residential PRGs are illustrated in Figures ASY-8A, ASY-8B, ASY-8C, ASY-8D and ASY-9. Laboratory analytical reports are provided in Appendix F.

The surface soil (0-1 ft) analytical results are summarized as follows:

- **Aluminum** exceeded the Region 9 residential PRG in 35 samples, and exceeded background and the Region 9 PRG in four samples with a **maximum concentration of 24000 mg/kg.**
- **Arsenic** exceeded the Region 9 residential PRG in 36 samples, and exceeded background and the Region 9 PRG in three samples with a **maximum concentration of 41 mg/kg.**
- **Barium** exceeded background in 27 samples with a **maximum concentration of 290 mg/kg.**
- **Beryllium** exceeded background in 28 samples with a **maximum concentration of 4.5 mg/kg.**
- **Cadmium** exceeded background in 30 samples, and exceeded background and the Region 9 residential PRG in one sample with a **maximum concentration of 9.5 mg/kg.**
- **Calcium** exceeded background in 16 samples with a **maximum concentration of 140000 mg/kg.**
- **Chromium** exceeded background in 29 samples, and exceeded background and the Region 9 residential PRG in two samples with a **maximum concentration of 64 mg/kg.**
- **Cobalt** exceeded background in five samples with a **maximum concentration of 19 mg/kg.**
- **Copper** exceeded background in 16 samples with a **maximum concentration of 200 mg/kg.**
- **Iron** exceeded the Region 9 residential PRG in 29 samples, and exceeded background and the Region 9 residential PRG in ten samples with a **maximum concentration of 28000 mg/kg.**
- **Lead** exceeded background in 18 samples, and exceeded background and the Region 9 residential PRG in one sample with a **maximum concentration of 1200 mg/kg.**

- **Magnesium** exceeded background in 32 samples with a **maximum concentration of 14000 mg/kg.**
- **Manganese** exceeded the Region 9 residential PRG in 32 samples, and exceeded background and the Region 9 residential PRG in five samples with a **maximum concentration of 3500 mg/kg.**
- **Potassium** exceeded background in 38 samples with a **maximum concentration of 2300 mg/kg.**
- **Selenium** exceeded background in two samples with a **maximum concentration of 1.8 mg/kg.**
- **Silver** exceeded background in five samples with a **maximum concentration of 5.2 mg/kg.**
- **Sodium** exceeded background in 39 samples with a **maximum concentration of 1000 mg/kg.**
- **Vanadium** exceeded the Region 9 residential PRG in 39 samples with a **maximum concentration of 26 mg/kg.**
- **Zinc** exceeded background in 33 samples with a **maximum concentration of 1800 mg/kg.**
- **Mercury** exceeded background in 25 samples with a **maximum concentration of 0.64 mg/kg.**
- **Thallium** exceeded background in two samples with a **maximum concentration of 0.36 mg/kg.**
- **2-Methylnaphthalene** exceeded laboratory detection limits in five samples with a **maximum concentration of 0.038 mg/kg.**
- **Acenaphthylene** exceeded laboratory detection limits in three samples with a **maximum concentration of 0.26 mg/kg.**
- **Benzo(a)anthracene** exceeded the Region 9 residential PRG in one sample with a **maximum concentration of 2.9 mg/kg.**
- **Benzo(a)pyrene** exceeded the Region 9 residential PRG in five samples with a **maximum concentration of 3.2 mg/kg.**
- **Benzo(b)fluoranthene** exceeded the Region 9 residential PRG in two samples with a **maximum concentration of 5.2 mg/kg.**
- **Benzo(g,h,i)perylene** exceeded the Region 9 residential PRG in five samples with a **maximum concentration of 2.1 mg/kg.**
- **Dibenzo(a,h)anthracene** exceeded the Region 9 residential PRG in three samples with a **maximum concentration of 0.75 mg/kg.**
- **Indeno(1,2,3-cd)pyrene** exceeded the Region 9 residential PRG in one sample with a **maximum concentration of 1.7 mg/kg.**
- **Phenanthrene** exceeded laboratory detection limits in five samples with a **maximum concentration of 1.1 mg/kg.**
- **2-Amino-4,6-Dinitrotoluene** exceeded laboratory detection limits in five samples with a **maximum concentration of 0.29 J mg/kg.** J value indicates an estimated result.
- **Nitrocellulose** exceeded laboratory detection limits in three sample with a **maximum concentration of 1.7 mg/kg.**
- **VOCs, pesticides and PCBs** were below Region 9 residential PRGs and/or laboratory detection limits.

4.2 SEDIMENTS

Ten sediment samples (eight regular and two QC) were collected during the AOC characterization at ASY. Results from the sediment samples were compared to facility-wide background concentrations for sediments and/or Region 9 residential PRGs for soil.

Sediment results at or above detection limits are presented in Table ASY-3. All sediment analytical results are presented in Table ASY-7. Sediment analytes detected at or above background levels and Region 9 residential PRGs are illustrated in Figures ASY-10A and ASY-10B. Laboratory analytical reports are provided in Appendix R.

Other details pertinent to the sediment analytical results:

- **Aluminum** exceeded the Region 9 residential PRG in four samples, and exceeded background and the Region 9 PRG in four samples with a **maximum concentration of 15000 mg/kg.**
- **Arsenic** exceeded the Region 9 residential PRG in nine samples, and exceeded background and the Region 9 residential PRG in one sample with a **maximum concentration of 29 mg/kg.**
- **Barium** exceeded background in five samples, and exceeded background and the Region 9 Residential PRG in one sample with a **maximum concentration of 570 mg/kg.**
- **Beryllium** exceeded background in ten samples with a maximum concentration of 2.0 mg/kg.
- **Cadmium** exceeded background in eight samples with a **maximum concentration of 2.0 mg/kg.**
- **Calcium** exceeded background in seven samples with a **maximum concentration of 42000 mg/kg.**
- **Chromium** exceeded background in eight samples with a **maximum concentration of 30 mg/kg.**
- **Cobalt** exceeded background in four samples, and exceeded background and the Region 9 Residential PRG in one sample with a **maximum concentration of 79 mg/kg.**
- **Copper** exceeded background in eight samples with a **maximum concentration of 61 mg/kg.**
- **Iron** exceeded the Region 9 residential PRG in five samples, and exceeded background and the Region 9 residential PRG in five samples with a **maximum concentration of 51000 mg/kg.**
- **Lead** exceeded background in nine samples with a **maximum concentration of 170 mg/kg.**
- **Magnesium** exceeded background in four samples with a maximum concentration of 7200 mg/kg.
- **Manganese** exceeded the Region 9 residential PRG in eight samples, and exceeded background and the Region 9 residential PRG in one sample with a **maximum concentration of 34000 mg/kg.**
- **Nickel** exceeded background in ten samples with a **maximum concentration of 48 mg/kg.**
- **Selenium** exceeded background in six samples with a **maximum concentration of 14 mg/kg.**
- **Silver** exceeded background in two samples with a **maximum concentration of 1.3 mg/kg.**
- **Sodium** exceeded background in nine samples with a **maximum concentration of 550 mg/kg.**
- **Vanadium** exceeded the Region 9 residential PRG in three samples, and exceeded background and the Region 9 residential PRG in seven samples with a **maximum concentration of 56 mg/kg.**
- **Antimony** exceeded background in two samples with a maximum concentration of 0.84 mg/kg.
- **Mercury** exceeded background in eight samples, and exceeded background and the Region 9 residential PRG in one sample with a **maximum concentration of 5.2 mg/kg.**
- **Benzo(a)anthracene** exceeded the Region 9 residential PRG in one sample with a **maximum concentration of 10 J mg/kg.** J value indicates an estimated result.

- **2-Amino-4,6-Dinitrotoluene** exceeded laboratory detection limits in one sample with a **maximum concentration of 0.12 J mg/kg.** J value indicates an estimated result.
- **VOCs, pesticides, PCBs and propellants** were below Region 9 residential PRGs and/or laboratory detection limits.

4.3 SURFACE WATER

Seventeen surface water samples (15 regular and two QC) were collected during the AOC characterization at ASY. Results from analyses were compared to surface water background concentrations and/or Region 9 tap water PRGs.

Surface water results at or above detection limits are presented in Table ASY-4. All surface water analytical results are presented in Table ASY-8. Surface water analytes detected at or above background levels and Region 9 tap water PRGs are illustrated in Figures ASY-10A and ASY-10B. Laboratory analytical reports are provided in Appendix P.

The surface water analytical results are as follows:

- **Barium** exceeded background in one sample with a **maximum concentration of 58 µg/L.**
- **Cadmium** exceeded background in five samples with a **maximum concentration of 0.31 µg/L.**
- **Calcium** exceeded background in six samples with a **maximum concentration of 93000 µg/L.**
- **Chromium** exceeded background in 15 samples with a **maximum concentration of 2.1 µg/L.**
- **Magnesium** exceeded background in one sample with a **maximum concentration of 12000 µg/L.**
- **Nickel** exceeded background in ten samples with a **maximum concentration of 2.8 µg/L.**
- **Potassium** exceeded background in one sample with a **maximum concentration of 3500 µg/L.**
- **Selenium** exceeded background in three samples with a **maximum concentration of 5.2 µg/L.**
- **Vanadium** exceeded background in six samples with a **maximum concentration of 1.7 µg/L.**
- **Antimony** exceeded background in one sample with a **maximum concentration of 3.2 µg/L.**
- **Arsenic** exceeded the Region 9 tap water PRG in three samples with a **maximum concentration of 0.96 µg/L.**
- **Lead** exceeded background in seven samples with a **maximum concentration of 2.4 µg/L.**
- **Benzo(a)pyrene** exceeded the Region 9 tap water PRG in two samples with a **maximum concentration of 0.15 J µg/L.** J value indicates an estimated result.
- **Benzo(b)fluoranthene** exceeded the Region 9 tap water PRG in one sample with a **maximum concentration of 0.13 J µg/L.** J value indicates an estimated result.
- **Indeno(1,2,3-cd)pyrene** exceeded the Region 9 tap water PRG in two samples with a **maximum concentration of 0.2 J µg/L.** J value indicates an estimated result.
- **Phenanthrene** exceeded the laboratory detection limits in one sample with a **maximum concentration of 1.3 µg/L.**
- **4-Amino-2,6-Dinitrotoluene** exceeded laboratory detection limits in one sample with a **maximum concentration of 0.25 J mg/kg.** J value indicates an estimated result.
- **VOCs, pesticides, PCBs and propellants** were below Region 9 tap water PRGs and/or laboratory detection limits.

4.4 GROUNDWATER

Eleven groundwater samples (10 regular and one QC) were collected from newly installed monitoring wells (ASYmw-001 through ASYmw-010) during the AOC characterization at ASY. Groundwater samples were collected to identify any subsurface contamination of the surface soil (0-1 ft) water table. The groundwater analytical results were compared to background values and Region 9 tap water PRGs.

Groundwater results at or above detection limits are presented in Table ASY-5. All groundwater analytical results are presented in Table ASY-9. Groundwater analytes detected at or above background levels and Region 9 tap water PRGs are illustrated in Figure ASY-11. Laboratory analytical reports are provided in Appendix L.

Other details pertinent to the groundwater analytical results:

- **Barium** exceeded background in one sample with a **maximum concentration of 89 µg/L.**
- **Cadmium** exceeded background in four samples with a **maximum concentration of 0.32 µg/L.**
- **Calcium** exceeded background in ten samples with a **maximum concentration of 200000 µg/L**.
- **Cobalt** exceeded background in six samples with a **maximum concentration of 5.0 µg/L.**
- **Copper** exceeded background in two samples with a **maximum concentration of 3.3 µg/L.**
- **Iron** exceeded background in five samples with a **maximum concentration of 2300 µg/L.**
- **Magnesium** exceeded background in 11 samples with a **maximum concentration of 86000 µg/L.**
- **Manganese** exceeded the Region 9 tap water PRG in one sample with a **maximum concentration of 880 µg/L.**
- **Nickel** exceeded background in four samples with a **maximum concentration of 12 µg/L.**
- **Potassium** exceeded background in five samples with a **maximum concentration of 8900 µg/L.**
- **Selenium** exceeded background in four samples with a **maximum concentration of 6.6 µg/L.**
- **Sodium** exceeded background in two samples with a **maximum concentration of 87000 µg/L.**
- **Zinc** exceeded background in one sample with a **maximum concentration of 93 µg/L.**
- **Antimony** exceeded background in two samples with a **maximum concentration of 3.0 µg/L.**
- **Vanadium** exceeded background in six samples with a **maximum concentration of 1.7 µg/L.**
- **Arsenic** exceeded the Region 9 tap water PRG in three samples, and exceeded background and the Region 9 tap water PRG in seven samples with a **maximum concentration of 40 µg/L.**
- **Hexavalent Chromium** exceeded background in six samples with a maximum concentration of 8.7 µg/L.
- **Lead** exceeded background in four samples with a **maximum concentration of 8.3 µg/L.**
- **Bis(2-ethylhexyl)phthalate** exceeded the Region 9 tap water PRG in one sample with a **maximum concentration of 58 J µg/L.** J value indicates an estimated result.
- **VOCs, pesticides, PCBs, explosives and propellants** were below Region 9 tap water PRGs and/or laboratory detection limits.

4.5 GEOTECHNICAL

Geotechnical analysis was collected for the three Shelby Tube samples collected during this investigation. The results of the geotechnical analysis are summarized in the following table.

Sample Number	Depth (ft)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plastic Index	Agg. (%)	C Sand (%)	M Sand (%)	F Sand (%)	Silt & Clay (%)	Soil Description.	USCS Class	pH	Specific Gravity
ASYmw-001	4-6	17.7	33	21	12	4.6	1.6	5.1	12.4	76.4	Brown LEAN CLAY with sand, trace gravel	CL	7.4	2.691
ASYmw-003	6-8	15.7	31	22	10	3.9	2.7	6.1	12.7	74.6	Brown LEAN CLAY with sand, trace gravel	CL	8.5	2.542
ASYmw-007	8-10	16.5	32	21	11	0.4	1.5	4.8	13.8	79.4	Brown LEAN CLAY with sand, trace gravel	CL	7.6	2.672

4.6 IN SITU PERMEABILITY TESTING RESULTS

After the wells were installed, a slug test was completed on each well to determine the in-situ permeability of the aquifer underlying ASY. The following table shows the results of the slug tests performed in January and February 2005.

Hydraulic Conductivities in Atlas Scrap Yard Monitoring Wells

Monitoring Well ID	Screened Interval Depth (ft)	Total Borehole Depth (ft)	Geologic Material Adjacent to Screen	Hydraulic conductivity (cm/s)
MW-001	11-21	22	clayey silt , sandstone	5.18 E-4
MW-002	9.5 -19.5	20	silty sand, sandstone	1.35 E-3
MW-003	11-21	21.5	clayey silt , sandy silt, sandstone	7.71 E-4
MW-004	17-27	27.8	clayey silt , sandy silt, sandstone	9.41 E-5
MW-005	14-24	25	sandy silt, sandstone	1.09 E-4
MW-006	16-26	27	clayey silt , sandy silt, sandstone	1.07 E-4
MW-007	16-26	28	silty sand, sandstone	1.75 E-4
MW-008	15-25	26	clayey silt, silty clay	3.33 E-4
MW-009	11.5-21.5	22	silty sand, sandy silt, sandstone	1.81 E-4
MW-010	17-27	28	clayey silt, silty sand	2.25 E-4

Based on the results of the slug tests, hydraulic conductivities arithmetic average is 3.89×10^{-4} cm/s in the soil underlying ASY. The field measurements and test data are provided in Appendix K along with the calculation worksheets for the tests. Previous slug tests performed at wells located at other AOCs within RVAAP indicate average hydraulic conductivities between 3.87×10^{-2} cm/s to 4.46×10^{-6} cm/s (USACE, 2001b).

Data from the three rounds of well gauging were used to produce potentiometric surface maps for ASY (Figures ASY-12 through ASY-14). The water level data suggests that groundwater flows to the west, southwest at a gradient of approximately 0.008 ft/ft.

5.0 HUMAN HEALTH AND ECOLOGICAL RISK SCREENING FOR ATLAS SCRAP YARD

This section details both the human health and ecological risk screening performed for ASY.

5.1 HUMAN HEALTH RISK SCREENING

Section 5.1, Volume 1 explains how ASY data were screened to determine human health contaminants of concern (COPCs). Total chromium analytical results were conservatively screened against 1/10th of the PRG value; therefore, a screening value of 21 mg/kg was used rather than 210 mg/kg.

5.1.1 Surface Soil (0-1 ft)

Table ASY-10 presents the human health screening table for surface soil (0-1 ft) at the ASY. A total of 51 constituents were detected including metals and semivolatile organic compounds (SVOCs).

- Twenty-one constituents had detections greater than background concentrations: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, vanadium, mercury, and thallium.
- Thirteen constituents had detections above the adjusted Region 9 residential PRGs: aluminum, arsenic, cadium, chromium, iron, lead, manganese, vanadium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene.
- Seven constitutients also had detected concentrations above both RVAAP background and the Region 9 residential PRG: aluminum, arsenic, cadmium, chromium, iron, lead, and manganese.
- Six constituents have no established background value or Region 9 residential PRGs: acenaphthylene, 2-methylnaphthalene, benzo(ghi)perylene, phenanthrene, 2-amino-4,6-dinitrotoluene, and nitrocellulose.

Based on these comparisons, 18 constituents were identified as chemicals of potential concern (COPC) in surface soil (0-1 ft) at the ASY: aluminum, arsenic, cadmium, chromium, iron, lead, manganese, 2-methylnaphthalene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, dibenzo(ah)anthracene, indeno(1,2,3-cd)pyrene, phenanthrene, 2-amino-4,6-dinitrotoluene and nitrocellulose. Of these COPCs acenaphthylene, 2-methylnaphthalene, benzo(ghi)perylene, phenanthrene, 2-amino-4,6-dinitrotoluene and nitrocellulose were identified due to the lack of screening criteria.

5.1.2 Sediment

Table ASY-11 presents the human health screening table for sediment at the ASY. Twenty-eight constituents were detected in sediment. These constituents included metals and SVOCs.

- Twenty constituents had detected concentrations greater than background values: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, selenium, silver, sodium, mercury, vanadium and antimony.
- Nine constituents had detections above the adjusted Region 9 residential PRGs: aluminum, arsenic, barium, cobalt, iron, manganese, vanadium, mercury, and benzo(a)anthracene.
- Eight constituents also had detected concentrations above both background and Region 9 residential PRGs: aluminum; arsenic, barium, cobalt, iron, manganese, mercury, and vanadium.
- One constituent has no established background value or Region 9 residential PRG: 2-amino-4,6-dinitrotoluene.

Based on these comparisons, ten constituents were identified as COPCs: aluminum, arsenic, barium, cobalt, iron, manganese, vanadium, mercury, benzo(a)anthracene and 2-amino-4,6-dinitrotoluene. Of these COPCs, 2-amino-4,6-dinitrotoluene was identified due to the lack of screening criteria.

5.1.3 Surface Water

Table ASY-12 presents the human health screening table for surface water at the ASY. A total of 34 constituents were detected.

- Eleven constituents had detections greater than background values: barium, cadmium, calcium, chromium, magnesium, potassium, nickel, selenium, vanadium, antimony and lead.
- Four constituents had detections above the adjusted Region 9 tap water PRG: arsenic, benzo(a)pyrene, benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene.
- No constituents had detected concentrations greater than both background and the Region 9 tap water PRG.
- Two constituents had no established background value or Region 9 tap water PRG: phenanthrene and 2-amino-4,6-dinitrotoluene.

Based on these comparisons, five constituents were identified as COPCs in surface water: benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and 2-amino-4,6-dinitrotoluene. Of these COPCs, phenanthrene and 2-amino-4,6-dinitrotoluene were identified due to the lack of screening criteria.

5.1.4 Groundwater

Table ASY-13 presents the human health screening table for groundwater at the ASY. A total of 19 constituents were detected, including metals and one SVOC.

- Sixteen constituents had detections greater than background concentrations: arsenic, barium, cadmium, calcium, cobalt, copper, iron, magnesium, potassium, nickel, selenium, sodium, zinc, antimony, lead and hexavalent chromium.
- Three additional constituents had detections above the adjusted Region 9 tap water PRG: manganese, arsenic and bis(2-ethylhexyl)phthalate.

- Arsenic was the only constituent detected above both background and the Region 9 tap water PRG.

Based on these comparisons, arsenic and bis(2-ethylhexyl)phthalate were identified as COPCs in groundwater at the ASY.

5.2 ECOLOGICAL RISK SCREENING

See Section 5.2, Volume I for an explanation of the procedures used to conduct this ecological risk screen.

5.2.1 Surface Soil (0-1 ft)

Table ASY-14 presents the ecological screening table for surface soil (0-1ft) at the ASY. A total of 51 constituents were detected.

- Twenty-one constituents had detections greater than background concentrations: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, zinc, mercury, and thallium.
- Twenty constituents had detections above ecological screening values: aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, vanadium, zinc, mercury, Arcolor 1260, benzo(a)pyrene, bis(2-ethylhexyl)phthalate, butylbenzyl phthalate, and naphthalene.
- Six constituents have no established screening values: 4-methylphenol, dibenzofuran, 2-amino-4,6-dinitrotoluene, 2- nitrotoluene, 3- nitrotoluene, and nitrocellulose.

Based on these comparisons, 25 constituents were identified as chemicals of potential ecological concern (COPEC) in surface soil (0-1ft) at the ASY: aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, magnesium, nickel, selenium, silver, zinc, mercury, Arcolor 1260, 4-methylphenol, benzo(a)pyrene, bis(2-ethylhexyl)phthalate, butylbenzyl phthalate, dibenzofuran, naphthalene, 2-amino-4,6-dinitrotoluene, 2- nitrotoluene, 3- nitrotoluene and nitrocellulose. Of these COPEC, magnesium, 4-methylphenol, dibenzofuran, 2-amino-4,6-dinitrotoluene, 2- nitrotoluene, 3- nitrotoluene, and nitrocellulose were identified due to the lack of screening criteria.

5.2.2 Sediment

Table ASY-15 presents the ecological screening table for sediment at the ASY. Twenty-nine constituents were detected in sediment. These constituents included metals, VOCs, SVOCs, and explosives.

- Twenty (20) constituents had detected concentrations greater than background values: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, selenium, silver, sodium, vanadium, antimony, and mercury.
- Eighteen (18) constituents had maximum concentrations greater than the Sediment Reference Value (SRV) (OEPA, 2003): arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, selenium, silver, vanadium, zinc and mercury.

- Fourteen (14) constituents had detections above ecological screening values: arsenic, cadmium, cobalt, copper, lead, nickel, silver, zinc, mercury, acetone, benzo(a)anthracene, chrysene, pyrene, and total PAHs.
- Ten constituents have no established screening values: aluminum, barium, beryllium, iron, manganese, selenium, vanadium, antimony, thallium, and 2-amino-4,6-dinitrotoluene. Of the eleven, all constituents except thallium exceed the background value established for RVAAP. Seven constituents exceed the SRV: barium, beryllium, iron, magnesium, manganese, selenium and vanadium.

Based on these comparisons, twenty-one (21) constituents were identified as COPECs: arsenic, barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, nickel, selenium, silver, vanadium, mercury, acetone, benzo(a)anthracene, chrysene, pyrene, total PAHs, and 2-amino-4,6-dinitrotoluene.

5.2.3 Surface Water

Table ASY-16 presents the ecological screening table for surface water at the ASY. Seventeen surface water samples were collected resulting in a total of 36 detected constituents.

- Eleven constituents had detections greater than background values: barium, cadmium, calcium, chromium, magnesium, potassium, nickel, selenium, vanadium, antimony, and lead.
- Only anthracene was detected above ecological screening values.
- Ten constituents have no established screening values: aluminum, iron, manganese, selenium, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, and indeno(1,2,3-cd)pyrene. Of the ten, one constituent (selenium) exceeds the background value established for RVAAP.

Based on these comparisons, eight constituents were identified as COPECs in surface water at the ASY: selenium, anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, and indeno(1,2,3-cd)pyrene. All COPEC, except anthracene, were identified due to the lack of screening criteria.

6.0 SUMMARY AND CONCLUSION FOR THE CHARACTERIZATION OF ATLAS SCRAP YARD

This section briefly summarizes the conditions that were found during the AOC characterization at ASY and the risk screening tasks that were completed.

6.1 NATURE OF CONTAMINATION

Contaminants were detected above screening criteria in four media: surface soil (0-1 ft), sediment, surface water and groundwater. Six constituents (all SVOCs) other than inorganics were detected above screening criteria in the samples collected from the various media. SVOCs were detected above screening criteria in all five surface soil (0-1 ft) samples analyzed, the only sediment sample analyzed, two out of 17 surface water samples, and one of 11 groundwater samples.

- Contaminants detected in surface soil (0-1 ft) above background and/or Region 9 residential PRG screening values included 22 metals and five SVOCs.
- In sediment, 20 metals and one SVOC were detected at concentrations above background and/or Region 9 residential PRG screening values.
- In surface water, 12 metals, three SVOCs and Nitrate were detected above background and/or Region 9 tap water PRG screening values.
- In groundwater, 17 metals and one SVOC were detected above background and/or Region 9 tap water PRG screening values.

6.2 HUMAN HEALTH RISK SCREENING

An HHRS was conducted to compare the concentrations detected in the ASY samples to RVAAP-specific background values and USEPA Region 9 residential or tap water PRGs. This preliminary screen was conducted to identify potential COPCs. The following table identifies these COPCs by media:

Table ASY-18			
Chemical of Potential Concern – Soils			
Soils	**Sediment**	**Surface Water**	**Groundwater**
Aluminum	Aluminum	Benzo(a)pyrene	Arsenic
Iron	Iron	2-amino-4,6-dinitrotoluene	Bis(2-ethylhexyl)phthalate
Acenaphthylene	Benzo(a)anthracene	Benzo(b)fluoranthene	
Benzo(ghi)perylene	Arsenic	Indeno(1,2,3-cd)pyrene	
2-amino-4,6-dinitrotoluene	Manganese	Phenanthrene	
Arsenic	2-amino-4,6-dinitrotoluene		
Lead	Barium		
Benzo(a)anthracene	Vanadium		
Dibenzo(ah)anthracene	Cobalt		
Cadmium	Mercury		
Manganese			
Benzo(a)pyrene			
Indeno(1,2,3-cd)pyrene			
Chromium			
2-methylnaphthalene			
Benzo(b)fluoranthene			
Phenanthrene			

6.3 ECOLOGICAL RISK SCREENING

An ERS was performed to compare contaminant concentrations detected in ASY to RVAAP-specific background values and ecological screening values. The ERS was conducted as outlined in Section 5.2, Volume 1. The ERS identified COPECs for ASY. The following table summarizes these COPECs by media:

Table ASY-19			
Chemical of Potential Ecological Concern – All Media			
Soils	**Soils**	**Soils**	**Soils**
Aluminum	Arsenic	Selenium	Groundwater not evaluated for ERS
Arsenic	Barium	Anthracene	
Barium	Beryllium	Benzo(a)pyrene	
Cadmium	Cadmium	Benzo(b)fluoranthene	
Chromium	Cobalt	Benzo(k)fluoranthene	
Copper	Copper	Carbazole	
Iron	Iron	Chrysene	
Lead	Lead	Indeno(1,2,3-cd)pyrene	
Magnesium	Manganese		
Nickel	Nickel		
Selenium	Selenium		
Silver	Silver		
Zinc	Vanadium		
Mercury	Mercury		
Arcolor 1260	Acetone		
4-methylphenol	Benzo(a)anthracene		
Benzo(a)pyrene	Chrysene		
Bis(2-ethylhexyl)phthalate	Pyrene		
Butylbenzyl phthalate	Total PAHs		
Dibenzofuran	2-amino-4,6-dinitrotoluene		
Naphthalene			
2-amino-4,6-dinitrotoluene			
2-nitrotoluene			
3-nitrotoluene			
Nitrocellulose			

6.4 CONCLUSION

Based on the COPCs presented in Section 6.2 and the COPECs presented in Section 6.3, a full risk evaluation should be considered in the overall risk management decisions that are made for the ASY.

NEWTON FALLS RD

ASYmw-001

B

ASYmw-003

D

ASYmw-002

A

ASYmw-005

A'

ASYmw-004

ASYmw-009

ASYmw-010

ASYmw-006

C

C'

ASYmw-008

D'

B'

ASYmw-007

PARIS WINDHAM RD

Legend

- Monitoring Well Locations
- Geologic Cross Section
- Vegetation
- Steam Line Post
- Road
- 10 ft Contour Line
- 2 ft Contour Line

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4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

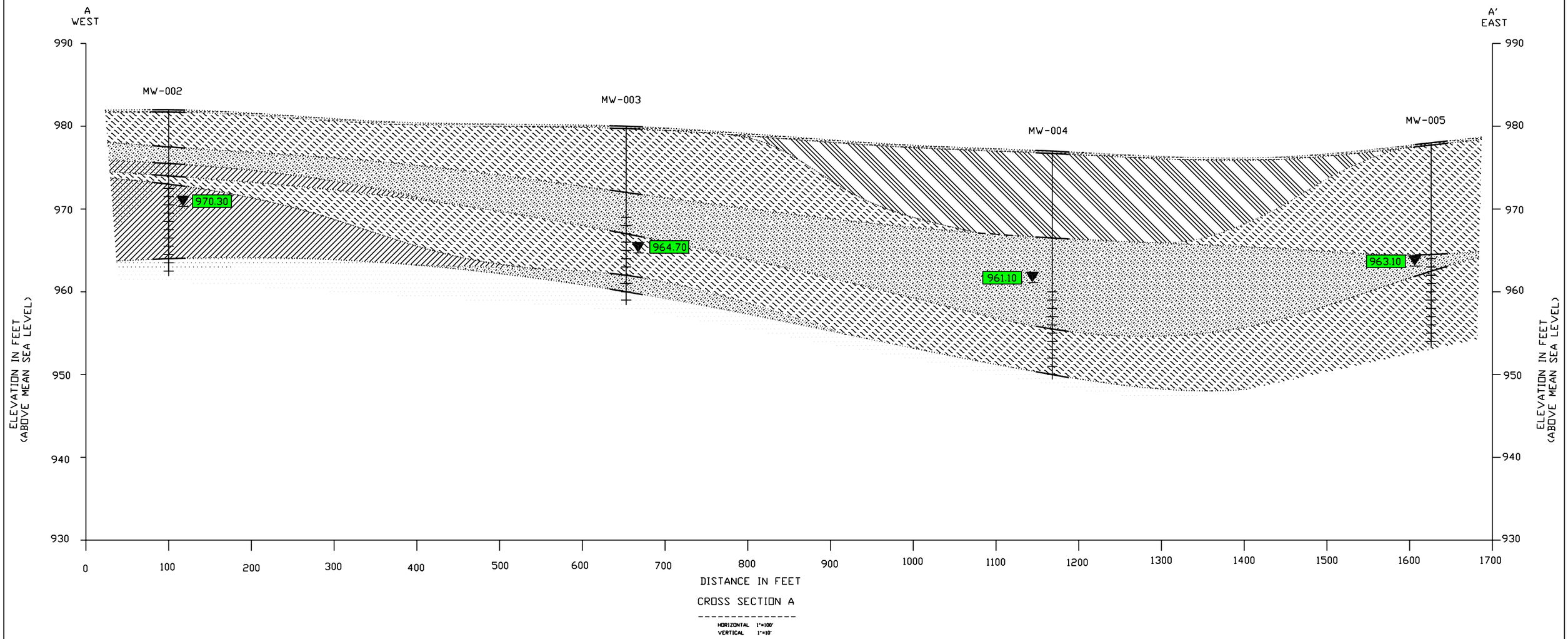
Ravenna, Ohio
Figure ASY-1
Atlas Scrap Yard
Geologic Cross Section

Characterization of 14 RVAAP AOCs

Drawn By:	Checked By:	Date Drawn:	Project No.:
ST	SL	03/30/05	04-02-0030

0 35 70 140 210 Feet

N W E S



VERTICAL EXAGGERATION = 10X

LEGEND

- TOP SOIL
- SANDY SILT
- DEPTH GROUNDWATER ENCOUNTERED
- SCREEN INTERVAL
- SILTY SAND
- SAND STONE
- KNOWN SUBSURFACE SOIL CONDITIONS
- 1140.64 GROUNDWATER ELEVATION (ft)
- SILTY CLAY
- CLAYEY SILT
- EXPECTED SUBSURFACE SOIL CONDITIONS

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
			05/25/06	MS

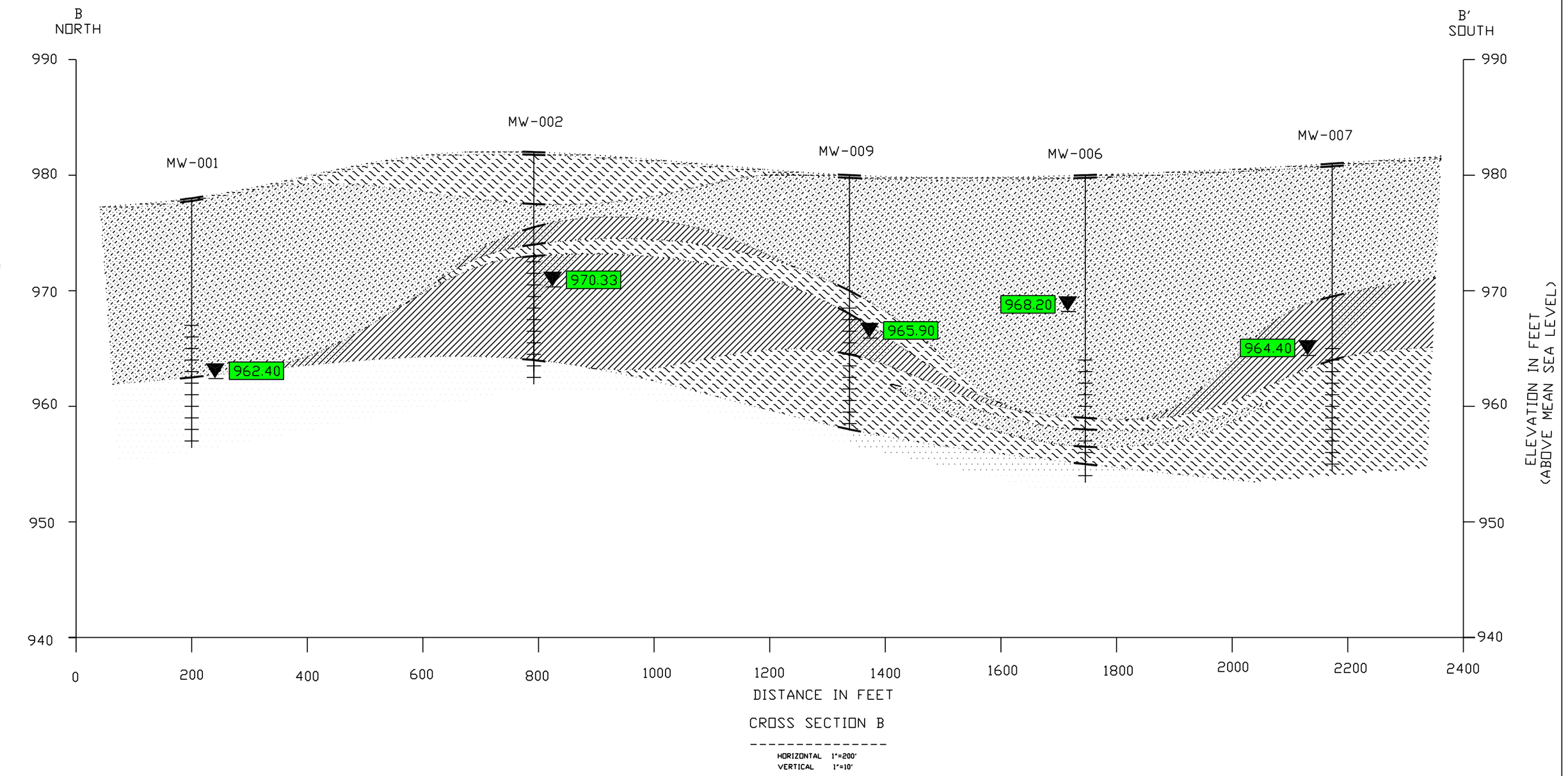
MKM ENGINEERS, INC.

DATE DRAWN 04/18/05

FIGURE ASY-2
ATLAS SCRAP YARD
GEOLOGIC CROSS SECTION A
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO

SIZE	PROJECT NO.	DWG NO.	REV
D		ASY-2	

DRAWN BY	ST	APPR. BY	SRL



VERTICAL EXAGGERATION = 10X

LEGEND

- TOP SOIL
- SANDY SILT
- DEPTH GROUNDWATER ENCOUNTERED
- SCREEN INTERVAL
- SILTY SAND
- SAND STONE
- KNOWN SUBSURFACE SOIL CONDITIONS
- 1140.64 GROUNDWATER ELEVATION (ft)
- SILTY CLAY
- CLAYEY SILT
- EXPECTED SUBSURFACE SOIL CONDITIONS

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
			05/25/06	MS

MKM ENGINEERS, INC.

DATE DRAWN 04/18/05

FIGURE ASY-3
ATLAS SCRAP YARD
GEOLOGIC CROSS SECTION B
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO

SIZE	PROJECT NO.	DWG NO.	REV
D		ASY-3	

DRAWN BY	ST	APPR. BY	SRL

C
WEST

C'
EAST

MW-006

MW-010

MW-008

968.20

965.20

961.20

990
980
970
960
950
940
930

ELEVATION IN FEET
(ABOVE MEAN SEA LEVEL)

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300

DISTANCE IN FEET

CROSS SECTION C

HORIZONTAL 1"=100'
VERTICAL 1"=10'

VERTICAL EXAGGERATION = 10X

LEGEND

- TOP SOIL
- SILTY SAND
- SILTY CLAY
- SANDY SILT
- SAND STONE
- CLAYEY SILT
- DEPTH GROUNDWATER ENCOUNTERED
- KNOWN SUBSURFACE SOIL CONDITIONS
- EXPECTED SUBSURFACE SOIL CONDITIONS
- SCREEN INTERVAL
- 1140.64 GROUNDWATER ELEVATION (ft)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
			05/25/06	MS

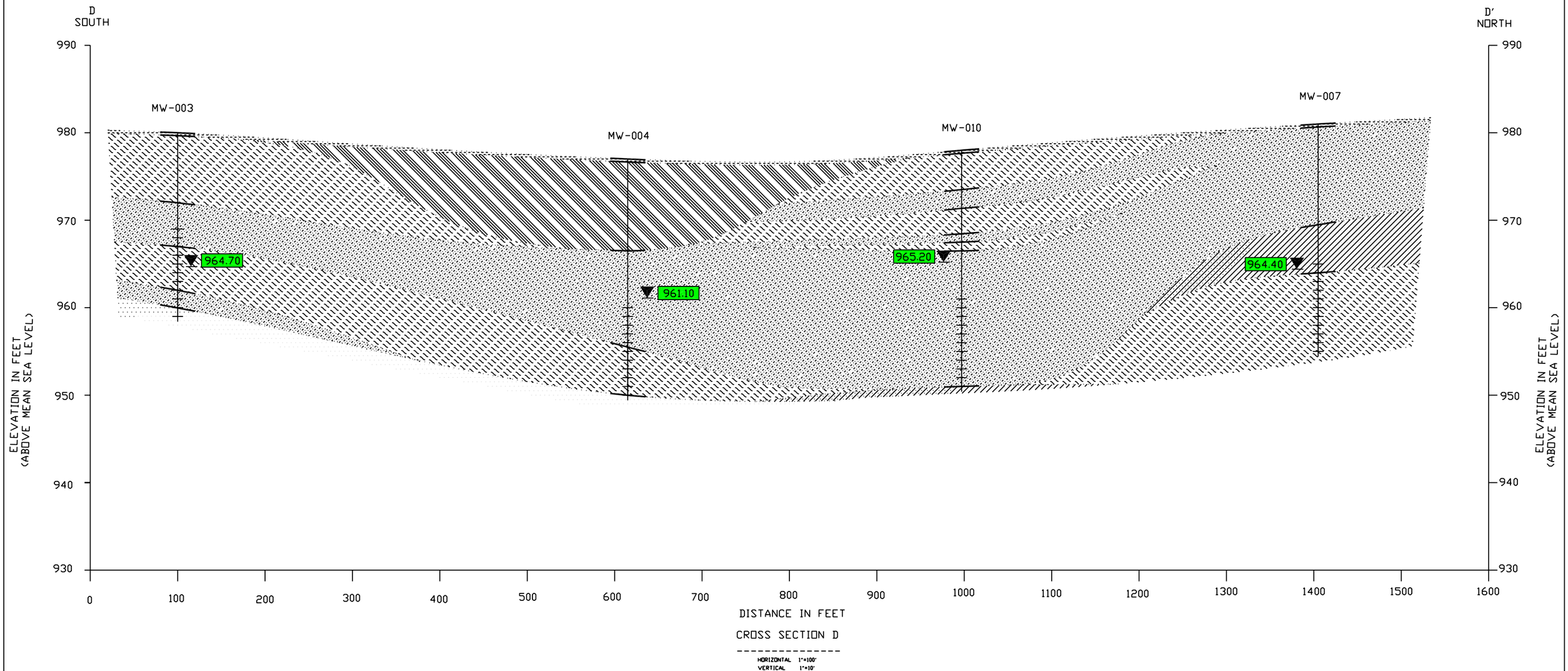
MKM ENGINEERS, INC.

DATE DRAWN 04/18/05

FIGURE ASY-4
ATLAS SCRAP YARD
GEOLOGIC CROSS SECTION C
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO

SIZE	PROJECT NO.	DWG NO.	REV
D		ASY-4	

DRAWN BY	ST	APPR. BY	SRL



LEGEND

- TOP SOIL
- SANDY SILT
- SHALE
- DEPTH GROUNDWATER ENCOUNTERED
- SILTY SAND
- SAND STONE
- SCREEN INTERVAL
- KNOWN SUBSURFACE SOIL CONDITIONS
- SILTY CLAY
- CLAYEY SILT
- 1140.64 GROUNDWATER ELEVATION (ft)
- EXPECTED SUBSURFACE SOIL CONDITIONS

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
			05/25/06	MS

MKM ENGINEERS, INC.

DATE DRAWN 04/18/05

FIGURE ASY-5
ATLAS SCRAP YARD
GEOLOGIC CROSS SECTION D
RAVENNA ARMY AMMUNITION PLANT, RAVENNA OHIO

SIZE	PROJECT NO.	DWG NO.	REV
D		ASY-5	

DRAWN BY	ST	APPR. BY	SRL

NEWTON FALLS RD

ASYmw-001

ASYmw-003

ASYmw-002

ASYmw-005

ASYmw-004

ASYmw-009

PARIS WINDHAM RD

ASYmw-010

ASYmw-006

ASYmw-008

ASYmw-007

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-6

Atlas Scrap Yard

Monitoring Well Locations

Characterization of 14 RVAAP AOCs

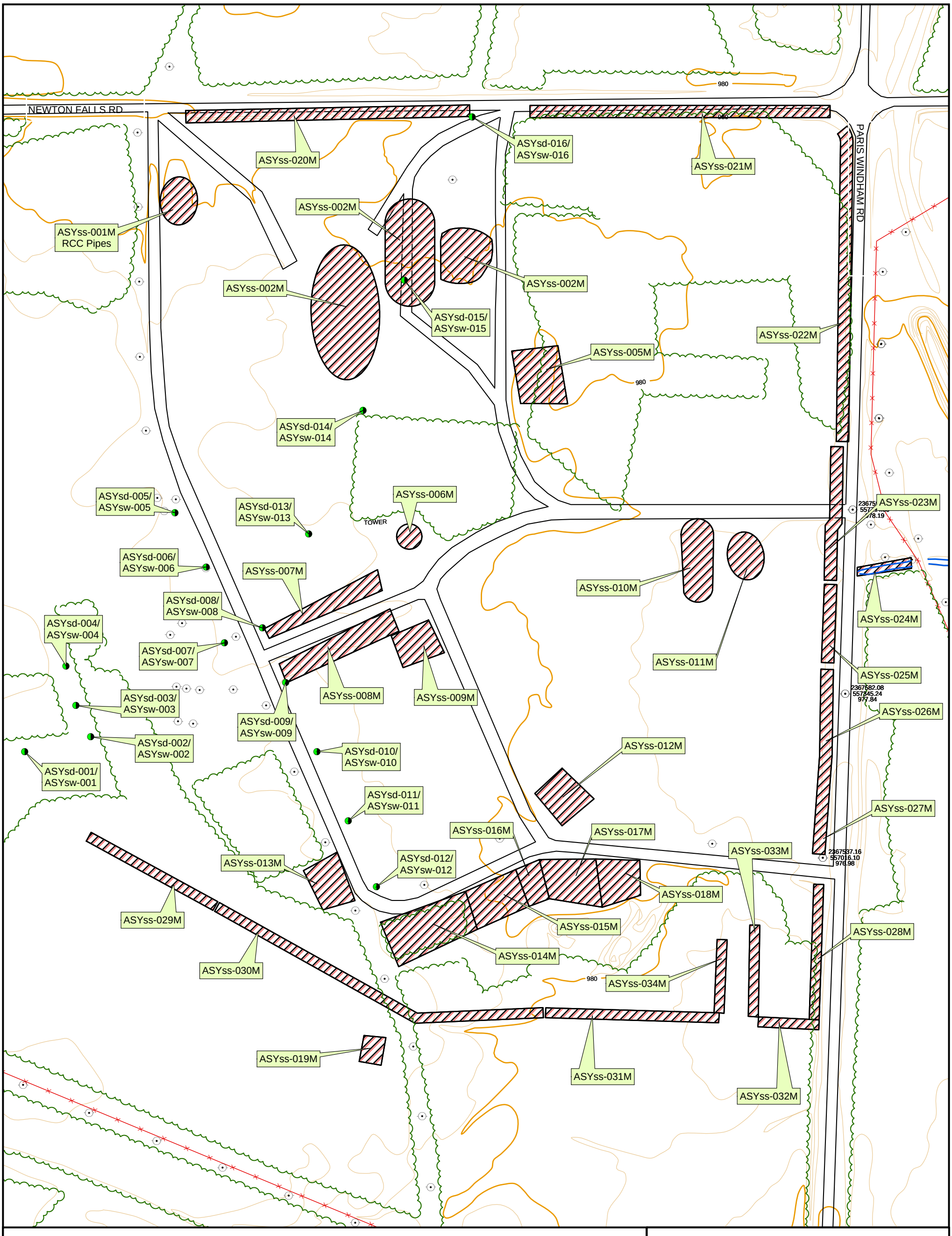
Drawn By:	Checked By:	Date Drawn:	Project No.:
ST	SL	03/30/05	04-02-0030

0 35 70 140 210 Feet

N W E S

Legend

- Monitoring Well Locations
- Road
- Vegetation
- 10 ft Contour Line
- Steam Line Post
- 2 ft Contour Line



Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Steam Line Post
- Sediment/Surface Water Sewer Sample Location
- Surface Soil (0-1 ft) Multi- incremental Sample Location

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-7

Atlas Scrap Yard
Sampling Locations

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S

ASYss-001M-SO

Analyte	Result	Units	Qualifier
Aluminum	**24000**	mg/kg	
Arsenic	**5.9**	mg/kg	
Barium	290	mg/kg	
Beryllium	4.3	mg/kg	
Cadmium	0.64	mg/kg	
Calcium	91000	mg/kg	
Iron	**11000**	mg/kg	
Lead	43	mg/kg	
Magnesium	14000	mg/kg	
Manganese	**3500**	mg/kg	
Potassium	2300	mg/kg	
Selenium	1.8	mg/kg	
Sodium	930	mg/kg	
Vanadium	**11**	mg/kg	
Zinc	180	mg/kg	
Mercury	0.05	mg/kg	

ASYss-021M-SO

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**13**	mg/kg	
Beryllium	1	mg/kg	
Cadmium	0.19	mg/kg	
Chromium	22	mg/kg	
Cobalt	13	mg/kg	
Copper	20	mg/kg	
Iron	**27000**	mg/kg	
Magnesium	3300	mg/kg	
Manganese	**450**	mg/kg	
Nickel	23	mg/kg	
Potassium	1600	mg/kg	
Sodium	400	mg/kg	
Vanadium	**23**	mg/kg	
Zinc	64	mg/kg	

ASYss-021M-DUP

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**15**	mg/kg	
Beryllium	1.1	mg/kg	
Chromium	22	mg/kg	
Cobalt	13	mg/kg	
Copper	19	mg/kg	
Iron	**28000**	mg/kg	
Magnesium	3300	mg/kg	
Manganese	**470**	mg/kg	
Nickel	23	mg/kg	
Potassium	1500	mg/kg	
Sodium	390	mg/kg	
Vanadium	**24**	mg/kg	
Zinc	66	mg/kg	

ASYsd-024M-SD

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**10**	mg/kg	
Barium	140	mg/kg	
Beryllium	1.2	mg/kg	
Cadmium	1.8	mg/kg	
Chromium	20	mg/kg	
Copper	31	mg/kg	
Iron	**17000**	mg/kg	
Lead	37	mg/kg	
Manganese	**420**	mg/kg	
Nickel	20	mg/kg	
Selenium	2.7	mg/kg	
Sodium	450	mg/kg	
Vanadium	**24**	mg/kg	
Mercury	0.14	mg/kg	

ASYss-002M-SO

Analyte	Result	Units	Qualifier
Aluminum	**17000**	mg/kg	
Arsenic	**8.9**	mg/kg	
Barium	180	mg/kg	
Beryllium	3.2	mg/kg	
Cadmium	0.17	mg/kg	
Calcium	67000	mg/kg	
Chromium	23	mg/kg	
Iron	**18000**	mg/kg	
Magnesium	10000	mg/kg	
Manganese	**1400**	mg/kg	
Potassium	1800	mg/kg	
Sodium	780	mg/kg	
Vanadium	**14**	mg/kg	

ASYss-020M-SO

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	110	mg/kg	
Beryllium	1.3	mg/kg	
Cadmium	0.1	mg/kg	
Calcium	21000	mg/kg	
Chromium	22	mg/kg	
Iron	**23000**	mg/kg	
Magnesium	3700	mg/kg	
Manganese	**580**	mg/kg	
Potassium	1800	mg/kg	
Sodium	440	mg/kg	
Vanadium	**20**	mg/kg	
Zinc	130	mg/kg	

ASYss-007M-SO

Analyte	Result	Units	Qualifier
Aluminum	**11000**	mg/kg	
Arsenic	**9.8**	mg/kg	
Barium	100	mg/kg	
Beryllium	0.98	mg/kg	
Cadmium	0.3	mg/kg	
Calcium	16000	mg/kg	
Iron	**17000**	mg/kg	
Lead	49	mg/kg	
Manganese	**760**	mg/kg	
Potassium	1000	mg/kg	J
Sodium	320	mg/kg	
Vanadium	**17**	mg/kg	
Zinc	100	mg/kg	
Mercury	0.055	mg/kg	

ASYss-007M-DUP

Analyte	Result	Units	Qualifier
Aluminum	**12000**	mg/kg	
Arsenic	**9.1**	mg/kg	
Barium	97	mg/kg	
Beryllium	1	mg/kg	
Cadmium	0.45	mg/kg	
Iron	**18000**	mg/kg	
Lead	49	mg/kg	
Magnesium	3300	mg/kg	
Manganese	**760**	mg/kg	
Potassium	1200	mg/kg	
Sodium	360	mg/kg	
Vanadium	**19**	mg/kg	
Zinc	110	mg/kg	
Mercury	0.052	mg/kg	

ASYss-029M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**9.2**	mg/kg	
Chromium	18	mg/kg	
Iron	**21000**	mg/kg	
Potassium	1200	mg/kg	
Sodium	340	mg/kg	
Vanadium	**22**	mg/kg	
Mercury	0.074	mg/kg	

ASYss-030M-SO

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**10**	mg/kg	
Barium	110	mg/kg	
Beryllium	0.96	mg/kg	
Cadmium	0.47	mg/kg	
Chromium	19	mg/kg	
Iron	**21000**	mg/kg	
Lead	38	mg/kg	
Potassium	1200	mg/kg	
Sodium	320	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	82	mg/kg	
Mercury	0.079	mg/kg	

ASYss-019M-SO

Analyte	Result	Units	Qualifier
Aluminum	**11000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	280	mg/kg	
Cadmium	**9.5**	mg/kg	
Chromium	**64**	mg/kg	
Copper	200	mg/kg	
Iron	**27000**	mg/kg	
Lead	**1200**	mg/kg	
Manganese	**470**	mg/kg	
Nickel	22	mg/kg	
Potassium	1200	mg/kg	
Silver	0.62	mg/kg	
Sodium	950	mg/kg	
Vanadium	**19**	mg/kg	
Zinc	1800	mg/kg	
Mercury	0.64	mg/kg	

ASYss-014M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**9.2**	mg/kg	
Cadmium	0.14	mg/kg	
Iron	**18000**	mg/kg	
Manganese	**710**	mg/kg	
Sodium	340	mg/kg	
Vanadium	**21**	mg/kg	
Zinc	65	mg/kg	
Mercury	0.053	mg/kg	

ASYss-028M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**13**	mg/kg	
Chromium	20	mg/kg	
Copper	20	mg/kg	
Iron	**26000**	mg/kg	
Manganese	**340**	mg/kg	
Nickel	26	mg/kg	
Potassium	1600	mg/kg	
Sodium	380	mg/kg	
Vanadium	**21**	mg/kg	
Zinc	110	mg/kg	

NEWTON FALLS RD

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TOWER

980

2367596.89
557714.60
978.19

2367582.08
557845.24
977.84

2367537.16
557016.10
976.98

Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Surface Soil (0-1 ft) Multi-increment Sample Location
- Sediment Multi-increment Sample Location

Notes:
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mk/kg - milligrams per kilogram (parts per million - ppm)

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-8A

Atlas Scrap Yard

Soil Sample Location Exceedences - Inorganics

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S

ASYss-003M-SO

Analyte	Result	Units	Qualifier
Aluminum	**22000**	mg/kg	
Arsenic	**6.5**	mg/kg	
Barium	230	mg/kg	
Beryllium	4.5	mg/kg	
Cadmium	0.3	mg/kg	
Calcium	140000	mg/kg	
Chromium	19	mg/kg	
Iron	**12000**	mg/kg	
Magnesium	14000	mg/kg	
Manganese	**3100**	mg/kg	
Potassium	2200	mg/kg	
Selenium	1.6	mg/kg	
Sodium	1000	mg/kg	
Vanadium	**12**	mg/kg	

ASYss-004M-SO

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	140	mg/kg	
Beryllium	1.9	mg/kg	
Cadmium	0.24	mg/kg	
Calcium	50000	mg/kg	
Chromium	20	mg/kg	
Copper	38	mg/kg	
Iron	**17000**	mg/kg	
Lead	28	mg/kg	
Magnesium	7100	mg/kg	
Manganese	**1300**	mg/kg	
Potassium	1600	mg/kg	
Sodium	530	mg/kg	
Vanadium	**16**	mg/kg	
Zinc	64	mg/kg	
Mercury	0.053	mg/kg	

ASYss-022M-QA

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**12**	mg/kg	
Barium	96	mg/kg	
Beryllium	1.1	mg/kg	
Cadmium	0.23	mg/kg	
Chromium	19	mg/kg	
Iron	**26000**	mg/kg	
Magnesium	3300	mg/kg	
Manganese	**700**	mg/kg	
Potassium	1500	mg/kg	
Sodium	390	mg/kg	
Vanadium	**25**	mg/kg	
Zinc	69	mg/kg	
Thallium	0.21	mg/kg	

ASYss-022M-SO

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**14**	mg/kg	
Beryllium	0.91	mg/kg	
Cadmium	0.24	mg/kg	
Chromium	23	mg/kg	
Cobalt	12	mg/kg	
Copper	20	mg/kg	
Iron	**27000**	mg/kg	
Magnesium	3300	mg/kg	
Manganese	**570**	mg/kg	
Nickel	23	mg/kg	
Potassium	1700	mg/kg	
Sodium	370	mg/kg	
Vanadium	**25**	mg/kg	
Zinc	69	mg/kg	

ASYss-025M-SO

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**12**	mg/kg	
Barium	94	mg/kg	
Chromium	21	mg/kg	
Iron	**23000**	mg/kg	
Manganese	**730**	mg/kg	
Potassium	1200	mg/kg	
Sodium	350	mg/kg	
Vanadium	**25**	mg/kg	
Zinc	83	mg/kg	
Mercury	0.065	mg/kg	

ASYss-005M-SO

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**6.3**	mg/kg	
Barium	130	mg/kg	
Beryllium	1.6	mg/kg	
Cadmium	0.3	mg/kg	
Calcium	32000	mg/kg	
Iron	**13000**	mg/kg	
Magnesium	5300	mg/kg	
Manganese	**1000**	mg/kg	
Potassium	1300	mg/kg	
Sodium	410	mg/kg	
Vanadium	**15**	mg/kg	
Mercury	0.055	mg/kg	

ASYss-008M-SO

Analyte	Result	Units	Qualifier
Aluminum	**16000**	mg/kg	
Arsenic	**10**	mg/kg	
Barium	180	mg/kg	
Beryllium	2.5	mg/kg	
Cadmium	1.8	mg/kg	
Calcium	53000	mg/kg	
Chromium	22	mg/kg	
Copper	33	mg/kg	
Iron	**28000**	mg/kg	
Lead	69	mg/kg	
Magnesium	8400	mg/kg	
Manganese	**1400**	mg/kg	
Potassium	1600	mg/kg	
Sodium	710	mg/kg	
Vanadium	**15**	mg/kg	
Zinc	200	mg/kg	
Mercury	0.092	mg/kg	

ASYss-013M-SO

Analyte	Result	Units	Qualifier
Aluminum	**20000**	mg/kg	
Arsenic	**10**	mg/kg	
Barium	210	mg/kg	
Beryllium	3.7	mg/kg	
Cadmium	0.84	mg/kg	
Calcium	83000	mg/kg	
Chromium	**34**	mg/kg	
Copper	25	mg/kg	
Iron	**14000**	mg/kg	
Lead	97	mg/kg	
Magnesium	12000	mg/kg	
Manganese	**1900**	mg/kg	
Potassium	1900	mg/kg	
Sodium	880	mg/kg	
Vanadium	**12**	mg/kg	
Zinc	120	mg/kg	

ASYss-009M-SO

Analyte	Result	Units	Qualifier
Aluminum	**8100**	mg/kg	
Arsenic	**7.3**	mg/kg	
Cadmium	0.41	mg/kg	
Iron	**14000**	mg/kg	
Manganese	**250**	mg/kg	
Potassium	950	mg/kg	
Sodium	250	mg/kg	
Vanadium	**15**	mg/kg	
Zinc	210	mg/kg	

ASYss-015M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**9.4**	mg/kg	
Cadmium	0.15	mg/kg	
Chromium	18	mg/kg	
Iron	**20000**	mg/kg	
Lead	28	mg/kg	
Manganese	**360**	mg/kg	
Potassium	1000	mg/kg	
Sodium	330	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	66	mg/kg	
Mercury	0.067	mg/kg	

ASYss-031M-SO

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**12**	mg/kg	
Barium	130	mg/kg	
Beryllium	1.2	mg/kg	
Cadmium	1.4	mg/kg	
Chromium	18	mg/kg	
Cobalt	16	mg/kg	
Copper	31	mg/kg	
Iron	**22000**	mg/kg	
Lead	41	mg/kg	
Manganese	**940**	mg/kg	
Nickel	25	mg/kg	
Potassium	1200	mg/kg	
Selenium	1	mg/kg	
Sodium	320	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	220	mg/kg	
Mercury	0.083	mg/kg	
Thallium	0.26	mg/kg	

ASYss-032M-SO

Analyte	Result	Units	Qualifier
Aluminum	**16000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	120	mg/kg	
Beryllium	1.3	mg/kg	
Cadmium	1.3	mg/kg	
Chromium	19	mg/kg	
Cobalt	19	mg/kg	
Copper	25	mg/kg	
Iron	**27000**	mg/kg	
Lead	33	mg/kg	
Manganese	**1700**	mg/kg	
Nickel	31	mg/kg	
Potassium	1400	mg/kg	
Sodium	370	mg/kg	
Vanadium	**26**	mg/kg	
Zinc	260	mg/kg	
Mercury	0.066	mg/kg	

ASYss-033M-SO

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**8.4**	mg/kg	
Barium	94	mg/kg	
Cadmium	0.91	mg/kg	
Chromium	21	mg/kg	
Copper	20	mg/kg	
Iron	**20000**	mg/kg	
Lead	43	mg/kg	
Manganese	**570**	mg/kg	
Nickel	23	mg/kg	
Potassium	1300	mg/kg	
Sodium	340	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	140	mg/kg	
Mercury	0.099	mg/kg	

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TOWER

2367596.89
557714.60
978.19

2367582.08
557245.24
977.84

2367537.16
557016.10
976.98

980

Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Surface Soil (0-1 ft) Multi-increment Sample Location
- Fence

Notes:

If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilogram (parts per million - ppm)

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-8B

Atlas Scrap Yard

Soil Sample Location Exceedences - Inorganics

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S

ASYss-010M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**6.9**	mg/kg	
Barium	93	mg/kg	
Beryllium	1	mg/kg	
Chromium	20	mg/kg	
Iron	**17000**	mg/kg	
Magnesium	3400	mg/kg	
Manganese	**730**	mg/kg	
Potassium	1200	mg/kg	
Silver	0.76	mg/kg	
Sodium	390	mg/kg	
Vanadium	**20**	mg/kg	
Zinc	100	mg/kg	
Mercury	0.095	mg/kg	

ASYss-023M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	99	mg/kg	
Beryllium	0.93	mg/kg	
Cadmium	0.11	mg/kg	
Chromium	22	mg/kg	
Iron	**21000**	mg/kg	
Manganese	**330**	mg/kg	
Potassium	1000	mg/kg	
Sodium	360	mg/kg	
Vanadium	**19**	mg/kg	
Zinc	65	mg/kg	

ASYss-011M-SO

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**4.8**	mg/kg	
Barium	95	mg/kg	
Beryllium	1.1	mg/kg	
Cadmium	0.09	mg/kg	
Calcium	17000	mg/kg	
Chromium	18	mg/kg	
Iron	**14000**	mg/kg	
Magnesium	3800	mg/kg	
Manganese	**520**	mg/kg	
Potassium	1100	mg/kg	
Sodium	370	mg/kg	
Vanadium	**20**	mg/kg	
Zinc	98	mg/kg	
Mercury	0.28	mg/kg	

ASYss-006M-SO

Analyte	Result	Units	Qualifier
Aluminum	**19000**	mg/kg	
Arsenic	**6.8**	mg/kg	
Barium	240	mg/kg	
Beryllium	3.7	mg/kg	
Cadmium	0.43	mg/kg	
Calcium	86000	mg/kg	
Chromium	28	mg/kg	
Iron	**12000**	mg/kg	
Lead	150	mg/kg	
Magnesium	13000	mg/kg	
Manganese	**2200**	mg/kg	
Potassium	1800	mg/kg	
Sodium	990	mg/kg	
Vanadium	**13**	mg/kg	
Zinc	88	mg/kg	
Mercury	0.047	mg/kg	

ASYss-017M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**22**	mg/kg	
Barium	160	mg/kg	
Beryllium	2.5	mg/kg	
Cadmium	0.88	mg/kg	
Calcium	83000	mg/kg	
Chromium	23	mg/kg	
Copper	32	mg/kg	
Iron	**16000**	mg/kg	
Lead	110	mg/kg	
Magnesium	8000	mg/kg	
Manganese	**1300**	mg/kg	
Potassium	1400	mg/kg	
Sodium	680	mg/kg	
Vanadium	**10**	mg/kg	
Zinc	120	mg/kg	
Mercury	0.087	mg/kg	

ASYss-017M-DUP

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**23**	mg/kg	
Barium	180	mg/kg	
Beryllium	2.7	mg/kg	
Cadmium	0.89	mg/kg	
Calcium	80000	mg/kg	
Chromium	22	mg/kg	
Copper	33	mg/kg	
Iron	**16000**	mg/kg	
Lead	110	mg/kg	
Magnesium	8500	mg/kg	
Manganese	**1300**	mg/kg	
Potassium	1600	mg/kg	
Sodium	720	mg/kg	
Vanadium	**11**	mg/kg	
Zinc	130	mg/kg	
Mercury	0.065	mg/kg	
Thallium	0.24	mg/kg	

ASYss-012M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**5.2**	mg/kg	
Barium	110	mg/kg	
Beryllium	1.5	mg/kg	
Cadmium	0.32	mg/kg	
Calcium	39000	mg/kg	
Iron	**11000**	mg/kg	
Lead	31	mg/kg	
Magnesium	5400	mg/kg	
Manganese	**700**	mg/kg	
Potassium	1300	mg/kg	
Silver	4.8	mg/kg	
Sodium	570	mg/kg	
Vanadium	**13**	mg/kg	
Mercury	0.072	mg/kg	
Thallium	0.24	mg/kg	

ASYss-012M-QA

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**5**	mg/kg	
Barium	120	mg/kg	
Beryllium	1.8	mg/kg	
Cadmium	0.29	mg/kg	
Calcium	43000	mg/kg	
Iron	**9900**	mg/kg	
Lead	31	mg/kg	
Magnesium	6400	mg/kg	
Manganese	**760**	mg/kg	
Potassium	1300	mg/kg	
Silver	3.2	mg/kg	
Sodium	660	mg/kg	
Vanadium	**12**	mg/kg	
Zinc	63	mg/kg	
Mercury	0.06	mg/kg	

NEWTON FALLS RD
PARIS WINDHAM RD
TOWER
980
2367596.89
557714.60
978.19
2367582.08
557345.24
977.84
2367537.16
557016.10
976.98

Legend

- Vegetation
- Streams/Ditches
- Road
- Steam Line Post
- 10 ft Contour Lines
- 2 ft Contour Lines
- Surface Soil (0-1 ft) Multi-increment Sample Location
- Fence

Notes:

If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilograms (parts per million - ppm)

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-8C

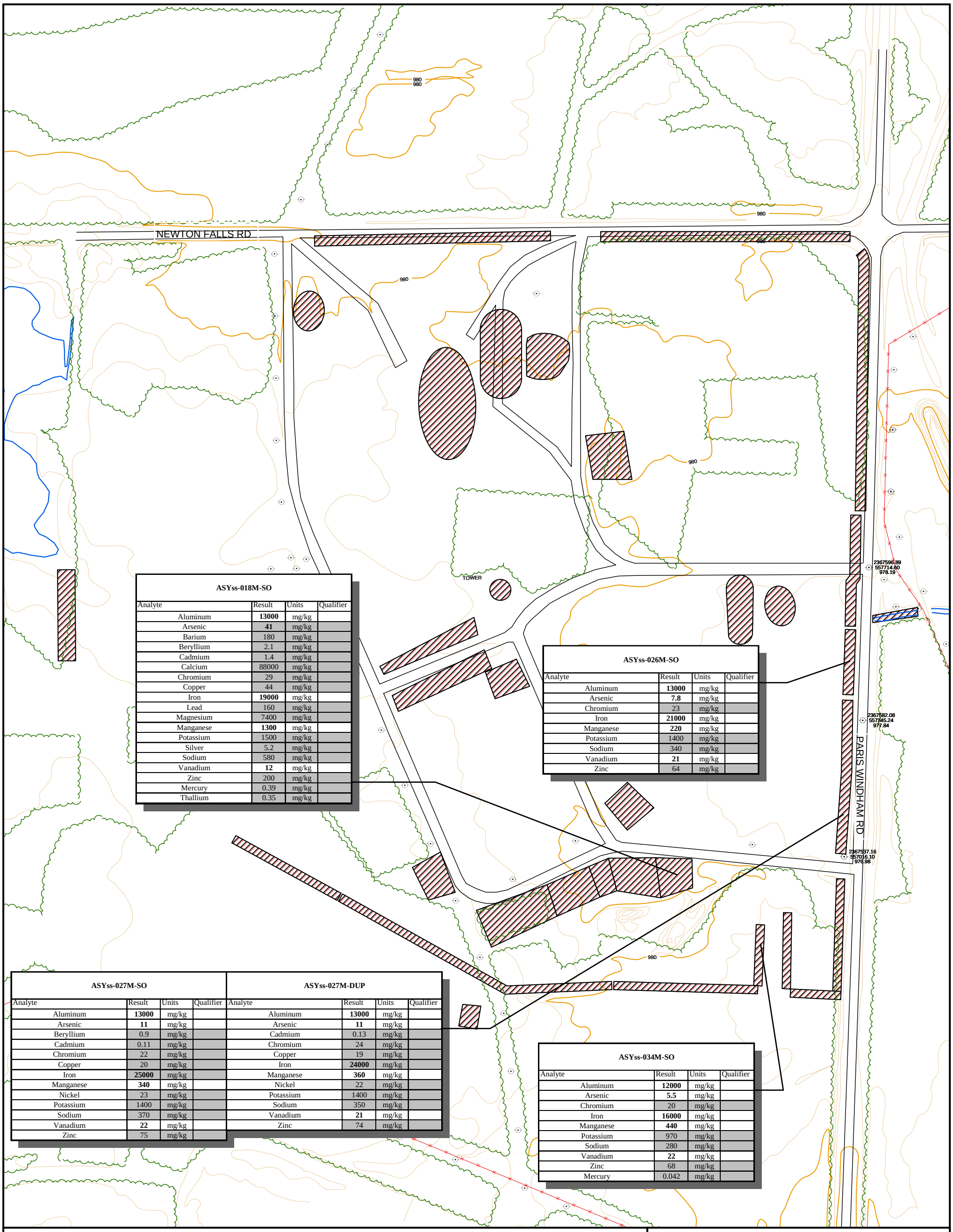
Atlas Scrap Yard

Soil Sample Location Exceedences - Inorganics

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S



ASYss-018M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**41**	mg/kg	
Barium	180	mg/kg	
Beryllium	2.1	mg/kg	
Cadmium	1.4	mg/kg	
Calcium	88000	mg/kg	
Chromium	29	mg/kg	
Copper	44	mg/kg	
Iron	**19000**	mg/kg	
Lead	160	mg/kg	
Magnesium	7400	mg/kg	
Manganese	**1300**	mg/kg	
Potassium	1500	mg/kg	
Silver	5.2	mg/kg	
Sodium	580	mg/kg	
Vanadium	**12**	mg/kg	
Zinc	200	mg/kg	
Mercury	0.39	mg/kg	
Thallium	0.35	mg/kg	

ASYss-026M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**7.8**	mg/kg	
Chromium	23	mg/kg	
Iron	**21000**	mg/kg	
Manganese	**220**	mg/kg	
Potassium	1400	mg/kg	
Sodium	340	mg/kg	
Vanadium	**21**	mg/kg	
Zinc	64	mg/kg	

ASYss-027M-SO

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**11**	mg/kg	
Beryllium	0.9	mg/kg	
Cadmium	0.11	mg/kg	
Chromium	22	mg/kg	
Copper	20	mg/kg	
Iron	**25000**	mg/kg	
Manganese	**340**	mg/kg	
Nickel	23	mg/kg	
Potassium	1400	mg/kg	
Sodium	370	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	75	mg/kg	

ASYss-027M-DUP

Analyte	Result	Units	Qualifier
Aluminum	**13000**	mg/kg	
Arsenic	**11**	mg/kg	
Cadmium	0.13	mg/kg	
Chromium	24	mg/kg	
Copper	19	mg/kg	
Iron	**24000**	mg/kg	
Manganese	**360**	mg/kg	
Nickel	22	mg/kg	
Potassium	1400	mg/kg	
Sodium	350	mg/kg	
Vanadium	**21**	mg/kg	
Zinc	74	mg/kg	

ASYss-034M-SO

Analyte	Result	Units	Qualifier
Aluminum	**12000**	mg/kg	
Arsenic	**5.5**	mg/kg	
Chromium	20	mg/kg	
Iron	**16000**	mg/kg	
Manganese	**440**	mg/kg	
Potassium	970	mg/kg	
Sodium	280	mg/kg	
Vanadium	**22**	mg/kg	
Zinc	68	mg/kg	
Mercury	0.042	mg/kg	

Legend

- Vegetation
- Streams/Ditches
- Road
- Steam Line Post
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Surface Soil (0-1 ft) Multi-increment Sample Location

Notes:

If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilogram (parts per million - ppm)

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Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-8D

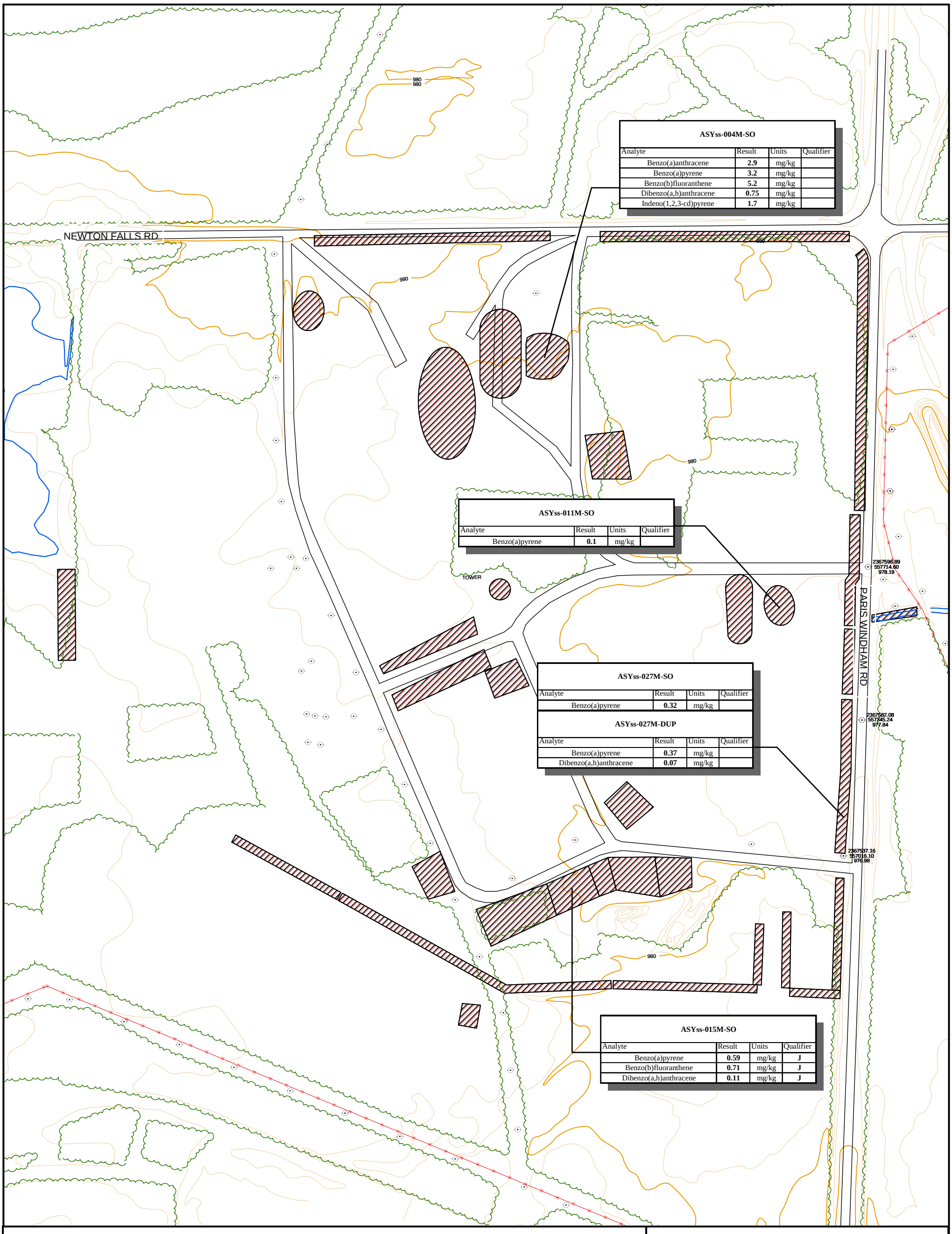
Atlas Scrap Yard

Soil Sample Location Exceedences - Inorganics

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S



Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Surface Soil (0-1 ft) Multi-increment Sample Location
- Fence

Notes:
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilogram (parts per million - ppm)

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Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-9

Atlas Scrap Yard

Soil Sample Location Exceedences - Organics

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S

NEWTON FALLS RD

PARIS WINDHAM RD

980

ASYsw-016-SW

Analyte	Result	Units	Qualifier
Barium	58	ug/l	
Calcium	93000	ug/l	
Magnesium	12000	ug/l	
Potassium	3500	ug/l	
Selenium	5.2	ug/l	
Antimony	3.2	ug/l	

ASYsw-005-SW

Analyte	Result	Units	Qualifier
Cadmium	0.26	ug/l	
Calcium	46000	ug/l	
Chromium	1.6	ug/l	
Selenium	3.4	ug/l	

ASYsw-014-SW

Analyte	Result	Units	Qualifier
Calcium	42000	ug/l	
Nickel	1.4	ug/l	
Lead	2	ug/l	

ASYsw-007-SW

Analyte	Result	Units	Qualifier
Chromium	1.7	ug/l	
Nickel	1.5	ug/l	
Vanadium	1.2	ug/l	
Lead	1	ug/l	

ASYsw-006-SW

Analyte	Result	Units	Qualifier
Chromium	1.4	ug/l	
Nickel	1.8	ug/l	
Selenium	3.6	ug/l	
Vanadium	1.5	ug/l	

ASYsw-003-SW

Analyte	Result	Units	Qualifier
Chromium	1.1	ug/l	
Nickel	2.1	ug/l	

ASYsw-008-SW

Analyte	Result	Units	Qualifier
Chromium	1.7	ug/l	
Lead	1.4	ug/l	

ASYsd-008-SD

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**9.9**	mg/kg	
Barium	150	mg/kg	
Beryllium	2	mg/kg	
Cadmium	0.49	mg/kg	
Calcium	42000	mg/kg	
Chromium	20	mg/kg	
Iron	**19000**	mg/kg	
Lead	48	mg/kg	
Magnesium	7200	mg/kg	
Manganese	**1000**	mg/kg	
Nickel	19	mg/kg	
Selenium	6.7	mg/kg	
Sodium	530	mg/kg	
Vanadium	**20**	mg/kg	
Mercury	0.12	mg/kg	

ASYsw-009-SW

Analyte	Result	Units	Qualifier
Chromium	1.2	ug/l	
Nickel	1.6	ug/l	

ASYsw-009-SW

Analyte	Result	Units	Qualifier
Benzo(a)pyrene	**0.1**	ug/l	**J**

ASYsw-010-SW

Analyte	Result	Units	Qualifier
Cadmium	0.26	ug/l	
Chromium	1.5	ug/l	
Vanadium	1.7	ug/l	
Arsenic	**0.76**	ug/l	
Lead	2.4	ug/l	

ASYsd-010-SD

Analyte	Result	Units	Qualifier
Aluminum	**9800**	mg/kg	
Arsenic	**8**	mg/kg	
Beryllium	0.8	mg/kg	
Cadmium	2	mg/kg	
Calcium	9000	mg/kg	
Chromium	26	mg/kg	
Copper	51	mg/kg	
Iron	**11000**	mg/kg	
Lead	66	mg/kg	
Nickel	25	mg/kg	
Selenium	14	mg/kg	
Vanadium	**56**	mg/kg	
Mercury	0.2	mg/kg	

ASYsd-010-SD

Analyte	Result	Units	Qualifier
Benzo(a)anthracene	**10**	mg/kg	**J**

ASYsw-011-SW

Analyte	Result	Units	Qualifier
Calcium	51000	ug/l	
Chromium	1.1	ug/l	
Lead	1.7	ug/l	

ASYsd-011-SD

Analyte	Result	Units	Qualifier
Aluminum	**9100**	mg/kg	
Arsenic	**29**	mg/kg	
Barium	**570**	mg/kg	
Beryllium	1.1	mg/kg	
Cadmium	0.79	mg/kg	
Calcium	15000	mg/kg	
Cobalt	**79**	mg/kg	
Copper	31	mg/kg	
Iron	**51000**	mg/kg	
Lead	77	mg/kg	
Manganese	**34000**	mg/kg	
Nickel	48	mg/kg	
Selenium	10	mg/kg	
Silver	1.3	mg/kg	
Sodium	500	mg/kg	
Vanadium	**32**	mg/kg	
Mercury	0.16	mg/kg	

ASYsw-012-SW

Analyte	Result	Units	Qualifier
Calcium	62000	ug/l	
Chromium	1.6	ug/l	
Lead	1.4	ug/l	

ASYsw-012-DUP

Analyte	Result	Units	Qualifier
Calcium	62000	ug/l	
Chromium	1.8	ug/l	
Vanadium	1.4	ug/l	
Lead	1.4	ug/l	

ASYsw-012-SW

Analyte	Result	Units	Qualifier
Indeno(1,2,3-cd)pyrene	**0.2**	ug/l	**J**

ASYsd-012-SD

Analyte	Result	Units	Qualifier
Aluminum	**15000**	mg/kg	
Arsenic	**11**	mg/kg	
Barium	160	mg/kg	
Beryllium	1.6	mg/kg	
Cadmium	0.62	mg/kg	
Calcium	13000	mg/kg	
Chromium	21	mg/kg	
Cobalt	9.2	mg/kg	
Copper	31	mg/kg	
Iron	**24000**	mg/kg	
Lead	66	mg/kg	
Magnesium	3900	mg/kg	
Manganese	**840**	mg/kg	
Nickel	30	mg/kg	
Selenium	6.8	mg/kg	
Sodium	550	mg/kg	
Vanadium	**31**	mg/kg	
Mercury	0.23	mg/kg	

ASYsd-012-DUP

Analyte	Result	Units	Qualifier
Aluminum	**14000**	mg/kg	
Arsenic	**13**	mg/kg	
Barium	160	mg/kg	
Beryllium	1.5	mg/kg	
Cadmium	0.68	mg/kg	
Calcium	11000	mg/kg	
Chromium	20	mg/kg	
Copper	31	mg/kg	
Iron	**24000**	mg/kg	
Lead	65	mg/kg	
Magnesium	3800	mg/kg	
Manganese	**800**	mg/kg	
Nickel	29	mg/kg	
Selenium	7.2	mg/kg	
Sodium	530	mg/kg	
Vanadium	**29**	mg/kg	
Mercury	0.22	mg/kg	

Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Steam Line Post
- Sediment/Surface Water Sewer Sample Locations

Notes:

U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilogram (parts per million - ppm)
ug/l - micrograms per liter (parts per billion - ppb)

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-10A

Atlas Scrap Yard

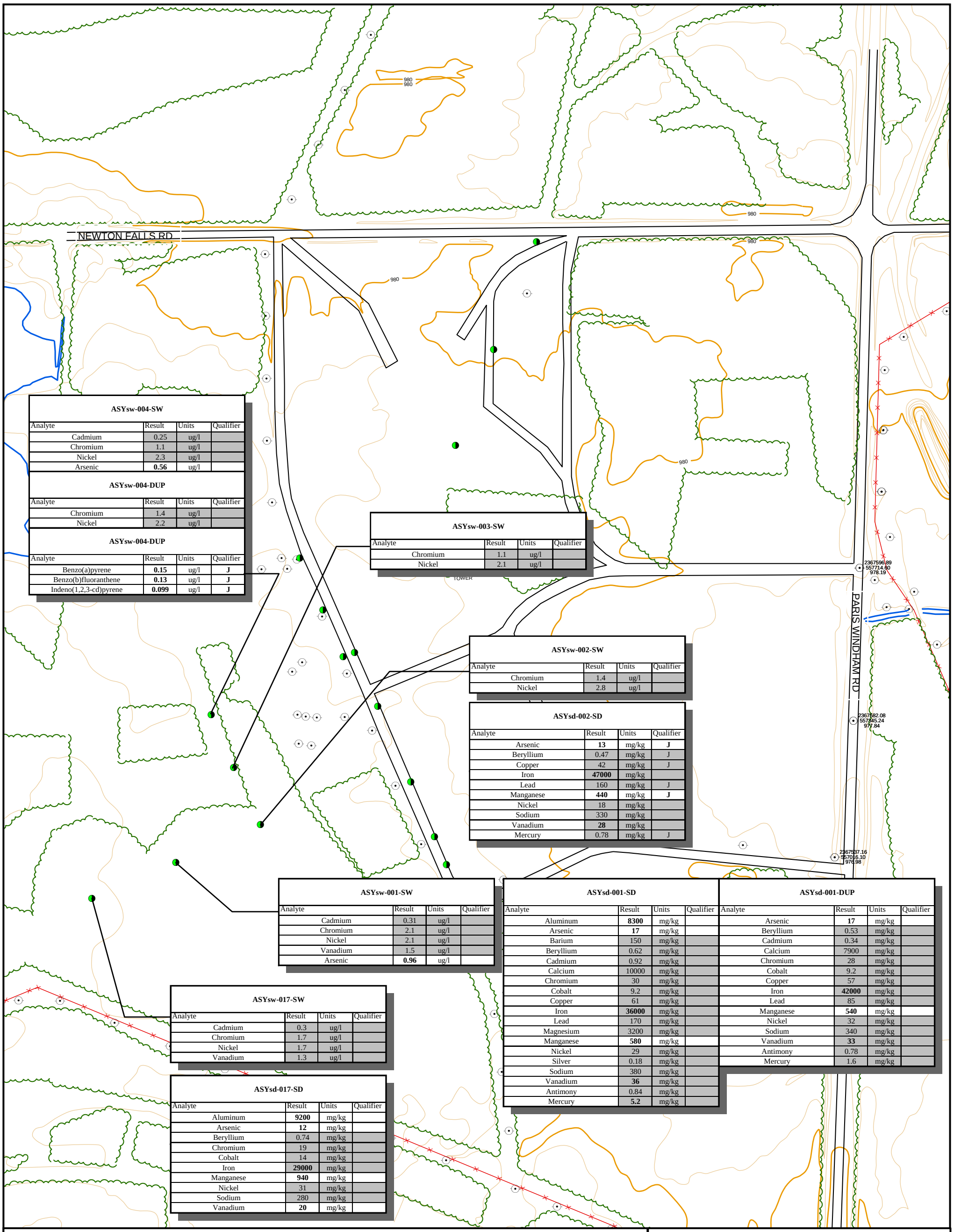
Surface Water and Sediment

Sample Location Exceedences

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S



ASYsw-004-SW

Analyte	Result	Units	Qualifier
Cadmium	0.25	ug/l	
Chromium	1.1	ug/l	
Nickel	2.3	ug/l	
Arsenic	**0.56**	ug/l	

ASYsw-004-DUP

Analyte	Result	Units	Qualifier
Chromium	1.4	ug/l	
Nickel	2.2	ug/l	

ASYsw-004-DUP

Analyte	Result	Units	Qualifier
Benzo(a)pyrene	**0.15**	ug/l	**J**
Benzo(b)fluoranthene	**0.13**	ug/l	**J**
Indeno(1,2,3-cd)pyrene	**0.099**	ug/l	**J**

ASYsw-003-SW

Analyte	Result	Units	Qualifier
Chromium	1.1	ug/l	
Nickel	2.1	ug/l	

ASYsw-002-SW

Analyte	Result	Units	Qualifier
Chromium	1.4	ug/l	
Nickel	2.8	ug/l	

ASYsd-002-SD

Analyte	Result	Units	Qualifier
Arsenic	**13**	mg/kg	**J**
Beryllium	0.47	mg/kg	J
Copper	42	mg/kg	J
Iron	**47000**	mg/kg	
Lead	160	mg/kg	J
Manganese	**440**	mg/kg	**J**
Nickel	18	mg/kg	
Sodium	330	mg/kg	
Vanadium	**28**	mg/kg	
Mercury	0.78	mg/kg	J

ASYsw-001-SW

Analyte	Result	Units	Qualifier
Cadmium	0.31	ug/l	
Chromium	2.1	ug/l	
Nickel	2.1	ug/l	
Vanadium	1.5	ug/l	
Arsenic	**0.96**	ug/l	

ASYsd-001-SD

Analyte	Result	Units	Qualifier
Aluminum	**8300**	mg/kg	
Arsenic	**17**	mg/kg	
Barium	150	mg/kg	
Beryllium	0.62	mg/kg	
Cadmium	0.92	mg/kg	
Calcium	10000	mg/kg	
Chromium	30	mg/kg	
Cobalt	9.2	mg/kg	
Copper	61	mg/kg	
Iron	**36000**	mg/kg	
Lead	170	mg/kg	
Magnesium	3200	mg/kg	
Manganese	**580**	mg/kg	
Nickel	29	mg/kg	
Silver	0.18	mg/kg	
Sodium	380	mg/kg	
Vanadium	**36**	mg/kg	
Antimony	0.84	mg/kg	
Mercury	**5.2**	mg/kg	

ASYsd-001-DUP

Analyte	Result	Units	Qualifier
Arsenic	**17**	mg/kg	
Beryllium	0.53	mg/kg	
Cadmium	0.34	mg/kg	
Calcium	7900	mg/kg	
Chromium	28	mg/kg	
Cobalt	9.2	mg/kg	
Copper	57	mg/kg	
Iron	**42000**	mg/kg	
Lead	85	mg/kg	
Manganese	**540**	mg/kg	
Nickel	32	mg/kg	
Sodium	340	mg/kg	
Vanadium	**33**	mg/kg	
Antimony	0.78	mg/kg	
Mercury	1.6	mg/kg	

ASYsw-017-SW

Analyte	Result	Units	Qualifier
Cadmium	0.3	ug/l	
Chromium	1.7	ug/l	
Nickel	1.7	ug/l	
Vanadium	1.3	ug/l	

ASYsd-017-SD

Analyte	Result	Units	Qualifier
Aluminum	**9200**	mg/kg	
Arsenic	**12**	mg/kg	
Beryllium	0.74	mg/kg	
Chromium	19	mg/kg	
Cobalt	14	mg/kg	
Iron	**29000**	mg/kg	
Manganese	**940**	mg/kg	
Nickel	31	mg/kg	
Sodium	280	mg/kg	
Vanadium	**20**	mg/kg	

Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Steam Line Post
- Sediment/Surface Water Sewer Sample Locations

Notes:
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.
mg/kg - milligrams per kilogram (parts per million - ppm)
ug/l - micrograms per liter (parts per billion - ppb)

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-10B

Atlas Scrap Yard

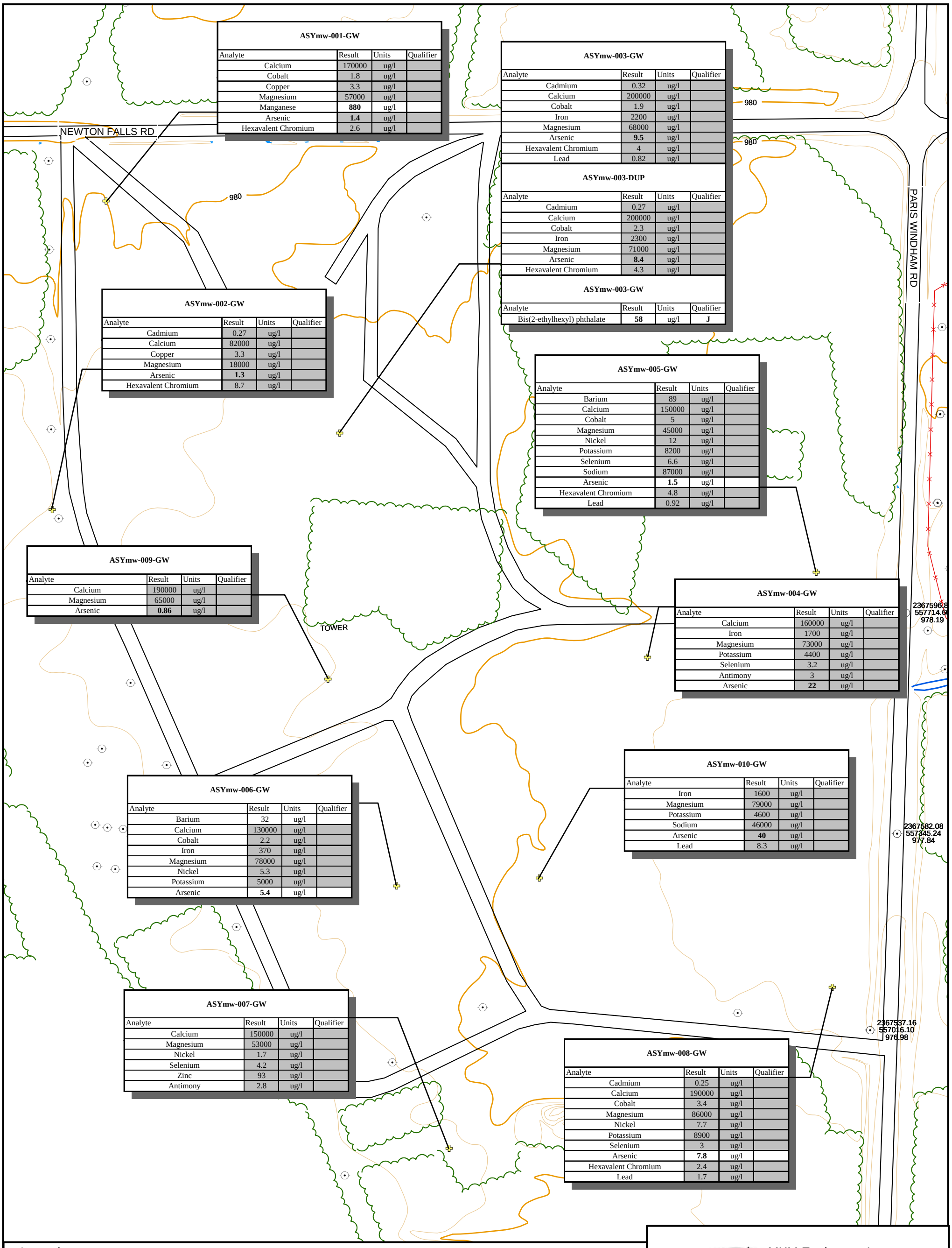
Surface Water and Sediment

Sample Location Exceedences

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S



ASYmw-001-GW

Analyte	Result	Units	Qualifier
Calcium	170000	ug/l	
Cobalt	1.8	ug/l	
Copper	3.3	ug/l	
Magnesium	57000	ug/l	
Manganese	**880**	ug/l	
Arsenic	**1.4**	ug/l	
Hexavalent Chromium	2.6	ug/l	

ASYmw-003-GW

Analyte	Result	Units	Qualifier
Cadmium	0.32	ug/l	
Calcium	200000	ug/l	
Cobalt	1.9	ug/l	
Iron	2200	ug/l	
Magnesium	68000	ug/l	
Arsenic	**9.5**	ug/l	
Hexavalent Chromium	4	ug/l	
Lead	0.82	ug/l	

ASYmw-003-DUP

Analyte	Result	Units	Qualifier
Cadmium	0.27	ug/l	
Calcium	200000	ug/l	
Cobalt	2.3	ug/l	
Iron	2300	ug/l	
Magnesium	71000	ug/l	
Arsenic	**8.4**	ug/l	
Hexavalent Chromium	4.3	ug/l	

ASYmw-003-GW

Analyte	Result	Units	Qualifier
Bis(2-ethylhexyl) phthalate	**58**	ug/l	**J**

ASYmw-002-GW

Analyte	Result	Units	Qualifier
Cadmium	0.27	ug/l	
Calcium	82000	ug/l	
Copper	3.3	ug/l	
Magnesium	18000	ug/l	
Arsenic	**1.3**	ug/l	
Hexavalent Chromium	8.7	ug/l	

ASYmw-005-GW

Analyte	Result	Units	Qualifier
Barium	89	ug/l	
Calcium	150000	ug/l	
Cobalt	5	ug/l	
Magnesium	45000	ug/l	
Nickel	12	ug/l	
Potassium	8200	ug/l	
Selenium	6.6	ug/l	
Sodium	87000	ug/l	
Arsenic	**1.5**	ug/l	
Hexavalent Chromium	4.8	ug/l	
Lead	0.92	ug/l	

ASYmw-009-GW

Analyte	Result	Units	Qualifier
Calcium	190000	ug/l	
Magnesium	65000	ug/l	
Arsenic	**0.86**	ug/l	

ASYmw-004-GW

Analyte	Result	Units	Qualifier
Calcium	160000	ug/l	
Iron	1700	ug/l	
Magnesium	73000	ug/l	
Potassium	4400	ug/l	
Selenium	3.2	ug/l	
Antimony	3	ug/l	
Arsenic	**22**	ug/l	

ASYmw-010-GW

Analyte	Result	Units	Qualifier
Iron	1600	ug/l	
Magnesium	79000	ug/l	
Potassium	4600	ug/l	
Sodium	46000	ug/l	
Arsenic	**40**	ug/l	
Lead	8.3	ug/l	

ASYmw-006-GW

Analyte	Result	Units	Qualifier
Barium	32	ug/l	
Calcium	130000	ug/l	
Cobalt	2.2	ug/l	
Iron	370	ug/l	
Magnesium	78000	ug/l	
Nickel	5.3	ug/l	
Potassium	5000	ug/l	
Arsenic	**5.4**	ug/l	

ASYmw-007-GW

Analyte	Result	Units	Qualifier
Calcium	150000	ug/l	
Magnesium	53000	ug/l	
Nickel	1.7	ug/l	
Selenium	4.2	ug/l	
Zinc	93	ug/l	
Antimony	2.8	ug/l	

ASYmw-008-GW

Analyte	Result	Units	Qualifier
Cadmium	0.25	ug/l	
Calcium	190000	ug/l	
Cobalt	3.4	ug/l	
Magnesium	86000	ug/l	
Nickel	7.7	ug/l	
Potassium	8900	ug/l	
Selenium	3	ug/l	
Arsenic	**7.8**	ug/l	
Hexavalent Chromium	2.4	ug/l	
Lead	1.7	ug/l	

Legend

- Vegetation
- Streams/Ditches
- Road
- 10 ft Contour Lines
- 2 ft Contour Lines
- Fence
- Steam Line Post
- Monitoring Well Locations
- Existing Monitoring Well Locations

Notes:

U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style.
Result < PRG & Background, then the value is presented with a normal style.

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Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-11

Atlas Scrap Yard

Groundwater Sample Location Exceedences

Drawn By:	Revised By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	SAB	MGS	16 July 06	04-02-0030

0 75 150 300 Feet

N W E S

NEWTON FALLS RD

PARIS WINDHAM RD

ASYmw-001
971.99

ASYmw-002
973.09

ASYmw-003
971.97

ASYmw-004
972.70

ASYmw-005
973.38

ASYmw-006
971.15

ASYmw-007
970.97

ASYmw-008
974.50

ASYmw-009
972.24

ASYmw-010
970.93

980

972

973

974

971

Legend

- Monitoring Well Locations
- Steam Line Post
- Potentiometric Surface
- Road
- Potentiometric Surface (Inferred)
- 10 ft Contour Line
- Direction of GW Flow
- 2 ft Contour Line
- Vegetation

Mapping Provided By: ARCADIS

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Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-12

Atlas Scrap Yard

Potentiometric Suface Map A

(February 2005)

Drawn By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	MAL	30 June 05	04-09-0020

0 75 150 300 Feet

N W E S

NEWTON FALLS RD

PARIS WINDHAM RD

ASYmw-001
972.38

ASYmw-002
973.93

ASYmw-003
972.41

ASYmw-004
972.36

ASYmw-005
970.70

ASYmw-006
971.51

ASYmw-007
971.26

ASYmw-008
974.60

ASYmw-009
972.75

ASYmw-010
971.40

980

973

972

971

974

Legend

- Monitoring Well Locations
- Steam Line Post
- Potentiometric Surface
- Road
- Potentiometric Surface (Inferred)
- 10 ft Contour Line
- Direction of GW Flow
- 2 ft Contour Line
- Vegetation

Mapping Provided By: ARCADIS

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-13

Atlas Scrap Yard

Potentiometric Suface Map B

(March 2005)

Drawn By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	MAL	30 June 05	04-09-0020

0 75 150 300 Feet

N W E S

NEWTON FALLS RD

PARIS WINDHAM RD

ASYmw-001
972.68

ASYmw-002
974.39

ASYmw-003
972.71

ASYmw-004
972.56

ASYmw-005
973.95

ASYmw-006
971.86

ASYmw-007
971.66

ASYmw-008
974.65

ASYmw-009
973.10

ASYmw-010
971.70

980

973

974

972

Legend

- Monitoring Well Locations
- Steam Line Post
- Potentiometric Surface
- Road
- Potentiometric Surface (Inferred)
- 10 ft Contour Line
- Direction of GW Flow
- 2 ft Contour Line
- Vegetation

Mapping Provided By: ARCADIS

MKM Engineers, Inc.
4153 Bluebonnett Drive
Stafford, TX 77477

Ravenna Army Ammunition Plant

Ravenna, Ohio

Figure ASY-14

Atlas Scrap Yard

Potentiometric Suface Map C

(April 2005)

Drawn By:	Checked By:	Date Drawn:	Project No.:
R. Haverkos	MAL	30 June 05	04-09-0020

0 75 150 300 Feet

N W E S

Table ASY-1
Atlas Scrap Yard Summary of Sampling and Analysis
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

SAMPLE PREFIX		VOC	SVOC	Explosives	Propellants	TAL Metals	Chrome +6	Pesticides	PCB	Cyanides	TPH GRO/ DRO	TOC	Geo-Tech Analysis	Grain Size	FIELD QA/QC SAMPLES					
ASY	SAMPLE ID	8260B	8270C	8330	3532/8330	6010/7000	7196A	8081A	8082B	9010A/9012A	8015	EPA 415.1	(Various)	ASTM D422	Multi-Incremental QA	Duplicate Sample	Equipment Blank	Trip Blank	MS/MSD	USACE Split
MULTI-INCREMENTAL SOILS																				
RCC Pipes	SS-001M			1		1														
Railroad Ballast	SS-002M			1		1														
Railroad Ties	SS-003M			1		1														
Concrete Rubble	SS-004M	1	1	1	1	1		1	1											
Service Station #1	SS-005M	1		1		1	1													
Surface Soils	SS-006M			1		1														
	SS-007M			1		1										1			1	1
	SS-008M			1		1														
	SS-009M			1		1														
Railroad Ballast	SS-010M			1		1														
Chipped Ammo Boxes	SS-011M		1-PCP	1		1														
Service Station #2	SS-012M	1		1		1	1								1					
Tar Cleaning Tank	SS-013M	1		1		1														
Surface Soils	SS-014M			1		1														
	SS-015M	1	1	1	1	1		1	1											
	SS-016M			1		1														
	SS-017M			1		1										1				1
	SS-018M			1		1														
Incinerator	SS-019M			1		1														
Dry-Ditch Soils	SS-020M			1		1														
	SS-021M			1		1										1				1
	SS-022M			1		1									1					
	SS-023M			1		1														
Taken as SD	SS-024M			1		1						1		1						
	SS-025M			1		1														
	SS-026M			1		1											1			
	SS-027M	1	1	1	1	1		1	1							1				1
	SS-028M			1		1														
	SS-029M			1		1														
	SS-030M			1		1														
	SS-031M			1		1														
	SS-032M			1		1														
	SS-033M			1		1														
	SS-034M			1		1														
		6	3	34	3	34	2	3	3	0	0	1	0	1	2	4	1	0	1	4
GROUNDWATER	MW-001	1	1	1	1	1	1	1	1				1	1						
	MW-002	1	1	1	1	1	1	1	1											
	MW-003	1	1	1	1	1	1	1	1							1			1	1
	MW-004	1	1	1	1	1	1	1	1				1	1						
	MW-005	1	1	1	1	1	1	1	1											
	MW-006	1	1	1	1	1	1	1	1											
	MW-007	1	1	1	1	1	1	1	1				1	1						
	MW-008	1	1	1	1	1	1	1	1											
	MW-009	1	1	1	1	1	1	1	1								1			
	MW-010	1	1	1	1	1	1	1	1											
		10	10	10	10	10	10	10	10	0	0	0	3	3	0	1	1	0	1	1

Table ASY-1
Atlas Scrap Yard Summary of Sampling and Analysis
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

SAMPLE PREFIX		VOC	SVOC	Explosives	Propellants	TAL Metals	Chrome +6	Pesticides	PCB	Cyanides	TPH GRO/ DRO	TOC	Geo-Tech Analysis	Grain Size	FIELD QA/QC SAMPLES				
ASY	SAMPLE ID	8260B	8270C	8330	3532/8330	6010/7000	7196A	8081A	8082B	9010A/9012A	8015	EPA 415.1	(Various)	ASTM D422	Multi-Incremental QA	Duplicate Sample	Equipment Blank	Trip Blank	MS/MSD	USACE Split
SURFACE WATER	SW-001	1	1	1	1	1		1	1											
Sanitary Sewers	SW-002	1	1	1	1	1		1	1											
	SW-003	1	1	1	1	1		1	1											
	SW-004	1	1	1	1	1		1	1							1			1	1
	SW-005	1	1	1	1	1		1	1											
	SW-006	1	1	1	1	1		1	1											
	SW-007	1	1	1	1	1		1	1											
	SW-008	1	1	1	1	1		1	1								1			
	SW-009	1	1	1	1	1		1	1											
	SW-010	1	1	1	1	1		1	1											
	SW-011	1	1	1	1	1		1	1											
	SW-012	1	1	1	1	1		1	1							1				1
	SW-013	*Cannot locate*																		
	SW-014	1	1	1	1	1		1	1											
	SW-015	*No lid/ and filled with debris*																		
	SW-016	1	1	1	1	1		1	1											
	SW-017	1	1	1	1	1		1	1											
		15	15	15	15	15	0	15	15	0	0	0	0	0	0	2	1	0	1	
SEDIMENT	SD-001			1		1										1				1
Sanitary Sewers	SD-002			1		1													1	
	SD-003	*No sample (no sediment)*																		
	SD-004	*No sample (no sediment)*																		
	SD-005	*No sample (no sediment)*																		
	SD-006	*No sample (no sediment)*																		
	SD-007	*No sample (no sediment)*																		
	SD-008			1		1														
	SD-009	*No sample (no sediment)*																		
	SD-010	1	1	1	1	1		1	1											
	SD-011			1		1					1									
	SD-012			1		1					1					1				1
	SD-013	*Cannot locate*																		
	SD-014	*No sample (no sediment)*																		
	SD-015	*No lid/ and filled with debris*																		
	SD-016	*No sample (no sediment)*																		
	SD-017			1		1														
		1	1	7	1	7	0	1	1	0	0	0	0	0	0	2	0	0	1	2

Notes:

Blank cell indicates that either the sample was not analyzed for that compound and/or the sample did not have a QC or Split sample associated with the regular sample.

Geo-tech analysis consists of Moisture Content (ASTM D2216), Atterburg Limits (ASTM D4318), UCS (ASTM D2487), pH (EPA 150.1) & Specific Gravity (ASTM D854)

Grainsize and TOC are taken at "all major drainageway" sediments

All shelby tubes taken during MW installatinons will have full geo-tech and grainsize analyses

PCPs need to be added to SVOC sample for Ammuntion Box pile

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO
						Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004
						Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units														
Metals	6010B	Aluminum	7614	nc	17700	mg/kg	**24000**	**17000**	**22000**		**15000**		**14000**	**19000**	**12000**	**11000**	**16000**	**8100**	**13000**	**15000**
	6010B	Arsenic	0.39	ca	15.4	mg/kg	**5.9**	**8.9**	**6.5**		**11**		**6.3**	**6.8**	**9.1**	**9.8**	**10**	**7.3**	**6.9**	**4.8**
	6010B	Barium	538	nc	88.4	mg/kg	290	180	230		140		130	240	97	100	180	51	93	95
	6010B	Beryllium	15	nc	0.88	mg/kg	4.3	3.2	4.5		1.9		1.6	3.7	1	0.98	2.5	0.54	1	1.1
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.64	0.17	0.3		0.24		0.3	0.43	0.45	0.3	1.8	0.41		0.09
	6010B	Calcium	--[n]		15800	mg/kg	91000	67000	140000		50000		32000	86000	15000	16000	53000	6300	13000	17000
	6010B	Chromium	30	ca	17.4	mg/kg	17	23	19		20		13	28	16	14	22	12	20	18
	6010B	Cobalt	30	ca	10.4	mg/kg	3.3	4.7	3.4		6.2		4	2.8	7.6	7	5.9	3.9	7.6	4.2
	6010B	Copper	313	nc	17.7	mg/kg	13	16	15		38		8.6	13	15	15	33	17	8.8	11
	6010B	Iron	2346	nc	23100	mg/kg	**11000**	**18000**	**12000**		**17000**		**13000**	**12000**	**18000**	**17000**	**28000**	**14000**	**17000**	**14000**
	6010B	Lead	400	pbk	26.1	mg/kg	43	14	16		28		23	150	49	49	69	19	26	22
	6010B	Magnesium	--[n]		3030	mg/kg	14000	10000	14000		7100		5300	13000	3300	3000 J	8400	1900	3400	3800
	6010B	Manganese	176	nc	1450	mg/kg	**3500**	**1400**	**3100**		**1300**		**1000**	**2200**	**760**	**760**	**1400**	**250**	**730**	**520**
	6010B	Nickel	156	nc	21.1	mg/kg	9.4	17	11		17		8.8	11	14	13	17	11	14	12
	6010B	Potassium	--[n]		927	mg/kg	2300	1800	2200		1600		1300	1800	1200	1000 J	1600	950	1200	1100
	6010B	Selenium	39	nc	1.4	mg/kg	1.8	0.63	1.6				0.72	1.1	0.6		1.2	0.76		
	6010B	Silver	39	nc	0.00	mg/kg													0.76	
	6010B	Sodium	--[n]		123	mg/kg	930	780	1000		530		410	990	360	320	710	250	390	370
	6010B	Vanadium	7.8	nc	31.1	mg/kg	**11**	**14**	**12**		**16**		**15**	**13**	**19**	**17**	**15**	**15**	**20**	**20**
	6010B	Zinc	2346	nc	61.8	mg/kg	180	43	43		64		52	88	110	100	200	210	100	98
	7471A	Mercury	2.3	nc	0.04	mg/kg	0.05	0.039	0.022		0.053		0.055	0.047	0.052	0.055	0.092		0.095	0.28
	7841	Thallium	0.52	nc	0.00	mg/kg														
PCBs	8082	Aroclor 1260	0.22	ca	--	mg/kg					0.054									
	8270C	2-Methylnaphthalene	--		--	mg/kg					0.38									0.033 J
	8270C	4-Methylphenol	31	nc	--	mg/kg					0.016 J									0.015 J
	8270C	Acenaphthene	368	nc	--	mg/kg					0.18									
	8270C	Acenaphthylene	--		--	mg/kg					0.26									
	8270C	Anthracene	2189	nc	--	mg/kg					0.84									0.012 J
	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg					**2.9**									0.073
	8270C	Benzo(a)pyrene	0.062	ca	--	mg/kg					**3.2**									**0.1**
	8270C	Benzo(b)fluoranthene	0.62	ca	--	mg/kg					**5.2**									0.12
	8270C	Benzo(g,h,i)perylene	--		--	mg/kg					2.1									0.079
	8270C	Benzo(k)fluoranthene	6.2	ca	--	mg/kg					2.2									0.079
	8270C	Benzyl alcohol	1833	nc	--	mg/kg														
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg														1.5
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg														0.24
	8270C	Chrysene	62	ca	--	mg/kg					3.4									0.12
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg					**0.75**									
	8270C	Dibenzofuran	15	nc	--	mg/kg					0.14									
	8270C	Fluoranthene	229	nc	--	mg/kg					4.2									0.12
	8270C	Fluorene	275	nc	--	mg/kg					0.13									
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg					**1.7**									0.068
	8270C	Naphthalene	5.6	nc	--	mg/kg					0.31									0.028 J

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units														
	8270C	Phenanthrene	--	--	mg/kg					1.1									0.059
	8270C	Phenol	1833 nc	--	mg/kg														0.0083 J
	8270C	Pyrene	232 nc	--	mg/kg					4.5									0.14
Explosives	8330	2-Amino-4,6-Dinitrotoluene	--	--	mg/kg	0.046 J		0.069 J		0.29 J									
	8330	2-Nitrotoluene	0.88 ca	--	mg/kg														
	8330	3-Nitrotoluene	73 nc	--	mg/kg								0.091 J						
Propellants	353.2 Modified	Nitrocellulose	--	--	mg/kg					1.7									

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-012D-QA	ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO
						Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004
						Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units														
Metals	6010B	Aluminum	7614	nc	17700	mg/kg			**15000**	**13000**		20000	**13000**		**13000**	**14000**	**14000**	**13000**	**13000**	**11000**
	6010B	Arsenic	0.39	ca	15.4	mg/kg			**5**	**5.2**		**10**	**9.2**		**9.4**	**9.5**	**23**	**22**	**41**	**11**
	6010B	Barium	538	nc	88.4	mg/kg			120	110		210	81		79	92	180	160	180	280
	6010B	Beryllium	15	nc	0.88	mg/kg			1.8	1.5		3.7	0.84		0.8	0.93	2.7	2.5	2.1	0.71
	6010B	Cadmium	3.7	nc	0.00	mg/kg			0.29	0.32		0.84	0.14		0.15		0.89	0.88	1.4	**9.5**
	6010B	Calcium	--[n]		15800	mg/kg			43000	39000		83000	9200 J		11000	13000	80000	83000	88000	4800
	6010B	Chromium	30	ca	17.4	mg/kg			15	13		**34**	16		18	19	22	23	29	**64**
	6010B	Cobalt	30	ca	10.4	mg/kg			2	2.1		4	6.8		6.1	5.1	3.5	3.4	4.5	5.7
	6010B	Copper	313	nc	17.7	mg/kg			9.5	8.5		25	14		12	12	33	32	44	200
	6010B	Iron	2346	nc	23100	mg/kg			**9900**	**11000**		**14000**	**18000**		**20000**	**18000**	**16000**	**16000**	**19000**	**27000**
	6010B	Lead	400	pbk	26.1	mg/kg			31	31		97	26		28	34	110	110	160	**1200**
	6010B	Magnesium	--[n]		3030	mg/kg			6400	5400		12000	2800		2900	3300	8500	8000	7400	1800
	6010B	Manganese	176	nc	1450	mg/kg			**760**	**700**		**1900**	**710**		**360**	**450**	**1300**	**1300**	**1300**	**470**
	6010B	Nickel	156	nc	21.1	mg/kg			7.8	7.2		18	12		13	14	15	16	20	22
	6010B	Potassium	--[n]		927	mg/kg			1300	1300		1900	890 J		1000	1200	1600	1400	1500	1200
	6010B	Selenium	39	nc	1.4	mg/kg			1.1	0.89		0.98	0.84		0.55		1.4	1.3	0.72	0.99
	6010B	Silver	39	nc	0.00	mg/kg			3.2	4.8									5.2	0.62
	6010B	Sodium	--[n]		123	mg/kg			660	570		880	340		330	360	720	680	580	950
	6010B	Vanadium	7.8	nc	31.1	mg/kg			**12**	**13**		**12**	**21**		**22**	**21**	**11**	**10**	**12**	**19**
	6010B	Zinc	2346	nc	61.8	mg/kg			63	60		120	65		66	61	130	120	200	1800
	7471A	Mercury	2.3	nc	0.04	mg/kg			0.06	0.072		0.03	0.053		0.067	0.049	0.065	0.087	0.39	0.64
	7841	Thallium	0.52	nc	0.00	mg/kg				0.24							0.24		0.35	
PCBs	8082	Aroclor 1260	0.22	ca	--	mg/kg														
	8270C	2-Methylnaphthalene	--		--	mg/kg									0.022 J					
	8270C	4-Methylphenol	31	nc	--	mg/kg														
	8270C	Acenaphthene	368	nc	--	mg/kg									0.056 J					
	8270C	Acenaphthylene	--		--	mg/kg														
	8270C	Anthracene	2189	nc	--	mg/kg									0.1 J					
	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg									0.43 J					
	8270C	Benzo(a)pyrene	0.062	ca	--	mg/kg									**0.59 J**					
	8270C	Benzo(b)fluoranthene	0.62	ca	--	mg/kg									**0.71 J**					
	8270C	Benzo(g,h,i)perylene	--		--	mg/kg									0.48 J					
	8270C	Benzo(k)fluoranthene	6.2	ca	--	mg/kg									0.37 J					
	8270C	Benzyl alcohol	1833	nc	--	mg/kg									0.21 J					
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg									0.038 J					
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg														
	8270C	Chrysene	62	ca	--	mg/kg									0.44 J					
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg									**0.11 J**					
	8270C	Dibenzofuran	15	nc	--	mg/kg									0.023 J					
	8270C	Fluoranthene	229	nc	--	mg/kg									0.74 J					
	8270C	Fluorene	275	nc	--	mg/kg									0.05 J					
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg									0.38 J					
	8270C	Naphthalene	5.6	nc	--	mg/kg									0.018 J					

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-012D-QA	ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units														
	8270C	Phenanthrene	--	--	mg/kg									0.32 J					
	8270C	Phenol	1833 nc	--	mg/kg									0.033 J					
	8270C	Pyrene	232 nc	--	mg/kg									0.77 J					
Explosives	8330	2-Amino-4,6-Dinitrotoluene	--	--	mg/kg						0.091 J							0.095 J	
	8330	2-Nitrotoluene	0.88 ca	--	mg/kg						0.24							0.43	
	8330	3-Nitrotoluene	73 nc	--	mg/kg														
Propellants	353.2 Modified	Nitrocellulose	--	--	mg/kg														

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO	ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO	ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO
						Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004
						Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units														
Metals	6010B	Aluminum	7614	nc	17700	mg/kg	**14000**	**15000**	**15000**	**14000**	**15000**	**13000**	**14000**	**13000**			**13000**	**13000**	**13000**	**13000**
	6010B	Arsenic	0.39	ca	15.4	mg/kg	**11**	**15**	**13**	**12**	**14**	**11**	**12**	**7.8**			**11**	**11**	**13**	**9.2**
	6010B	Barium	538	nc	88.4	mg/kg	110	84	87	96	87	99	94	74			80	83	86	83
	6010B	Beryllium	15	nc	0.88	mg/kg	1.3	1.1	1	1.1	0.91	0.93	0.7	0.73			0.87	0.9	0.82	0.68
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.1		0.19	0.23	0.24	0.11					0.13	0.11		
	6010B	Calcium	--[n]		15800	mg/kg	21000	6900	6900	8700	4000	6200	1300	2700			2900	3000	2900	910
	6010B	Chromium	30	ca	17.4	mg/kg	22	22	22	19	23	22	21	23			24	22	20	18
	6010B	Cobalt	30	ca	10.4	mg/kg	6.4	13	13	10	12	7.4	9.1	6.4			9.4	9.3	10	4.8
	6010B	Copper	313	nc	17.7	mg/kg	13	19	20	17	20	17	12	13			19	20	20	9.7
	6010B	Iron	2346	nc	23100	mg/kg	**23000**	**28000**	**27000**	**26000**	**27000**	**21000**	**23000**	**21000**			**24000**	**25000**	**26000**	**21000**
	6010B	Lead	400	pbk	26.1	mg/kg	24	18	17	20	15	20	19	14			15	15	18	20
	6010B	Magnesium	--[n]		3030	mg/kg	3700	3300	3300	3300	3300	2400	2600	2100			2500	2500	2900	1400
	6010B	Manganese	176	nc	1450	mg/kg	**580**	**470**	**450**	**700**	**570**	**330**	**730**	**220**			**360**	**340**	**340**	95
	6010B	Nickel	156	nc	21.1	mg/kg	18	23	23	19	23	21	19	17			22	23	26	13
	6010B	Potassium	--[n]		927	mg/kg	1800	1500	1600	1500	1700	1000	1200	1400			1400	1400	1600	1200
	6010B	Selenium	39	nc	1.4	mg/kg	0.74	0.79		0.83	0.53	1.2	0.94	0.69			0.68	0.83		0.93
	6010B	Silver	39	nc	0.00	mg/kg														
	6010B	Sodium	--[n]		123	mg/kg	440	390	400	390	370	360	350	340			350	370	380	340
	6010B	Vanadium	7.8	nc	31.1	mg/kg	**20**	**24**	**23**	**25**	**25**	**19**	**25**	**21**			**21**	**22**	**21**	**22**
	6010B	Zinc	2346	nc	61.8	mg/kg	130	66	64	69	69	65	83	64			74	75	110	56
	7471A	Mercury	2.3	nc	0.04	mg/kg	0.035			0.036	0.031		0.065						0.033	0.074
	7841	Thallium	0.52	nc	0.00	mg/kg			0.25	0.21										
PCBs	8082	Aroclor 1260	0.22	ca	--	mg/kg														
	8270C	2-Methylnaphthalene	--		--	mg/kg											0.013 J	0.012 J		
	8270C	4-Methylphenol	31	nc	--	mg/kg														
	8270C	Acenaphthene	368	nc	--	mg/kg											0.018 J	0.018 J		
	8270C	Acenaphthylene	--		--	mg/kg											0.016 J	0.013 J		
	8270C	Anthracene	2189	nc	--	mg/kg											0.058	0.048		
	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg											0.33	0.29		
	8270C	Benzo(a)pyrene	0.062	ca	--	mg/kg											**0.37**	**0.32**		
	8270C	Benzo(b)fluoranthene	0.62	ca	--	mg/kg											0.5	0.45		
	8270C	Benzo(g,h,i)perylene	--		--	mg/kg											0.31	0.23		
	8270C	Benzo(k)fluoranthene	6.2	ca	--	mg/kg											0.21	0.16		
	8270C	Benzyl alcohol	1833	nc	--	mg/kg														
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg														
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg														
	8270C	Chrysene	62	ca	--	mg/kg											0.37	0.33		
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg											**0.07**	0.052		
	8270C	Dibenzofuran	15	nc	--	mg/kg											0.012 J	0.011 J		
	8270C	Fluoranthene	229	nc	--	mg/kg											0.64	0.59		
	8270C	Fluorene	275	nc	--	mg/kg											0.021 J	0.018 J		
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg											0.23	0.18		
	8270C	Naphthalene	5.6	nc	--	mg/kg											0.015 J	0.013 J		

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO	ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO	ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO
					Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units														
	8270C	Phenanthrene	--	--	mg/kg											0.22	0.21		
	8270C	Phenol	1833 nc	--	mg/kg														
	8270C	Pyrene	232 nc	--	mg/kg											0.6	0.55		
Explosives	8330	2-Amino-4,6-Dinitrotoluene	--	--	mg/kg														
	8330	2-Nitrotoluene	0.88 ca	--	mg/kg														
	8330	3-Nitrotoluene	73 nc	--	mg/kg														
Propellants	353.2 Modified	Nitrocellulose	--	--	mg/kg											1.2	1		

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
					Sample Date:	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units					
Metals	6010B	Aluminum	7614 nc	17700	mg/kg	**14000**	**14000**	**16000**	**15000**	**12000**
	6010B	Arsenic	0.39 ca	15.4	mg/kg	**10**	**12**	**11**	**8.4**	**5.5**
	6010B	Barium	538 nc	88.4	mg/kg	110	130	120	94	66
	6010B	Beryllium	15 nc	0.88	mg/kg	0.96	1.2	1.3	0.81	0.62
	6010B	Cadmium	3.7 nc	0.00	mg/kg	0.47	1.4	1.3	0.91	
	6010B	Calcium	--[n]	15800	mg/kg	1400	2800	3100	3800	1700
	6010B	Chromium	30 ca	17.4	mg/kg	19	18	19	21	20
	6010B	Cobalt	30 ca	10.4	mg/kg	5.8	16	19	8.7	7
	6010B	Copper	313 nc	17.7	mg/kg	17	31	25	20	8
	6010B	Iron	2346 nc	23100	mg/kg	**21000**	**22000**	**27000**	**20000**	**16000**
	6010B	Lead	400 pbk	26.1	mg/kg	38	41	33	43	16
	6010B	Magnesium	--[n]	3030	mg/kg	1700	2000	2400	2300	1900
	6010B	Manganese	176 nc	1450	mg/kg	160	**940**	**1700**	**570**	**440**
	6010B	Nickel	156 nc	21.1	mg/kg	15	25	31	23	17
	6010B	Potassium	--[n]	927	mg/kg	1200	1200	1400	1300	970
	6010B	Selenium	39 nc	1.4	mg/kg	0.46	1		0.68	
	6010B	Silver	39 nc	0.00	mg/kg					
	6010B	Sodium	--[n]	123	mg/kg	320	320	370	340	280
	6010B	Vanadium	7.8 nc	31.1	mg/kg	**22**	**22**	**26**	**22**	**22**
	6010B	Zinc	2346 nc	61.8	mg/kg	82	220	260	140	68
	7471A	Mercury	2.3 nc	0.04	mg/kg	0.079	0.083	0.066	0.099	0.042
	7841	Thallium	0.52 nc	0.00	mg/kg		0.26			
PCBs	8082	Aroclor 1260	0.22 ca	--	mg/kg					
	8270C	2-Methylnaphthalene	--	--	mg/kg					
	8270C	4-Methylphenol	31 nc	--	mg/kg					
	8270C	Acenaphthene	368 nc	--	mg/kg					
	8270C	Acenaphthylene	--	--	mg/kg					
	8270C	Anthracene	2189 nc	--	mg/kg					
	8270C	Benzo(a)anthracene	0.62 ca	--	mg/kg					
	8270C	Benzo(a)pyrene	0.062 ca	--	mg/kg					
	8270C	Benzo(b)fluoranthene	0.62 ca	--	mg/kg					
	8270C	Benzo(g,h,i)perylene	--	--	mg/kg					
	8270C	Benzo(k)fluoranthene	6.2 ca	--	mg/kg					
	8270C	Benzyl alcohol	1833 nc	--	mg/kg					
	8270C	Bis(2-ethylhexyl) phthalate	35 ca	--	mg/kg					
	8270C	Butylbenzyl phthalate	1222 nc	--	mg/kg					
	8270C	Chrysene	62 ca	--	mg/kg					
	8270C	Dibenzo(a,h)anthracene	0.062 ca	--	mg/kg					
	8270C	Dibenzofuran	15 nc	--	mg/kg					
	8270C	Fluoranthene	229 nc	--	mg/kg					
	8270C	Fluorene	275 nc	--	mg/kg					
	8270C	Indeno(1,2,3-cd)pyrene	0.62 ca	--	mg/kg					
	8270C	Naphthalene	5.6 nc	--	mg/kg					

Table ASY-2
Atlas Scrap Yard Summary of Surface Soil (0-1ft) Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
					Sample Date:	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units					
	8270C	Phenanthrene	--	--	mg/kg					
	8270C	Phenol	1833 nc	--	mg/kg					
	8270C	Pyrene	232 nc	--	mg/kg					
Explosives	8330	2-Amino-4,6-Dinitrotoluene	--	--	mg/kg					
	8330	2-Nitrotoluene	0.88 ca	--	mg/kg					
	8330	3-Nitrotoluene	73 nc	--	mg/kg					
Propellants	353.2 Modified	Nitrocellulose	--	--	mg/kg					

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-3
Atlas Scrap Yard Summary of Sediment Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
						Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
						Sample Depth:	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Sediment Background Criteria	Units										
Metals	6010B	Aluminum	7614	nc	13900	mg/kg	7000	**8300**	5100 J	**14000**	**9800**	**9100**	**14000**	**15000**	**9200**	**15000**
	6010B	Arsenic	0.39	ca	19.5	mg/kg	**17**	**17**	**13 J**	**9.9**	**8**	**29**	**13**	**11**	**12**	**10**
	6010B	Barium	538	nc	123	mg/kg	110	150	110	150	110	**570**	160	160	84	140
	6010B	Beryllium	15	nc	0.38	mg/kg	0.53	0.62	0.47 J	2	0.8	1.1	1.5	1.6	0.74	1.2
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.34	0.92		0.49	2	0.79	0.68	0.62		1.8
	6010B	Calcium	--[n]		5510	mg/kg	7900	10000	3100 J	42000	9000	15000	11000	13000	1700	5500
	6010B	Chromium	30	ca	18.1	mg/kg	28	30	18 J	20	26	17	20	21	19	20
	6010B	Cobalt	30	ca	9.1	mg/kg	9.2	9.2	6.8	7.8	6.9	**79**	9	9.2	14	7.3
	6010B	Copper	313	nc	27.6	mg/kg	57	61	42 J	23	51	31	31	31	20	31
	6010B	Iron	2346	nc	28200	mg/kg	**42000**	**36000**	**47000**	**19000**	**11000**	**51000**	**24000**	**24000**	**29000**	**17000**
	6010B	Lead	400	pbk	27.4	mg/kg	85	170	160 J	48	66	77	65	66	15	37
	6010B	Magnesium	--[n]		2760	mg/kg	2700	3200	1600 J	7200	1900	2400	3800	3900	2300	2100
	6010B	Manganese	176	nc	1950	mg/kg	**540**	**580**	**440 J**	**1000**	170	**34000**	**800**	**840**	**940**	**420**
	6010B	Nickel	156	nc	17.7	mg/kg	32	29	18	19	25	48	29	30	31	20
	6010B	Potassium	--[n]		1950	mg/kg	910	1100	550 J	1700	1400	1000	1700	1800	980	1400
	6010B	Selenium	39	nc	1.7	mg/kg				6.7	14	10	7.2	6.8		2.7
	6010B	Silver	39	nc	0.00	mg/kg		0.18				1.3				
	6010B	Sodium	--[n]		112	mg/kg	340	380	330	530		500	530	550	280	450
	6010B	Vanadium	7.8	nc	26.1	mg/kg	**33**	**36**	**28**	**20**	**56**	**32**	**29**	**31**	**20**	**24**
	6010B	Zinc	2346	nc	532	mg/kg	170	210	270 J	190	520	460	310	330	69	310
	7041	Antimony	3.1	nc	0.00	mg/kg	0.78	0.84								
	7471A	Mercury	2.3	nc	0.06	mg/kg	1.6	**5.2**	0.78 J	0.12	0.2	0.16	0.22	0.23	0.046	0.14
	7841	Thallium	0.52	nc	0.89	mg/kg			0.29							
PRG - preliminary	8260B	Acetone	1412	nc	--	mg/kg					0.71 J					
SVOCs	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg					**10 J**					
	8270C	Chrysene	62	ca	--	mg/kg					16					
	8270C	Pyrene	232	nc	--	mg/kg					62					
Explosives	8330	2-Amino-4,6-Dinitrotoluene	--		--	mg/kg			0.12 J							0.079 J

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style.

Table ASY-4
Atlas Scrap Yard Summary of Surface Water Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004
					Sample Depth:	4.6 ft.	5.4 ft.	6 ft.	8 ft.	8 ft.	2.8 ft.	3.5 ft.	3.5 ft.	6.1 ft.	3.9 ft.	2.5 ft	2.3 ft	2.4 ft.	2.4 ft.
Group	Method	Parameter	Region 9 PRG (Tap Water)		Surface Water Background Criteria	Units														
Metals	6010B	Aluminum	36499	nc	3370	ug/l	990	480	490	430	440	560	430	570	600	450	800	560	420	390
	6010B	Barium	2555	nc	47.5	ug/l	32	38	35	31	30	30	33	30	31	33	34	36	41	41
	6010B	Cadmium	18	nc	0.00	ug/l	0.31				0.25	0.26					0.26			
	6010B	Calcium	--[n]		41400	ug/l	23000	16000	27000	21000	21000	46000	39000	40000	36000	37000	41000	51000	62000	62000
	6010B	Chromium	109	nc	0.00	ug/l	2.1	1.4	1.1	1.4	1.1	1.6	1.4	1.7	1.7	1.2	1.5	1.1	1.8	1.6
	6010B	Copper	1460	nc	7.9	ug/l	3.8	2.7	2.6	2.5	2.3	2.4	2.2		2.2			3.1		2.4
	6010B	Iron	10950	nc	2560	ug/l	1600	1800	820	970	940	910	580	770	870	580	990	720	510	490
	6010B	Magnesium	--[n]		10800	ug/l	3000	2600	3600	3200	3200	4800	4600	4500	4000	4700	4500	5500	6300	6200
	6010B	Manganese	876	nc	391	ug/l	130	150	130	100	100	26	52	45	33	63	33	25	21	22
	6010B	Nickel	730	nc	0.00	ug/l	2.1	2.8	2.1	2.2	2.3		1.8	1.5		1.6				
	6010B	Potassium	--[n]		3170	ug/l	2100	1500	1600	1600	1600	2200	1700	2000	2000	1500	1800	2100	2100	2100
	6010B	Selenium	182	nc	0.00	ug/l						3.4	3.6							
	6010B	Sodium	--[n]		21300	ug/l	950	1200	1200	1200	1200	1200	1400	1100	1100	1600	1400	1200	1500	1500
	6010B	Vanadium	36	nc	0.00	ug/l	1.5						1.5	1.2			1.7		1.4	
	6010B	Zinc	10950	nc	42	ug/l														
	7041	Antimony	15	nc	0.00	ug/l														
	7060A	Arsenic	0.045	ca	3.2	ug/l	**0.96**				**0.56**						**0.76**			
	7421	Lead	15	mcl	0.00	ug/l								1	1.4		2.4	1.7	1.4	1.4
SVOCs	8270C	Acenaphthene	365	nc	--	ug/l														
	8270C	Anthracene	1825	nc	--	ug/l														
	8270C	Benzo(a)pyrene	0.0092	ca	--	ug/l				**0.15 J**						**0.1 J**				
	8270C	Benzo(b)fluoranthene	0.092	ca	--	ug/l				**0.13 J**										
	8270C	Benzo(k)fluoranthene	0.92	ca	--	ug/l				0.18 J						0.12 J				0.22 J
PRG - preliminary r	8270C	Carbazole	3.4	ca	--	ug/l														
	8270C	Chrysene	9.2	ca	--	ug/l														
	8270C	Dibenzofuran	12	nc	--	ug/l														
	8270C	Fluoranthene	1460	nc	--	ug/l														
	8270C	Fluorene	243	nc	--	ug/l														
	8270C	Indeno(1,2,3-cd)pyrene	0.092	ca	--	ug/l				**0.099 J**										**0.2 J**
	8270C	Naphthalene	6.2	nc	--	ug/l														
	8270C	Phenanthrene	--		--	ug/l														
	8270C	Pyrene	182	nc	--	ug/l														
Explosives	8330	4-Amino-2,6-Dinitrotoluene	--		--	ug/l														
Propellants	8332	Nitroglycerine	4.8	ca	--	ug/l										0.18 J				

Table ASY-4
Atlas Scrap Yard Summary of Surface Water Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004
					Sample Depth:	4.6 ft.	5.4 ft.	6 ft.	8 ft.	8 ft.	2.8 ft.	3.5 ft.	3.5 ft.	6.1 ft.	3.9 ft.	2.5 ft	2.3 ft	2.4 ft.	2.4 ft.
Group	Method	Parameter	Region 9 PRG (Tap Water)	Surface Water Background Criteria	Units														

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
ug/l - means micrograms per Liter (parts per billion - ppb)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-4
Atlas Scrap Yard Summary of Surface Water Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	surface	surface	6.03 ft.
Group	Method	Parameter	Region 9 PRG (Tap Water)	Surface Water Background Criteria	Units			
Metals	6010B	Aluminum	36499 nc	3370	ug/l	400	100	690
	6010B	Barium	2555 nc	47.5	ug/l	32	58	33
	6010B	Cadmium	18 nc	0.00	ug/l			0.3
	6010B	Calcium	--[n]	41400	ug/l	42000	93000	8800
	6010B	Chromium	109 nc	0.00	ug/l			1.7
	6010B	Copper	1460 nc	7.9	ug/l			
	6010B	Iron	10950 nc	2560	ug/l	480	350	840
	6010B	Magnesium	--[n]	10800	ug/l	5300	12000	1900
	6010B	Manganese	876 nc	391	ug/l	54	240	110
	6010B	Nickel	730 nc	0.00	ug/l	1.4		1.7
	6010B	Potassium	--[n]	3170	ug/l	1500	3500	1200
	6010B	Selenium	182 nc	0.00	ug/l		5.2	
	6010B	Sodium	--[n]	21300	ug/l	2000	3000	940
	6010B	Vanadium	36 nc	0.00	ug/l			1.3
	6010B	Zinc	10950 nc	42	ug/l	13	5.4	
	7041	Antimony	15 nc	0.00	ug/l		3.2	
	7060A	Arsenic	0.045 ca	3.2	ug/l			
	7421	Lead	15 mcl	0.00	ug/l	2		
SVOCs	8270C	Acenaphthene	365 nc	--	ug/l		1.8	
	8270C	Anthracene	1825 nc	--	ug/l		0.58 J	
	8270C	Benzo(a)pyrene	0.0092 ca	--	ug/l			
	8270C	Benzo(b)fluoranthene	0.092 ca	--	ug/l			
	8270C	Benzo(k)fluoranthene	0.92 ca	--	ug/l			
PRG - preliminary r	8270C	Carbazole	3.4 ca	--	ug/l		1.2 J	
	8270C	Chrysene	9.2 ca	--	ug/l		0.11 J	
	8270C	Dibenzofuran	12 nc	--	ug/l		1.1 J	
	8270C	Fluoranthene	1460 nc	--	ug/l		0.89 J	
	8270C	Fluorene	243 nc	--	ug/l		1.7	
	8270C	Indeno(1,2,3-cd)pyrene	0.092 ca	--	ug/l			
	8270C	Naphthalene	6.2 nc	--	ug/l		0.6 J	
	8270C	Phenanthrene	--	--	ug/l		1.3	
	8270C	Pyrene	182 nc	--	ug/l		0.49 J	
Explosives	8330	4-Amino-2,6-Dinitrotoluene	--	--	ug/l		0.25 J	
Propellants	8332	Nitroglycerine	4.8 ca	--	ug/l			

Table ASY-4
Atlas Scrap Yard Summary of Surface Water Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	surface	surface	6.03 ft.
Group	Method	Parameter	Region 9 PRG (Tap Water)	Surface Water Background Criteria	Units			
Notes:								

-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
ug/l - means micrograms per Liter (parts per billion - ppb)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-5
Atlas Scrap Yard Summary of Groundwater Detections
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
						Sample Date:	11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
						Sample Depth:	16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
						Description	C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)		Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											
Metals	6010B	Barium	2555	nc	82.1	256	ug/l	31	17	32	31	20	89	32	35	26	50	54
	6010B	Cadmium	18	nc	0.00	0.00	ug/l		0.27	0.27	0.32					0.25		
	6010B	Calcium	--[n]		115000	53100	ug/l	170000	82000	200000	200000	160000	150000	130000	150000	190000	190000	89000
	6010B	Chromium	109	nc	7.3	0.00	ug/l									1.4		
	6010B	Cobalt	730	nc	0.00	0.00	ug/l	1.8		2.3	1.9		5	2.2		3.4		
	6010B	Copper	1460	nc	0.00	0.00	ug/l	3.5	3.3									
	6010B	Iron	10950	nc	279	1430	ug/l	360		2300	2200	1700		370		270		1600
	6010B	Magnesium	--[n]		43300	15000	ug/l	57000	18000	71000	68000	73000	45000	78000	53000	86000	65000	79000
	6010B	Manganese	876	nc	1020	1340	ug/l	**880**	110	610	590	240	310	400	200	130	280	85
	6010B	Nickel	730	nc	0.00	83.4	ug/l	3.3		3.3	3.1		12	5.3	1.7	7.7		
	6010B	Potassium	--[n]		2890	5770	ug/l	3900	1600	3200	3200	4400	8200	5000	2700	8900	2100	4600
	6010B	Selenium	182	nc	0.00	0.00	ug/l					3.2	6.6		4.2	3		
	6010B	Sodium	--[n]		45700	51400	ug/l	8300	2800	24000	23000	45000	87000	40000	45000	33000	23000	46000
	6010B	Zinc	10950	nc	60.9	52.3	ug/l	12	6.8	11	11	5.4	8.2		93		4.4	8.4
	7041	Antimony	15	nc	0.00	0.00	ug/l					3			2.8			
	7060A	Arsenic	0.045	ca	11.7	0.00	ug/l	**1.4**	**1.3**	**8.4**	**9.5**	**22**	**1.5**	**5.4**		**7.8**	**0.86**	**40**
	7196A	Hexavalent Chromium	109	nc	0.00	0.00	ug/l	2.6	8.7	4.3	4		4.8			2.4		
	7421	Lead	15	mcl	0.00	0.00	ug/l				0.82		0.92			1.7		8.3
SVOCs	8270C	Bis(2-ethylhexyl) phthalate	4.8	ca	--	--	ug/l				**58 J**							

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analyte was a non-detect (with a "U" qualifier) or analysis was not performed
ug/l - means micrograms per Liter (parts per billion - ppb)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
UC/Filtered – GW sample was filtered for metals and taken from an unconsolidated MW
C/Filtered – GW sample was filtered for metals and taken from a consolidated (bedrock) MW
[n] - nutrient
U - analyte not detected
J - estimated value
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO	ASYss-012D-QA
						Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004
						Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units															
Metals	6010B	Aluminum	7614	nc	17700	mg/kg	**24000**	**17000**	**22000**		**15000**		**14000**	**19000**	**12000**	**11000**	**16000**	**8100**	**13000**	**15000**	
	6010B	Arsenic	0.39	ca	15.4	mg/kg	**5.9**	**8.9**	**6.5**		**11**		**6.3**	**6.8**	**9.1**	**9.8**	**10**	**7.3**	**6.9**	**4.8**	
	6010B	Barium	538	nc	88.4	mg/kg	290	180	230		140		130	240	97	100	180	51	93	95	
	6010B	Beryllium	15	nc	0.88	mg/kg	4.3	3.2	4.5		1.9		1.6	3.7	1	0.98	2.5	0.54	1	1.1	
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.64	0.17	0.3		0.24		0.3	0.43	0.45	0.3	1.8	0.31	0.135 U	0.09	
	6010B	Calcium	--[n]		15800	mg/kg	91000	67000	140000		50000		32000	86000	15000	16000	53000	6300	13000	17000	
	6010B	Chromium	30	ca	17.4	mg/kg	17	23	19		20		13	28	16	14	22	12	20	18	
	6010B	Cobalt	30	ca	10.4	mg/kg	3.3	4.7	3.4		6.2		4	2.8	7.6	7	5.9	3.9	7.6	4.2	
	6010B	Copper	313	nc	17.7	mg/kg	13	16	15		38		8.6	13	15	15	33	17	8.8	11	
	6010B	Iron	2346	nc	23100	mg/kg	**11000**	**18000**	**12000**		**17000**		**13000**	**12000**	**18000**	**17000**	**28000**	**14000**	**17000**	**14000**	
	6010B	Lead	400	pbk	26.1	mg/kg	43	14	16		28		23	150	49	49	69	19	26	22	
	6010B	Magnesium	--[n]		3030	mg/kg	14000	10000	14000		7100		5300	13000	3300	3000 J	8400	1900	3400	3800	
	6010B	Manganese	176	nc	1450	mg/kg	**3500**	**1400**	**3100**		**1300**		**1000**	**2200**	**760**	**760**	**1400**	**250**	**730**	**520**	
	6010B	Nickel	156	nc	21.1	mg/kg	9.4	17	11		17		8.8	11	14	13	17	11	14	12	
	6010B	Potassium	--[n]		927	mg/kg	2300	1800	2200		1600		1300	1800	1200	1000 J	1600	950	1200	1100	
	6010B	Selenium	39	nc	1.4	mg/kg	1.8	0.63	1.6		0.8 U		0.72	1.1	0.6	0.75 U	1.2	0.76	0.8 U	0.8 U	
	6010B	Silver	39	nc	0.00	mg/kg	0.55 U	0.55 U	0.5 U		0.5 U		0.485 U	0.55 U	0.5 U	0.495 U	0.5 U	0.55 U	0.76	0.5 U	
	6010B	Sodium	--[n]		123	mg/kg	930	780	1000		530		410	990	360	320	710	250	390	370	
	6010B	Vanadium	7.8	nc	31.1	mg/kg	**11**	**14**	**12**		**16**		**15**	**13**	**19**	**17**	**15**	**15**	**20**	**20**	
	6010B	Zinc	2346	nc	61.8	mg/kg	180	43	43		64		52	88	110	100	200	210	100	98	
	7041	Antimony	3.1	nc	0.96	mg/kg	0.75 U	0.75 U	0.6 U		0.75 U		0.75 U	0.8 U	0.75 U	- R	0.7 U	0.7 U	0.8 U	0.75 U	
	7196A	Hexavalent Chromium	30	ca	17.4	mg/kg							0.95 U								
	7471A	Mercury	2.3	nc	0.04	mg/kg	0.05	0.039	0.022		0.053		0.055	0.047	0.052	0.055	0.092	0.0235 U	0.095	0.28	
	7841	Thallium	0.52	nc	0.00	mg/kg	0.32 U	0.315 U	0.265 U		0.325 U		0.32 U	0.335 U	0.32 U	0.275 U	0.305 U	0.3 U	0.335 U	0.33 U	
Pesticides	8081A	4,4'-DDD	2.4	ca	--	mg/kg					0.0175 U										
	8081A	4,4'-DDE	1.7	ca	--	mg/kg					0.0205 U										
	8081A	4,4'-DDT	1.7	ca	--	mg/kg					0.0175 U										
	8081A	Aldrin	0.029	ca	--	mg/kg					0.0175 U										
	8081A	alpha-BHC	0.09	sat	--	mg/kg					0.0175 U										
	8081A	alpha-Chlordane	1.6	ca	--	mg/kg					0.0175 U										
	8081A	beta-BHC	0.32	ca	--	mg/kg					0.0175 U										
	8081A	delta-BHC	--		--	mg/kg					0.0175 U										
	8081A	Dieldrin	0.030	ca	--	mg/kg					0.0175 U										
	8081A	Endosulfan I	37	nc	--	mg/kg					0.0175 U										
	8081A	Endosulfan II	37	nc	--	mg/kg					0.0175 U										
	8081A	Endosulfan sulfate	37	nc	--	mg/kg					0.0175 U										
	8081A	Endrin	1.8	nc	--	mg/kg					0.0175 U										
	8081A	Endrin aldehyde	--		--	mg/kg					0.0175 U										
	8081A	Endrin ketone	--		--	mg/kg					0.0175 U										
	8081A	gamma-BHC	0.44	ca	--	mg/kg					0.0175 U										
	8081A	gamma-Chlordane	1.6	ca	--	mg/kg					0.0175 U										
	8081A	Heptachlor	0.11	ca	--	mg/kg					0.0175 U										
	8081A	Heptachlor epoxide	0.053	ca	--	mg/kg					0.0175 U										
	8081A	Methoxychlor	31	nc	--	mg/kg					0.085 U										
	8081A	Toxaphene	0.44	ca	--	mg/kg					0.175 U										

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO	ASYss-012D-QA
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004
					Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units															
PCBs	8082	Aroclor 1016	0.39	nc	--	mg/kg					0.017 U										
	8082	Aroclor 1221	0.22	ca	--	mg/kg					0.017 U										
	8082	Aroclor 1232	0.22	ca	--	mg/kg					0.0085 U										
	8082	Aroclor 1242	0.22	ca	--	mg/kg					0.017 U										
	8082	Aroclor 1248	0.22	ca	--	mg/kg					0.0085 U										
	8082	Aroclor 1254	0.22	ca	--	mg/kg					0.017 U										
	8082	Aroclor 1260	0.22	ca	--	mg/kg					0.054										
VOCs	8260B	1,1,1-Trichloroethane	1200	sat	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,1,2,2-Tetrachloroethane	0.41	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,1,2-Trichloroethane	0.73	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,1-Dichloroethane	51	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,1-Dichloroethene	12	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,2-Dibromoethane	0.032	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,2-Dichloroethane	0.28	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	1,2-Dichloroethene (total)	6.9	nc	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	1,2-Dichloropropane	0.34	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	2-Butanone	2231	nc	--	mg/kg				0.0095 U		0.0105 U									0.009 U
	8260B	2-Hexanone	530	nc	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	4-Methyl-2-pentanone	528	nc	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	Acetone	1412	nc	--	mg/kg				0.0095 U		0.0105 U									0.009 U
	8260B	Benzene	0.64	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Bromochloromethane	--		--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Bromodichloromethane	0.82	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Bromoform	62	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Bromomethane	0.39	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Carbon disulfide	36	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Carbon tetrachloride	0.25	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Chlorobenzene	15	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Chloroethane	3.0	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Chloroform	0.22	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Chloromethane	4.7	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	cis-1,2-Dichloroethene	4.3	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	cis-1,3-Dichloropropene	0.78	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Dibromochloromethane	1.1	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Ethylbenzene	395	sat	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	m&p-Xylenes	27	nc	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	Methylene chloride	9.1	ca	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	o-Xylene	27	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Styrene	1700	sat	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Tetrachloroethene	0.48	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Toluene	520	sat	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Total Xylenes	27	nc	--	mg/kg				0.006 U		0.007 U									0.006 U
	8260B	trans-1,2-Dichloroethene	6.9	nc	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	trans-1,3-Dichloropropene	0.78	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Trichloroethene	0.053	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U
	8260B	Vinyl chloride	0.079	ca	--	mg/kg				0.0031 U		0.00345 U									0.00305 U

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO	ASYss-012D-QA
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004
					Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units															
SVOCs	8270C	1,2,4-Trichlorobenzene	6.2	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	1,2-Dichlorobenzene	600	sat	--	mg/kg					0.085 U									0.09 U	
	8270C	1,3-Dichlorobenzene	53	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	1,4-Dichlorobenzene	3.4	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	2,2-oxybis (1-chloropropane)	2.9	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	2,4,5-Trichlorophenol	611	nc	--	mg/kg					0.17 U									0.175 U	
	8270C	2,4,6-Trichlorophenol	0.61	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	2,4-Dichlorophenol	18	nc	--	mg/kg					0.17 U									0.175 U	
	8270C	2,4-Dimethylphenol	122	nc	--	mg/kg					0.17 U									0.175 U	
	8270C	2,4-Dinitrophenol	12	nc	--	mg/kg					- R									0.36 U	
	8270C	2,4-Dinitrotoluene	12	nc	--	mg/kg					0.017 U									0.0175 U	
	8270C	2,6-Dinitrotoluene	6.1	nc	--	mg/kg					0.017 U									0.0175 U	
	8270C	2-Chloronaphthalene	494	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	2-Chlorophenol	6.3	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	2-Methylnaphthalene	--		--	mg/kg					0.38									0.033 J	
	8270C	2-Methylphenol	306	nc	--	mg/kg					0.0345 U									0.036 U	
	8270C	2-Nitroaniline	18.3	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	2-Nitrophenol	--		--	mg/kg					0.17 U									0.175 U	
	8270C	3,3'-Dichlorobenzidine	1.1	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	3-Nitroaniline	1.8	nc	--	mg/kg					0.345 U									0.36 U	
	8270C	4,6-Dinitro-2-methylphenol	0.61	nc	--	mg/kg					0.345 U									0.36 U	
	8270C	4-Bromophenyl phenyl ether	--		--	mg/kg					0.085 U									0.09 U	
	8270C	4-Chloro-3-methylphenol	--		--	mg/kg					0.17 U									0.175 U	
	8270C	4-Chloroaniline	24	nc	--	mg/kg					0.345 U									0.36 U	
	8270C	4-Chlorophenyl phenyl ether	--		--	mg/kg					0.085 U									0.09 U	
	8270C	4-Methylphenol	31	nc	--	mg/kg					0.016 J									0.015 J	
	8270C	4-Nitroaniline	23	ca	--	mg/kg					0.345 U									0.36 U	
	8270C	4-Nitrophenol	--		--	mg/kg					0.345 U									0.36 U	
	8270C	Acenaphthene	368	nc	--	mg/kg					0.18									0.0175 U	
	8270C	Acenaphthylene	--		--	mg/kg					0.26									0.0175 U	
	8270C	Anthracene	2189	nc	--	mg/kg					0.84									0.012 J	
	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg					**2.9**									0.073	
	8270C	Benzo(a)pyrene	0.062	ca	--	mg/kg					**3.2**									**0.1**	
	8270C	Benzo(b)fluoranthene	0.62	ca	--	mg/kg					**5.2**									0.12	
	8270C	Benzo(g,h,i)perylene	--		--	mg/kg					2.1									0.079	
	8270C	Benzo(k)fluoranthene	6.2	ca	--	mg/kg					2.2									0.079	
	8270C	Benzoic acid	100000	max	--	mg/kg					- R									- R	
	8270C	Benzyl alcohol	1833	nc	--	mg/kg					0.345 U									0.36 U	
	8270C	Bis(2-chloroethoxy)methane	--		--	mg/kg					0.0345 U									0.036 U	
	8270C	Bis(2-chloroethyl) ether	0.22	ca	--	mg/kg					0.0345 U									0.036 U	
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg					0.085 U									1.5	
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg					0.0345 U									0.24	
	8270C	Carbazole	24	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	Chrysene	62	ca	--	mg/kg					3.4									0.12	
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg					**0.75**									0.0175 U	
	8270C	Dibenzofuran	15	nc	--	mg/kg					0.14									0.036 U	
	8270C	Diethyl phthalate	4888	nc	--	mg/kg					0.0345 U									0.036 U	
	8270C	Dimethyl phthalate	100000	max	--	mg/kg					0.0345 U									0.036 U	
	8270C	Di-n-butyl phthalate	611	nc	--	mg/kg					0.085 U									0.09 U	
	8270C	Di-n-octyl phthalate	244	nc	--	mg/kg					0.17 U									0.175 U	
	8270C	Fluoranthene	229	nc	--	mg/kg					4.2									0.12	
	8270C	Fluorene	275	nc	--	mg/kg					0.13									0.0175 U	
	8270C	Hexachlorobenzene	0.30	ca	--	mg/kg					0.017 U									0.0175 U	
	8270C	Hexachlorobutadiene	6.2	ca	--	mg/kg					0.085 U									0.09 U	

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-001M-SO	ASYss-002M-SO	ASYss-003M-SO	ASYss-004D-SO	ASYss-004M-SO	ASYss-005D-SO	ASYss-005M-SO	ASYss-006M-SO	ASYss-007M-DUP	ASYss-007M-SO	ASYss-008M-SO	ASYss-009M-SO	ASYss-010M-SO	ASYss-011M-SO	ASYss-012D-QA
						Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004
						Sample Depth:	0-1 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-0.5 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units															
	8270C	Hexachlorocyclopentadiene	37	nc	--	mg/kg					0.5 U									0.55 U	
	8270C	Hexachloroethane	35	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg					**1.7**									0.068	
	8270C	Isophorone	512	ca	--	mg/kg					0.085 U									0.09 U	
	8270C	Naphthalene	5.6	nc	--	mg/kg					0.31									0.028 J	
	8270C	Nitrobenzene	2	nc	--	mg/kg					0.017 U									0.0175 U	
	8270C	n-Nitroso-di-n-propylamine	0.069	ca	--	mg/kg					0.0345 U									0.036 U	
	8270C	n-Nitrosodiphenylamine	99	ca	--	mg/kg					0.017 U									0.0175 U	
	8270C	Pentachlorophenol	3.0	ca	--	mg/kg					0.17 U									0.175 U	
	8270C	Phenanthrene	--		--	mg/kg					1.1									0.059	
	8270C	Phenol	1833	nc	--	mg/kg					0.085 U									0.0083 J	
	8270C	Pyrene	232	nc	--	mg/kg					4.5									0.14	
Explosives	8330	1,3,5-Trinitrobenzene	183	nc	--	mg/kg	0.05 U	0.25 U	0.0495 U		0.25 U		0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.05 U	0.05 U	0.05 U	
	8330	1,3-Dinitrobenzene	0.61	nc	--	mg/kg	0.05 U	0.25 U	0.0495 U		0.25 U		0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.05 U	0.05 U	0.05 U	
	8330	2,4,6-TNT	16	ca	--	mg/kg	0.05 U	0.25 U	0.0495 U		0.25 U		0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.05 U	0.05 U	0.05 U	
	8330	2,4-Dinitrotoluene	12	nc	--	mg/kg	0.05 U	0.25 U	0.0495 U		0.25 U		0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.05 U	0.05 U	0.05 U	
	8330	2,6-Dinitrotoluene	6.1	nc	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	2-Amino-4,6-Dinitrotoluene	--		--	mg/kg	0.046 J	0.495 U	0.069 J		0.29 J		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	2-Nitrotoluene	0.88	ca	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	3-Nitrotoluene	73	nc	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.091 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	4-Amino-2,6-Dinitrotoluene	--		--	mg/kg	0.15 U	0.75 U	0.15 U		0.75 U		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	
	8330	4-Nitrotoluene	12	ca	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	HMX	306	nc	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	Nitrobenzene	2	nc	--	mg/kg	0.05 U	0.25 U	0.0495 U		0.25 U		0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.0495 U	0.05 U	0.05 U	0.05 U	
	8330	RDX	4.4	ca	--	mg/kg	0.1 U	0.495 U	0.1 U		0.5 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	8330	Tetryl	61	nc	--	mg/kg	0.2 U	1 U	0.2 U		1 U		0.2 U	0.2 U	0.2 U	0.195 U	0.195 U	0.2 U	0.2 U	0.2 U	
Propellants	353.2 Modified	Nitrocellulose	--		--	mg/kg					1.7										
	8332	Nitroglycerine	35	ca	--	mg/kg					0.25 U										
	SW8330 Modified	Nitroguanidine	611	nc	--	mg/kg					0.125 U										

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style.

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO	ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO
						Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004
						Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units																		
Metals	6010B	Aluminum	7614	nc	17700	mg/kg		**15000**	**13000**		**20000**	**13000**		**13000**	**14000**	**14000**	**13000**	**13000**	**11000**	**14000**	**15000**	**15000**	**14000**	**15000**
	6010B	Arsenic	0.39	ca	15.4	mg/kg		**5**	**5.2**		**10**	**9.2**		**9.4**	**9.5**	**23**	**22**	**41**	**11**	**11**	**15**	**13**	**12**	**14**
	6010B	Barium	538	nc	88.4	mg/kg		120	110		210	81		79	92	180	160	180	280	110	84	87	96	87
	6010B	Beryllium	15	nc	0.88	mg/kg		1.8	1.5		3.7	0.84		0.8	0.93	2.7	2.5	2.1	0.71	1.3	1.1	1	1.1	0.91
	6010B	Cadmium	3.7	nc	0.00	mg/kg		0.29	0.32		0.84	0.14		0.15	0.13 U	0.89	0.88	1.4	**9.5**	0.1	0.125 U	0.19	0.23	0.24
	6010B	Calcium	--[n]		15800	mg/kg		43000	39000		83000	9200 J		11000	13000	80000	83000	88000	4800	21000	6900	6900	8700	4000
	6010B	Chromium	30	ca	17.4	mg/kg		15	13		**34**	16		18	19	22	23	29	**64**	22	22	22	19	23
	6010B	Cobalt	30	ca	10.4	mg/kg		2	2.1		4	6.8		6.1	5.1	3.5	3.4	4.5	5.7	6.4	13	13	10	12
	6010B	Copper	313	nc	17.7	mg/kg		9.5	8.5		25	14		12	12	33	32	44	200	13	19	20	17	20
	6010B	Iron	2346	nc	23100	mg/kg		**9900**	**11000**		**14000**	**18000**		**20000**	**18000**	**16000**	**16000**	**19000**	**27000**	**23000**	**28000**	**27000**	**26000**	**27000**
	6010B	Lead	400	pbk	26.1	mg/kg		31	31		97	26		28	34	110	110	160	**1200**	24	18	17	20	15
	6010B	Magnesium	--[n]		3030	mg/kg		6400	5400		12000	2800		2900	3300	8500	8000	7400	1800	3700	3300	3300	3300	3300
	6010B	Manganese	176	nc	1450	mg/kg		**760**	**700**		**1900**	**710**		**360**	**450**	**1300**	**1300**	**1300**	**470**	**580**	**470**	**450**	**700**	**570**
	6010B	Nickel	156	nc	21.1	mg/kg		7.8	7.2		18	12		13	14	15	16	20	22	18	23	23	19	23
	6010B	Potassium	--[n]		927	mg/kg		1300	1300		1900	890 J		1000	1200	1600	1400	1500	1200	1800	1500	1600	1500	1700
	6010B	Selenium	39	nc	1.4	mg/kg		1.1	0.89		0.98	0.84		0.55	0.8 U	1.4	1.3	0.72	0.99	0.74	0.79	0.8 U	0.83	0.53
	6010B	Silver	39	nc	0.00	mg/kg		3.2	4.8		0.5 U	0.55 U		0.5 U	0.55 U	0.5 U	0.49 U	5.2	0.62	0.5 U	0.5 U	0.55 U	0.49 U	0.48 U
	6010B	Sodium	--[n]		123	mg/kg		660	570		880	340		330	360	720	680	580	950	440	390	400	390	370
	6010B	Vanadium	7.8	nc	31.1	mg/kg		**12**	**13**		**12**	**21**		**22**	**21**	**11**	**10**	**12**	**19**	**20**	**24**	**23**	**25**	**25**
	6010B	Zinc	2346	nc	61.8	mg/kg		63	60		120	65		66	61	130	120	200	1800	130	66	64	69	69
	7041	Antimony	3.1	nc	0.96	mg/kg		0.6 U	0.6 U		0.75 U	- R		0.6 U	0.75 U	0.7 U	0.7 U	0.75 U	0.75 U	0.75 U	0.7 U	0.7 U	0.7 U	0.65 U
	7196A	Hexavalent Chromium	30	ca	17.4	mg/kg		0.95 U	1 U															
	7471A	Mercury	2.3	nc	0.04	mg/kg		0.06	0.072		0.03	0.053		0.067	0.049	0.065	0.087	0.39	0.64	0.035	0.011 U	0.011 U	0.036	0.031
	7841	Thallium	0.52	nc	0.00	mg/kg		0.26 U	0.24		0.325 U	0.305 U		0.265 U	0.32 U	0.24	0.29 U	0.35	0.32 U	0.315 U	0.31 U	0.25	0.21	0.28 U
Pesticides	8081A	4,4'-DDD	2.4	ca	--	mg/kg								0.0085 U										
	8081A	4,4'-DDE	1.7	ca	--	mg/kg								0.01 U										
	8081A	4,4'-DDT	1.7	ca	--	mg/kg								0.0085 U										
	8081A	Aldrin	0.029	ca	--	mg/kg								0.0085 U										
	8081A	alpha-BHC	0.09	sat	--	mg/kg								0.0085 U										
	8081A	alpha-Chlordane	1.6	ca	--	mg/kg								0.0085 U										
	8081A	beta-BHC	0.32	ca	--	mg/kg								0.0085 U										
	8081A	delta-BHC	--		--	mg/kg								0.0085 U										
	8081A	Dieldrin	0.030	ca	--	mg/kg								0.0085 U										
	8081A	Endosulfan I	37	nc	--	mg/kg								0.0085 U										
	8081A	Endosulfan II	37	nc	--	mg/kg								0.0085 U										
	8081A	Endosulfan sulfate	37	nc	--	mg/kg								0.0085 U										
	8081A	Endrin	1.8	nc	--	mg/kg								0.0085 U										
	8081A	Endrin aldehyde	--		--	mg/kg								0.0085 U										
	8081A	Endrin ketone	--		--	mg/kg								0.0085 U										
	8081A	gamma-BHC	0.44	ca	--	mg/kg								0.0085 U										
	8081A	gamma-Chlordane	1.6	ca	--	mg/kg								0.0085 U										
	8081A	Heptachlor	0.11	ca	--	mg/kg								0.0085 U										
	8081A	Heptachlor epoxide	0.053	ca	--	mg/kg								0.0085 U										
	8081A	Methoxychlor	31	nc	--	mg/kg								0.041 U										
	8081A	Toxaphene	0.44	ca	--	mg/kg								0.08 U										

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO	ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units																		
PCBs	8082	Aroclor 1016	0.39 nc	--	mg/kg								0.0165 U										
	8082	Aroclor 1221	0.22 ca	--	mg/kg								0.0165 U										
	8082	Aroclor 1232	0.22 ca	--	mg/kg								0.008 U										
	8082	Aroclor 1242	0.22 ca	--	mg/kg								0.0165 U										
	8082	Aroclor 1248	0.22 ca	--	mg/kg								0.008 U										
	8082	Aroclor 1254	0.22 ca	--	mg/kg								0.0165 U										
	8082	Aroclor 1260	0.22 ca	--	mg/kg								0.0165 U										
VOCs	8260B	1,1,1-Trichloroethane	1200 sat	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,1,2,2-Tetrachloroethane	0.41 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,1,2-Trichloroethane	0.73 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,1-Dichloroethane	51 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,1-Dichloroethene	12 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,2-Dibromoethane	0.032 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,2-Dichloroethane	0.28 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	1,2-Dichloroethene (total)	6.9 nc	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	1,2-Dichloropropane	0.34 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	2-Butanone	2231 nc	--	mg/kg	0.009 U			0.01 U			0.0095 U											
	8260B	2-Hexanone	530 nc	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	4-Methyl-2-pentanone	528 nc	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	Acetone	1412 nc	--	mg/kg	0.009 U			0.01 U			0.0095 U											
	8260B	Benzene	0.64 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Bromochloromethane	--	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Bromodichloromethane	0.82 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Bromoform	62 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Bromomethane	0.39 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Carbon disulfide	36 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Carbon tetrachloride	0.25 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Chlorobenzene	15 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Chloroethane	3.0 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Chloroform	0.22 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Chloromethane	4.7 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	cis-1,2-Dichloroethene	4.3 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	cis-1,3-Dichloropropene	0.78 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Dibromochloromethane	1.1 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Ethylbenzene	395 sat	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	m&p-Xylenes	27 nc	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	Methylene chloride	9.1 ca	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	o-Xylene	27 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Styrene	1700 sat	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Tetrachloroethene	0.48 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Toluene	520 sat	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Total Xylenes	27 nc	--	mg/kg	0.006 U			0.0065 U			0.0065 U											
	8260B	trans-1,2-Dichloroethene	6.9 nc	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	trans-1,3-Dichloropropene	0.78 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Trichloroethene	0.053 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											
	8260B	Vinyl chloride	0.079 ca	--	mg/kg	0.0031 U			0.0033 U			0.00325 U											

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO	ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units																		
SVOCs	8270C	1,2,4-Trichlorobenzene	6.2 nc	--	mg/kg								0.08 UJ										
	8270C	1,2-Dichlorobenzene	600 sat	--	mg/kg								0.08 UJ										
	8270C	1,3-Dichlorobenzene	53 nc	--	mg/kg								0.08 UJ										
	8270C	1,4-Dichlorobenzene	3.4 ca	--	mg/kg								0.08 UJ										
	8270C	2,2-oxybis (1-chloropropane)	2.9 ca	--	mg/kg								0.08 UJ										
	8270C	2,4,5-Trichlorophenol	611 nc	--	mg/kg								0.16 U										
	8270C	2,4,6-Trichlorophenol	0.61 nc	--	mg/kg								0.08 U										
	8270C	2,4-Dichlorophenol	18 nc	--	mg/kg								0.16 U										
	8270C	2,4-Dimethylphenol	122 nc	--	mg/kg								0.16 U										
	8270C	2,4-Dinitrophenol	12 nc	--	mg/kg								- R										
	8270C	2,4-Dinitrotoluene	12 nc	--	mg/kg								0.016 UJ										
	8270C	2,6-Dinitrotoluene	6.1 nc	--	mg/kg								0.016 UJ										
	8270C	2-Chloronaphthalene	494 nc	--	mg/kg								0.08 UJ										
	8270C	2-Chlorophenol	6.3 nc	--	mg/kg								0.08 U										
	8270C	2-Methylnaphthalene	--	--	mg/kg								0.022 J										
	8270C	2-Methylphenol	306 nc	--	mg/kg								0.032 U										
	8270C	2-Nitroaniline	18.3 nc	--	mg/kg								0.08 UJ										
	8270C	2-Nitrophenol	--	--	mg/kg								0.16 U										
	8270C	3,3'-Dichlorobenzidine	1.1 ca	--	mg/kg								0.08 UJ										
	8270C	3-Nitroaniline	1.8 nc	--	mg/kg								0.32 UJ										
	8270C	4,6-Dinitro-2-methylphenol	0.61 nc	--	mg/kg								0.32 U										
	8270C	4-Bromophenyl phenyl ether	--	--	mg/kg								0.08 UJ										
	8270C	4-Chloro-3-methylphenol	--	--	mg/kg								0.16 U										
	8270C	4-Chloroaniline	24 nc	--	mg/kg								0.32 UJ										
	8270C	4-Chlorophenyl phenyl ether	--	--	mg/kg								0.08 UJ										
	8270C	4-Methylphenol	31 nc	--	mg/kg								0.032 U										
	8270C	4-Nitroaniline	23 ca	--	mg/kg								0.32 UJ										
	8270C	4-Nitrophenol	--	--	mg/kg								0.32 U										
	8270C	Acenaphthene	368 nc	--	mg/kg								0.056 J										
	8270C	Acenaphthylene	--	--	mg/kg								0.016 UJ										
	8270C	Anthracene	2189 nc	--	mg/kg								0.1 J										
	8270C	Benzo(a)anthracene	0.62 ca	--	mg/kg								0.43 J										
	8270C	Benzo(a)pyrene	0.062 ca	--	mg/kg								**0.59 J**										
	8270C	Benzo(b)fluoranthene	0.62 ca	--	mg/kg								**0.71 J**										
	8270C	Benzo(g,h,i)perylene	--	--	mg/kg								0.48 J										
	8270C	Benzo(k)fluoranthene	6.2 ca	--	mg/kg								0.37 J										
	8270C	Benzoic acid	100000 max	--	mg/kg								- R										
	8270C	Benzyl alcohol	1833 nc	--	mg/kg								0.21 J										
	8270C	Bis(2-chloroethoxy)methane	--	--	mg/kg								0.032 UJ										
	8270C	Bis(2-chloroethyl) ether	0.22 ca	--	mg/kg								0.032 UJ										
	8270C	Bis(2-ethylhexyl) phthalate	35 ca	--	mg/kg								0.038 J										
	8270C	Butylbenzyl phthalate	1222 nc	--	mg/kg								0.032 UJ										
	8270C	Carbazole	24 ca	--	mg/kg								0.08 UJ										
	8270C	Chrysene	62 ca	--	mg/kg								0.44 J										
	8270C	Dibenzo(a,h)anthracene	0.062 ca	--	mg/kg								**0.11 J**										
	8270C	Dibenzofuran	15 nc	--	mg/kg								0.023 J										
	8270C	Diethyl phthalate	4888 nc	--	mg/kg								0.032 UJ										
	8270C	Dimethyl phthalate	100000 max	--	mg/kg								0.032 UJ										
	8270C	Di-n-butyl phthalate	611 nc	--	mg/kg								0.08 UJ										
	8270C	Di-n-octyl phthalate	244 nc	--	mg/kg								0.16 UJ										
	8270C	Fluoranthene	229 nc	--	mg/kg								0.74 J										
	8270C	Fluorene	275 nc	--	mg/kg								0.05 J										
	8270C	Hexachlorobenzene	0.30 ca	--	mg/kg								0.016 UJ										
	8270C	Hexachlorobutadiene	6.2 ca	--	mg/kg								0.08 UJ										

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RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-012D-SO	ASYss-012M-QA	ASYss-012M-SO	ASYss-013D-SO	ASYss-013M-SO	ASYss-014M-SO	ASYss-015D-SO	ASYss-015M-SO	ASYss-016M-SO	ASYss-017M-DUP	ASYss-017M-SO	ASYss-018M-SO	ASYss-019M-SO	ASYss-020M-SO	ASYss-021M-DUP	ASYss-021M-SO	ASYss-022M-QA	ASYss-022M-SO
					Sample Date:	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/4/2004	11/4/2004	11/4/2004	11/3/2004	11/3/2004	11/3/2004	11/3/2004	11/10/2004	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/12/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units																		
	8270C	Hexachlorocyclopentadiene	37	nc	--	mg/kg								0.48 UJ										
	8270C	Hexachloroethane	35	ca	--	mg/kg								0.08 UJ										
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg								0.38 J										
	8270C	Isophorone	512	ca	--	mg/kg								0.08 UJ										
	8270C	Naphthalene	5.6	nc	--	mg/kg								0.018 J										
	8270C	Nitrobenzene	2	nc	--	mg/kg								0.016 UJ										
	8270C	n-Nitroso-di-n-propylamine	0.069	ca	--	mg/kg								0.032 UJ										
	8270C	n-Nitrosodiphenylamine	99	ca	--	mg/kg								0.016 UJ										
	8270C	Pentachlorophenol	3.0	ca	--	mg/kg								0.16 U										
	8270C	Phenanthrene	--		--	mg/kg								0.32 J										
	8270C	Phenol	1833	nc	--	mg/kg								0.033 J										
	8270C	Pyrene	232	nc	--	mg/kg								0.77 J										
Explosives	8330	1,3,5-Trinitrobenzene	183	nc	--	mg/kg		0.0495 U	0.0495 U		0.05 U	0.05 U		0.05 U	0.0495 U	0.25 U	0.25 U	0.05 U	0.0495 U	0.05 U	0.05 U	0.049 U	0.05 U	0.0495 U
	8330	1,3-Dinitrobenzene	0.61	nc	--	mg/kg		0.0495 U	0.0495 U		0.05 U	0.05 U		0.05 U	0.0495 U	0.25 U	0.25 U	0.05 U	0.0495 U	0.05 U	0.05 U	0.049 U	0.05 U	0.0495 U
	8330	2,4,6-TNT	16	ca	--	mg/kg		0.0495 U	0.0495 U		0.05 U	0.05 U		0.05 U	0.0495 U	0.25 U	0.25 U	0.05 U	0.0495 U	0.05 U	0.05 U	0.049 U	0.05 U	0.0495 U
	8330	2,4-Dinitrotoluene	12	nc	--	mg/kg		0.0495 U	0.0495 U		0.05 U	0.05 U		0.05 U	0.0495 U	0.25 U	0.25 U	0.05 U	0.0495 U	0.05 U	0.05 U	0.049 U	0.05 U	0.0495 U
	8330	2,6-Dinitrotoluene	6.1	nc	--	mg/kg		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	2-Amino-4,6-Dinitrotoluene	--		--	mg/kg		0.1 U	0.1 U		0.091 J	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.095 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	2-Nitrotoluene	0.88	ca	--	mg/kg		0.1 U	0.1 U		0.24	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.43	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	3-Nitrotoluene	73	nc	--	mg/kg		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	4-Amino-2,6-Dinitrotoluene	--		--	mg/kg		0.15 U	0.15 U		0.15 U	0.15 U		0.15 U	0.15 U	0.75 U	0.75 U	0.15 U	0.15 U	0.15 U	0.15 U	0.145 U	0.15 U	0.15 U
	8330	4-Nitrotoluene	12	ca	--	mg/kg		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	HMX	306	nc	--	mg/kg		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	Nitrobenzene	2	nc	--	mg/kg		0.0495 U	0.0495 U		0.05 U	0.05 U		0.05 U	0.0495 U	0.25 U	0.25 U	0.05 U	0.0495 U	0.05 U	0.05 U	0.049 U	0.05 U	0.0495 U
	8330	RDX	4.4	ca	--	mg/kg		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U	0.1 U	0.5 U	0.495 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	Tetryl	61	nc	--	mg/kg		0.195 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U	1 U	1 U	0.2 U	0.195 U	0.2 U	0.2 U	0.195 U	0.2 U	0.195 U
Propellants	353.2 Modified	Nitrocellulose	--		--	mg/kg								1 U										
	8332	Nitroglycerine	35	ca	--	mg/kg								0.25 UJ										
	SW8330 Modified	Nitroguanidine	611	nc	--	mg/kg								0.125 U										

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO
						Sample Date:	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004
						Sample Depth:	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units					
Metals	6010B	Aluminum	7614	nc	17700	mg/kg	**13000**	**14000**	**13000**		
	6010B	Arsenic	0.39	ca	15.4	mg/kg	**11**	**12**	**7.8**		
	6010B	Barium	538	nc	88.4	mg/kg	99	94	74		
	6010B	Beryllium	15	nc	0.88	mg/kg	0.93	0.7	0.73		
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.11	0.125 U	0.12 U		
	6010B	Calcium	--[n]		15800	mg/kg	6200	1300	2700		
	6010B	Chromium	30	ca	17.4	mg/kg	22	21	23		
	6010B	Cobalt	30	ca	10.4	mg/kg	7.4	9.1	6.4		
	6010B	Copper	313	nc	17.7	mg/kg	17	12	13		
	6010B	Iron	2346	nc	23100	mg/kg	**21000**	**23000**	**21000**		
	6010B	Lead	400	pbk	26.1	mg/kg	20	19	14		
	6010B	Magnesium	--[n]		3030	mg/kg	2400	2600	2100		
	6010B	Manganese	176	nc	1450	mg/kg	**330**	**730**	**220**		
	6010B	Nickel	156	nc	21.1	mg/kg	21	19	17		
	6010B	Potassium	--[n]		927	mg/kg	1000	1200	1400		
	6010B	Selenium	39	nc	1.4	mg/kg	1.2	0.94	0.69		
	6010B	Silver	39	nc	0.00	mg/kg	0.5 U	0.5 U	0.47 U		
	6010B	Sodium	--[n]		123	mg/kg	360	350	340		
	6010B	Vanadium	7.8	nc	31.1	mg/kg	**19**	**25**	**21**		
	6010B	Zinc	2346	nc	61.8	mg/kg	65	83	64		
	7041	Antimony	3.1	nc	0.96	mg/kg	0.7 U	0.7 U	0.7 U		
	7196A	Hexavalent Chromium	30	ca	17.4	mg/kg					
	7471A	Mercury	2.3	nc	0.04	mg/kg	0.0165 U	0.065	0.0175 U		
	7841	Thallium	0.52	nc	0.00	mg/kg	0.295 U	0.3 U	0.295 U		
Pesticides	8081A	4,4'-DDD	2.4	ca	--	mg/kg					
	8081A	4,4'-DDE	1.7	ca	--	mg/kg					
	8081A	4,4'-DDT	1.7	ca	--	mg/kg					
	8081A	Aldrin	0.029	ca	--	mg/kg					
	8081A	alpha-BHC	0.09	sat	--	mg/kg					
	8081A	alpha-Chlordane	1.6	ca	--	mg/kg					
	8081A	beta-BHC	0.32	ca	--	mg/kg					
	8081A	delta-BHC	--		--	mg/kg					
	8081A	Dieldrin	0.030	ca	--	mg/kg					
	8081A	Endosulfan I	37	nc	--	mg/kg					
	8081A	Endosulfan II	37	nc	--	mg/kg					
	8081A	Endosulfan sulfate	37	nc	--	mg/kg					
	8081A	Endrin	1.8	nc	--	mg/kg					
	8081A	Endrin aldehyde	--		--	mg/kg					
	8081A	Endrin ketone	--		--	mg/kg					
	8081A	gamma-BHC	0.44	ca	--	mg/kg					
	8081A	gamma-Chlordane	1.6	ca	--	mg/kg					
	8081A	Heptachlor	0.11	ca	--	mg/kg					
	8081A	Heptachlor epoxide	0.053	ca	--	mg/kg					
	8081A	Methoxychlor	31	nc	--	mg/kg					
	8081A	Toxaphene	0.44	ca	--	mg/kg					

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO
						Sample Date:	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004
						Sample Depth:	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units					
PCBs	8082	Aroclor 1016	0.39	nc	--	mg/kg					
	8082	Aroclor 1221	0.22	ca	--	mg/kg					
	8082	Aroclor 1232	0.22	ca	--	mg/kg					
	8082	Aroclor 1242	0.22	ca	--	mg/kg					
	8082	Aroclor 1248	0.22	ca	--	mg/kg					
	8082	Aroclor 1254	0.22	ca	--	mg/kg					
	8082	Aroclor 1260	0.22	ca	--	mg/kg					
VOCs	8260B	1,1,1-Trichloroethane	1200	sat	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,1,2,2-Tetrachloroethane	0.41	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,1,2-Trichloroethane	0.73	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,1-Dichloroethane	51	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,1-Dichloroethene	12	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,2-Dibromoethane	0.032	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,2-Dichloroethane	0.28	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	1,2-Dichloroethene (total)	6.9	nc	--	mg/kg				0.007 U	0.007 U
	8260B	1,2-Dichloropropane	0.34	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	2-Butanone	2231	nc	--	mg/kg				0.01 U	0.011 U
	8260B	2-Hexanone	530	nc	--	mg/kg				0.007 U	0.007 U
	8260B	4-Methyl-2-pentanone	528	nc	--	mg/kg				0.007 U	0.007 U
	8260B	Acetone	1412	nc	--	mg/kg				0.011 J	0.022
	8260B	Benzene	0.64	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Bromochloromethane	--		--	mg/kg				0.0034 U	0.0036 U
	8260B	Bromodichloromethane	0.82	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Bromoform	62	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Bromomethane	0.39	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	Carbon disulfide	36	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	Carbon tetrachloride	0.25	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Chlorobenzene	15	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	Chloroethane	3.0	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Chloroform	0.22	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Chloromethane	4.7	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	cis-1,2-Dichloroethene	4.3	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	cis-1,3-Dichloropropene	0.78	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Dibromochloromethane	1.1	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Ethylbenzene	395	sat	--	mg/kg				0.0034 U	0.0036 U
	8260B	m&p-Xylenes	27	nc	--	mg/kg				0.007 U	0.007 U
	8260B	Methylene chloride	9.1	ca	--	mg/kg				0.007 U	0.007 U
	8260B	o-Xylene	27	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	Styrene	1700	sat	--	mg/kg				0.0034 U	0.0036 U
	8260B	Tetrachloroethene	0.48	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Toluene	520	sat	--	mg/kg				0.0034 U	0.0036 U
	8260B	Total Xylenes	27	nc	--	mg/kg				0.007 U	0.007 U
	8260B	trans-1,2-Dichloroethene	6.9	nc	--	mg/kg				0.0034 U	0.0036 U
	8260B	trans-1,3-Dichloropropene	0.78	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Trichloroethene	0.053	ca	--	mg/kg				0.0034 U	0.0036 U
	8260B	Vinyl chloride	0.079	ca	--	mg/kg				0.0034 U	0.0036 U

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO
						Sample Date:	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004
						Sample Depth:	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units					
SVOCs	8270C	1,2,4-Trichlorobenzene	6.2	nc	--	mg/kg					
	8270C	1,2-Dichlorobenzene	600	sat	--	mg/kg					
	8270C	1,3-Dichlorobenzene	53	nc	--	mg/kg					
	8270C	1,4-Dichlorobenzene	3.4	ca	--	mg/kg					
	8270C	2,2-oxybis (1-chloropropane)	2.9	ca	--	mg/kg					
	8270C	2,4,5-Trichlorophenol	611	nc	--	mg/kg					
	8270C	2,4,6-Trichlorophenol	0.61	nc	--	mg/kg					
	8270C	2,4-Dichlorophenol	18	nc	--	mg/kg					
	8270C	2,4-Dimethylphenol	122	nc	--	mg/kg					
	8270C	2,4-Dinitrophenol	12	nc	--	mg/kg					
	8270C	2,4-Dinitrotoluene	12	nc	--	mg/kg					
	8270C	2,6-Dinitrotoluene	6.1	nc	--	mg/kg					
	8270C	2-Chloronaphthalene	494	nc	--	mg/kg					
	8270C	2-Chlorophenol	6.3	nc	--	mg/kg					
	8270C	2-Methylnaphthalene	--		--	mg/kg					
	8270C	2-Methylphenol	306	nc	--	mg/kg					
	8270C	2-Nitroaniline	18.3	nc	--	mg/kg					
	8270C	2-Nitrophenol	--		--	mg/kg					
	8270C	3,3'-Dichlorobenzidine	1.1	ca	--	mg/kg					
	8270C	3-Nitroaniline	1.8	nc	--	mg/kg					
	8270C	4,6-Dinitro-2-methylphenol	0.61	nc	--	mg/kg					
	8270C	4-Bromophenyl phenyl ether	--		--	mg/kg					
	8270C	4-Chloro-3-methylphenol	--		--	mg/kg					
	8270C	4-Chloroaniline	24	nc	--	mg/kg					
	8270C	4-Chlorophenyl phenyl ether	--		--	mg/kg					
	8270C	4-Methylphenol	31	nc	--	mg/kg					
	8270C	4-Nitroaniline	23	ca	--	mg/kg					
	8270C	4-Nitrophenol	--		--	mg/kg					
	8270C	Acenaphthene	368	nc	--	mg/kg					
	8270C	Acenaphthylene	--		--	mg/kg					
	8270C	Anthracene	2189	nc	--	mg/kg					
	8270C	Benzo(a)anthracene	0.62	ca	--	mg/kg					
	8270C	Benzo(a)pyrene	0.062	ca	--	mg/kg					
	8270C	Benzo(b)fluoranthene	0.62	ca	--	mg/kg					
	8270C	Benzo(g,h,i)perylene	--		--	mg/kg					
	8270C	Benzo(k)fluoranthene	6.2	ca	--	mg/kg					
	8270C	Benzoic acid	100000	max	--	mg/kg					
	8270C	Benzyl alcohol	1833	nc	--	mg/kg					
	8270C	Bis(2-chloroethoxy)methane	--		--	mg/kg					
	8270C	Bis(2-chloroethyl) ether	0.22	ca	--	mg/kg					
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg					
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg					
	8270C	Carbazole	24	ca	--	mg/kg					
	8270C	Chrysene	62	ca	--	mg/kg					
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg					
	8270C	Dibenzofuran	15	nc	--	mg/kg					
	8270C	Diethyl phthalate	4888	nc	--	mg/kg					
	8270C	Dimethyl phthalate	100000	max	--	mg/kg					
	8270C	Di-n-butyl phthalate	611	nc	--	mg/kg					
	8270C	Di-n-octyl phthalate	244	nc	--	mg/kg					
	8270C	Fluoranthene	229	nc	--	mg/kg					
	8270C	Fluorene	275	nc	--	mg/kg					
	8270C	Hexachlorobenzene	0.30	ca	--	mg/kg					
	8270C	Hexachlorobutadiene	6.2	ca	--	mg/kg					

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-023M-SO	ASYss-025M-SO	ASYss-026M-SO	ASYss-027D-DUP	ASYss-027D-SO
					Sample Date:	11/11/2004	11/11/2004	11/3/2004	11/3/2004	11/3/2004
					Sample Depth:	0-0.5 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units					
	8270C	Hexachlorocyclopentadiene	37 nc	--	mg/kg					
	8270C	Hexachloroethane	35 ca	--	mg/kg					
	8270C	Indeno(1,2,3-cd)pyrene	0.62 ca	--	mg/kg					
	8270C	Isophorone	512 ca	--	mg/kg					
	8270C	Naphthalene	5.6 nc	--	mg/kg					
	8270C	Nitrobenzene	2 nc	--	mg/kg					
	8270C	n-Nitroso-di-n-propylamine	0.069 ca	--	mg/kg					
	8270C	n-Nitrosodiphenylamine	99 ca	--	mg/kg					
	8270C	Pentachlorophenol	3.0 ca	--	mg/kg					
	8270C	Phenanthrene	--	--	mg/kg					
	8270C	Phenol	1833 nc	--	mg/kg					
	8270C	Pyrene	232 nc	--	mg/kg					
Explosives	8330	1,3,5-Trinitrobenzene	183 nc	--	mg/kg	0.05 U	0.05 U	0.0495 U		
	8330	1,3-Dinitrobenzene	0.61 nc	--	mg/kg	0.05 U	0.05 U	0.0495 U		
	8330	2,4,6-TNT	16 ca	--	mg/kg	0.05 U	0.05 U	0.0495 U		
	8330	2,4-Dinitrotoluene	12 nc	--	mg/kg	0.05 U	0.05 U	0.0495 U		
	8330	2,6-Dinitrotoluene	6.1 nc	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	2-Amino-4,6-Dinitrotoluene	--	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	2-Nitrotoluene	0.88 ca	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	3-Nitrotoluene	73 nc	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	4-Amino-2,6-Dinitrotoluene	--	--	mg/kg	0.15 U	0.15 U	0.15 U		
	8330	4-Nitrotoluene	12 ca	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	HMX	306 nc	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	Nitrobenzene	2 nc	--	mg/kg	0.05 U	0.05 U	0.0495 U		
	8330	RDX	4.4 ca	--	mg/kg	0.1 U	0.1 U	0.1 U		
	8330	Tetryl	61 nc	--	mg/kg	0.2 U	0.2 U	0.2 U		
Propellants	353.2 Modified	Nitrocellulose	--	--	mg/kg					
	8332	Nitroglycerine	35 ca	--	mg/kg					
	SW8330 Modified	Nitroguanidine	611 nc	--	mg/kg					

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO	ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
					Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units									
Metals	6010B	Aluminum	7614 nc	17700	mg/kg	**13000**	**13000**	**13000**	**13000**	**14000**	**14000**	**16000**	**15000**	**12000**
	6010B	Arsenic	0.39 ca	15.4	mg/kg	**11**	**11**	**13**	**9.2**	**10**	**12**	**11**	**8.4**	**5.5**
	6010B	Barium	538 nc	88.4	mg/kg	80	83	86	83	110	130	120	94	66
	6010B	Beryllium	15 nc	0.88	mg/kg	0.87	0.9	0.82	0.68	0.96	1.2	1.3	0.81	0.62
	6010B	Cadmium	3.7 nc	0.00	mg/kg	0.13	0.11	0.12 U	0.12 U	0.47	1.4	1.3	0.91	0.14 U
	6010B	Calcium	--[n]	15800	mg/kg	2900	3000	2900	910	1400	2800	3100	3800	1700
	6010B	Chromium	30 ca	17.4	mg/kg	24	22	20	18	19	18	19	21	20
	6010B	Cobalt	30 ca	10.4	mg/kg	9.4	9.3	10	4.8	5.8	16	19	8.7	7
	6010B	Copper	313 nc	17.7	mg/kg	19	20	20	9.7	17	31	25	20	8
	6010B	Iron	2346 nc	23100	mg/kg	**24000**	**25000**	**26000**	**21000**	**21000**	**22000**	**27000**	**20000**	**16000**
	6010B	Lead	400 pbk	26.1	mg/kg	15	15	18	20	38	41	33	43	16
	6010B	Magnesium	--[n]	3030	mg/kg	2500	2500	2900	1400	1700	2000	2400	2300	1900
	6010B	Manganese	176 nc	1450	mg/kg	**360**	**340**	**340**	95	160	**940**	**1700**	**570**	**440**
	6010B	Nickel	156 nc	21.1	mg/kg	22	23	26	13	15	25	31	23	17
	6010B	Potassium	--[n]	927	mg/kg	1400	1400	1600	1200	1200	1200	1400	1300	970
	6010B	Selenium	39 nc	1.4	mg/kg	0.68	0.83	0.7 U	0.93	0.46	1	1.15 U	0.68	0.85 U
	6010B	Silver	39 nc	0.00	mg/kg	0.48 U	0.485 U	0.48 U	0.49 U	0.47 U	0.485 U	0.8 U	0.5 U	0.55 U
	6010B	Sodium	--[n]	123	mg/kg	350	370	380	340	320	320	370	340	280
	6010B	Vanadium	7.8 nc	31.1	mg/kg	**21**	**22**	**21**	**22**	**22**	**22**	**26**	**22**	**22**
	6010B	Zinc	2346 nc	61.8	mg/kg	74	75	110	56	82	220	260	140	68
	7041	Antimony	3.1 nc	0.96	mg/kg	0.7 U	0.7 U	- R	0.7 U	0.7 U	0.7 U	1.05 U	0.75 U	0.8 U
	7196A	Hexavalent Chromium	30 ca	17.4	mg/kg									
	7471A	Mercury	2.3 nc	0.04	mg/kg	0.0135 U	0.013 U	0.033	0.074	0.079	0.083	0.066	0.099	0.042
	7841	Thallium	0.52 nc	0.00	mg/kg	0.305 U	0.295 U	0.305 U	0.295 U	0.3 U	0.26	0.445 U	0.315 U	0.335 U
Pesticides	8081A	4,4'-DDD	2.4 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	4,4'-DDE	1.7 ca	--	mg/kg	0.0105 U	0.01 U							
	8081A	4,4'-DDT	1.7 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Aldrin	0.029 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	alpha-BHC	0.09 sat	--	mg/kg	0.0085 U	0.0085 U							
	8081A	alpha-Chlordane	1.6 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	beta-BHC	0.32 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	delta-BHC	--	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Dieldrin	0.030 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endosulfan I	37 nc	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endosulfan II	37 nc	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endosulfan sulfate	37 nc	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endrin	1.8 nc	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endrin aldehyde	--	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Endrin ketone	--	--	mg/kg	0.0085 U	0.0085 U							
	8081A	gamma-BHC	0.44 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	gamma-Chlordane	1.6 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Heptachlor	0.11 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Heptachlor epoxide	0.053 ca	--	mg/kg	0.0085 U	0.0085 U							
	8081A	Methoxychlor	31 nc	--	mg/kg	0.0425 U	0.042 U							
	8081A	Toxaphene	0.44 ca	--	mg/kg	0.085 U	0.085 U							

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO	ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
					Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units									
PCBs	8082	Aroclor 1016	0.39 nc	--	mg/kg	0.017 U	0.017 U							
	8082	Aroclor 1221	0.22 ca	--	mg/kg	0.017 U	0.017 U							
	8082	Aroclor 1232	0.22 ca	--	mg/kg	0.0085 U	0.0085 U							
	8082	Aroclor 1242	0.22 ca	--	mg/kg	0.017 U	0.017 U							
	8082	Aroclor 1248	0.22 ca	--	mg/kg	0.0085 U	0.0085 U							
	8082	Aroclor 1254	0.22 ca	--	mg/kg	0.017 U	0.017 U							
	8082	Aroclor 1260	0.22 ca	--	mg/kg	0.017 U	0.017 U							
VOCs	8260B	1,1,1-Trichloroethane	1200 sat	--	mg/kg									
	8260B	1,1,2,2-Tetrachloroethane	0.41 ca	--	mg/kg									
	8260B	1,1,2-Trichloroethane	0.73 ca	--	mg/kg									
	8260B	1,1-Dichloroethane	51 nc	--	mg/kg									
	8260B	1,1-Dichloroethene	12 nc	--	mg/kg									
	8260B	1,2-Dibromoethane	0.032 ca	--	mg/kg									
	8260B	1,2-Dichloroethane	0.28 ca	--	mg/kg									
	8260B	1,2-Dichloroethene (total)	6.9 nc	--	mg/kg									
	8260B	1,2-Dichloropropane	0.34 ca	--	mg/kg									
	8260B	2-Butanone	2231 nc	--	mg/kg									
	8260B	2-Hexanone	530 nc	--	mg/kg									
	8260B	4-Methyl-2-pentanone	528 nc	--	mg/kg									
	8260B	Acetone	1412 nc	--	mg/kg									
	8260B	Benzene	0.64 ca	--	mg/kg									
	8260B	Bromochloromethane	--	--	mg/kg									
	8260B	Bromodichloromethane	0.82 ca	--	mg/kg									
	8260B	Bromoform	62 ca	--	mg/kg									
	8260B	Bromomethane	0.39 nc	--	mg/kg									
	8260B	Carbon disulfide	36 nc	--	mg/kg									
	8260B	Carbon tetrachloride	0.25 ca	--	mg/kg									
	8260B	Chlorobenzene	15 nc	--	mg/kg									
	8260B	Chloroethane	3.0 ca	--	mg/kg									
	8260B	Chloroform	0.22 ca	--	mg/kg									
	8260B	Chloromethane	4.7 nc	--	mg/kg									
	8260B	cis-1,2-Dichloroethene	4.3 nc	--	mg/kg									
	8260B	cis-1,3-Dichloropropene	0.78 ca	--	mg/kg									
	8260B	Dibromochloromethane	1.1 ca	--	mg/kg									
	8260B	Ethylbenzene	395 sat	--	mg/kg									
	8260B	m&p-Xylenes	27 nc	--	mg/kg									
	8260B	Methylene chloride	9.1 ca	--	mg/kg									
	8260B	o-Xylene	27 nc	--	mg/kg									
	8260B	Styrene	1700 sat	--	mg/kg									
	8260B	Tetrachloroethene	0.48 ca	--	mg/kg									
	8260B	Toluene	520 sat	--	mg/kg									
	8260B	Total Xylenes	27 nc	--	mg/kg									
	8260B	trans-1,2-Dichloroethene	6.9 nc	--	mg/kg									
	8260B	trans-1,3-Dichloropropene	0.78 ca	--	mg/kg									
	8260B	Trichloroethene	0.053 ca	--	mg/kg									
	8260B	Vinyl chloride	0.079 ca	--	mg/kg									

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO	ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
					Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
					Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Surface Soil Background Criteria	Units									
SVOCs	8270C	1,2,4-Trichlorobenzene	6.2 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	1,2-Dichlorobenzene	600 sat	--	mg/kg	0.08 U	0.085 U							
	8270C	1,3-Dichlorobenzene	53 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	1,4-Dichlorobenzene	3.4 ca	--	mg/kg	0.08 U	0.085 U							
	8270C	2,2-oxybis (1-chloropropane)	2.9 ca	--	mg/kg	0.08 U	0.085 U							
	8270C	2,4,5-Trichlorophenol	611 nc	--	mg/kg	0.16 U	0.17 U							
	8270C	2,4,6-Trichlorophenol	0.61 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	2,4-Dichlorophenol	18 nc	--	mg/kg	0.16 U	0.17 U							
	8270C	2,4-Dimethylphenol	122 nc	--	mg/kg	0.16 U	0.17 U							
	8270C	2,4-Dinitrophenol	12 nc	--	mg/kg	- R	- R							
	8270C	2,4-Dinitrotoluene	12 nc	--	mg/kg	0.016 U	0.017 U							
	8270C	2,6-Dinitrotoluene	6.1 nc	--	mg/kg	0.016 U	0.017 U							
	8270C	2-Chloronaphthalene	494 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	2-Chlorophenol	6.3 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	2-Methylnaphthalene	--	--	mg/kg	0.013 J	0.012 J							
	8270C	2-Methylphenol	306 nc	--	mg/kg	0.033 U	0.0345 U							
	8270C	2-Nitroaniline	18.3 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	2-Nitrophenol	--	--	mg/kg	0.16 U	0.17 U							
	8270C	3,3'-Dichlorobenzidine	1.1 ca	--	mg/kg	0.08 U	0.085 U							
	8270C	3-Nitroaniline	1.8 nc	--	mg/kg	0.33 U	0.345 U							
	8270C	4,6-Dinitro-2-methylphenol	0.61 nc	--	mg/kg	0.33 U	0.345 U							
	8270C	4-Bromophenyl phenyl ether	--	--	mg/kg	0.08 U	0.085 U							
	8270C	4-Chloro-3-methylphenol	--	--	mg/kg	0.16 U	0.17 U							
	8270C	4-Chloroaniline	24 nc	--	mg/kg	0.33 U	0.345 U							
	8270C	4-Chlorophenyl phenyl ether	--	--	mg/kg	0.08 U	0.085 U							
	8270C	4-Methylphenol	31 nc	--	mg/kg	0.033 U	0.0345 U							
	8270C	4-Nitroaniline	23 ca	--	mg/kg	0.33 U	0.345 U							
	8270C	4-Nitrophenol	--	--	mg/kg	0.33 U	0.345 U							
	8270C	Acenaphthene	368 nc	--	mg/kg	0.018 J	0.018 J							
	8270C	Acenaphthylene	--	--	mg/kg	0.016 J	0.013 J							
	8270C	Anthracene	2189 nc	--	mg/kg	0.058	0.048							
	8270C	Benzo(a)anthracene	0.62 ca	--	mg/kg	0.33	0.29							
	8270C	Benzo(a)pyrene	0.062 ca	--	mg/kg	**0.37**	**0.32**							
	8270C	Benzo(b)fluoranthene	0.62 ca	--	mg/kg	0.5	0.45							
	8270C	Benzo(g,h,i)perylene	--	--	mg/kg	0.31	0.23							
	8270C	Benzo(k)fluoranthene	6.2 ca	--	mg/kg	0.21	0.16							
	8270C	Benzoic acid	100000 max	--	mg/kg	- R	- R							
	8270C	Benzyl alcohol	1833 nc	--	mg/kg	0.33 U	0.345 U							
	8270C	Bis(2-chloroethoxy)methane	--	--	mg/kg	0.033 U	0.0345 U							
	8270C	Bis(2-chloroethyl) ether	0.22 ca	--	mg/kg	0.033 U	0.0345 U							
	8270C	Bis(2-ethylhexyl) phthalate	35 ca	--	mg/kg	0.08 U	0.085 U							
	8270C	Butylbenzyl phthalate	1222 nc	--	mg/kg	0.033 U	0.0345 U							
	8270C	Carbazole	24 ca	--	mg/kg	0.08 U	0.085 U							
	8270C	Chrysene	62 ca	--	mg/kg	0.37	0.33							
	8270C	Dibenzo(a,h)anthracene	0.062 ca	--	mg/kg	**0.07**	0.052							
	8270C	Dibenzofuran	15 nc	--	mg/kg	0.012 J	0.011 J							
	8270C	Diethyl phthalate	4888 nc	--	mg/kg	0.033 U	0.0345 U							
	8270C	Dimethyl phthalate	100000 max	--	mg/kg	0.033 U	0.0345 U							
	8270C	Di-n-butyl phthalate	611 nc	--	mg/kg	0.08 U	0.085 U							
	8270C	Di-n-octyl phthalate	244 nc	--	mg/kg	0.16 U	0.17 U							
	8270C	Fluoranthene	229 nc	--	mg/kg	0.64	0.59							
	8270C	Fluorene	275 nc	--	mg/kg	0.021 J	0.018 J							
	8270C	Hexachlorobenzene	0.30 ca	--	mg/kg	0.016 U	0.017 U							
	8270C	Hexachlorobutadiene	6.2 ca	--	mg/kg	0.08 U	0.085 U							

Table ASY-6
Atlas Scrap Yard Summary of All Surface Soil (0-1ft) Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYss-027M-DUP	ASYss-027M-SO	ASYss-028M-SO	ASYss-029M-SO	ASYss-030M-SO	ASYss-031M-SO	ASYss-032M-SO	ASYss-033M-SO	ASYss-034M-SO
						Sample Date:	11/3/2004	11/3/2004	11/3/2004	11/11/2004	11/10/2004	11/10/2004	11/2/2004	11/3/2004	11/3/2004
						Sample Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-1 ft	0-1 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Surface Soil Background Criteria	Units									
	8270C	Hexachlorocyclopentadiene	37	nc	--	mg/kg	0.49 U	0.5 U							
	8270C	Hexachloroethane	35	ca	--	mg/kg	0.08 U	0.085 U							
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg	0.23	0.18							
	8270C	Isophorone	512	ca	--	mg/kg	0.08 U	0.085 U							
	8270C	Naphthalene	5.6	nc	--	mg/kg	0.015 J	0.013 J							
	8270C	Nitrobenzene	2	nc	--	mg/kg	0.016 U	0.017 U							
	8270C	n-Nitroso-di-n-propylamine	0.069	ca	--	mg/kg	0.033 U	0.0345 U							
	8270C	n-Nitrosodiphenylamine	99	ca	--	mg/kg	0.016 U	0.017 U							
	8270C	Pentachlorophenol	3.0	ca	--	mg/kg	0.16 U	0.17 U							
	8270C	Phenanthrene	--		--	mg/kg	0.22	0.21							
	8270C	Phenol	1833	nc	--	mg/kg	0.08 U	0.085 U							
	8270C	Pyrene	232	nc	--	mg/kg	0.6	0.55							
Explosives	8330	1,3,5-Trinitrobenzene	183	nc	--	mg/kg	0.05 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.049 U
	8330	1,3-Dinitrobenzene	0.61	nc	--	mg/kg	0.05 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.049 U
	8330	2,4,6-TNT	16	ca	--	mg/kg	0.05 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.049 U
	8330	2,4-Dinitrotoluene	12	nc	--	mg/kg	0.05 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.049 U
	8330	2,6-Dinitrotoluene	6.1	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	2-Amino-4,6-Dinitrotoluene	--		--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	2-Nitrotoluene	0.88	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	3-Nitrotoluene	73	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	4-Amino-2,6-Dinitrotoluene	--		--	mg/kg	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.145 U
	8330	4-Nitrotoluene	12	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	HMX	306	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	Nitrobenzene	2	nc	--	mg/kg	0.05 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.05 U	0.0495 U	0.0495 U	0.049 U
	8330	RDX	4.4	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	8330	Tetryl	61	nc	--	mg/kg	0.2 U	0.2 U	0.2 U	0.2 U	0.195 U	0.2 U	0.2 U	0.195 U	0.195 U
Propellants	353.2 Modified	Nitrocellulose	--		--	mg/kg	1.2	1							
	8332	Nitroglycerine	35	ca	--	mg/kg	0.25 U	0.245 U							
	SW8330 Modified	Nitroguanidine	611	nc	--	mg/kg	0.125 U	0.125 U							

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-7
Atlas Scrap Yard Summary of All Sediment Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
						Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
						Sample Depth:	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Sediment Background Criteria	Units										
Metals	6010B	Aluminum	7614	nc	13900	mg/kg	7000	**8300**	5100 J	**14000**	**9800**	**9100**	**14000**	**15000**	**9200**	**15000**
	6010B	Arsenic	0.39	ca	19.5	mg/kg	**17**	**17**	**13 J**	**9.9**	**8**	**29**	**13**	**11**	**12**	**10**
	6010B	Barium	538	nc	123	mg/kg	110	150	110	150	110	**570**	160	160	84	140
	6010B	Beryllium	15	nc	0.38	mg/kg	0.53	0.62	0.47 J	2	0.8	1.1	1.5	1.6	0.74	1.2
	6010B	Cadmium	3.7	nc	0.00	mg/kg	0.34	0.92	0.125 U	0.49	2	0.79	0.68	0.62	0.175 U	1.8
	6010B	Calcium	--[n]		5510	mg/kg	7900	10000	3100 J	42000	9000	15000	11000	13000	1700	5500
	6010B	Chromium	30	ca	18.1	mg/kg	28	30	18 J	20	26	17	20	21	19	20
	6010B	Cobalt	30	ca	9.1	mg/kg	9.2	9.2	6.8	7.8	6.9	**79**	9	9.2	14	7.3
	6010B	Copper	313	nc	27.6	mg/kg	57	61	42 J	23	51	31	31	31	20	31
	6010B	Iron	2346	nc	28200	mg/kg	**42000**	**36000**	**47000**	**19000**	**11000**	**51000**	**24000**	**24000**	**29000**	**17000**
	6010B	Lead	400	pbk	27.4	mg/kg	85	170	160 J	48	66	77	65	66	15	37
	6010B	Magnesium	--[n]		2760	mg/kg	2700	3200	1600 J	7200	1900	2400	3800	3900	2300	2100
	6010B	Manganese	176	nc	1950	mg/kg	**540**	**580**	**440 J**	**1000**	170	**34000**	**800**	**840**	**940**	**420**
	6010B	Nickel	156	nc	17.7	mg/kg	32	29	18	19	25	48	29	30	31	20
	6010B	Potassium	--[n]		1950	mg/kg	910	1100	550 J	1700	1400	1000	1700	1800	980	1400
	6010B	Selenium	39	nc	1.7	mg/kg	1.15 U	1.1 U	0.75 UJ	6.7	14	10	7.2	6.8	1.05 U	2.7
	6010B	Silver	39	nc	0.00	mg/kg	0.75 U	0.18	0.5 U	1.2 U	3.4 U	1.3	1.15 U	1.6 U	0.7 U	1.6 U
	6010B	Sodium	--[n]		112	mg/kg	340	380	330	530	1000 U	500	530	550	280	450
	6010B	Vanadium	7.8	nc	26.1	mg/kg	**33**	**36**	**28**	**20**	**56**	**32**	**29**	**31**	**20**	**24**
	6010B	Zinc	2346	nc	532	mg/kg	170	210	270 J	190	520	460	310	330	69	310
	7041	Antimony	3.1	nc	0.00	mg/kg	0.78	0.84	- R	1.85 U	7 U	2.55 U	2.5 U	2.65 U	0.8 U	2.25 U
	7471A	Mercury	2.3	nc	0.06	mg/kg	1.6	**5.2**	0.78 J	0.12	0.2	0.16	0.22	0.23	0.046	0.14
	7841	Thallium	0.52	nc	0.89	mg/kg	0.465 U	0.485 U	0.29	0.8 U	3.05 U	1.1 U	1.05 U	1.15 U	0.35 U	0.95 U
PRG - preliminary r	8081A	4,4'-DDD	2.4	ca	--	mg/kg					0.195 U					
	8081A	4,4'-DDE	1.7	ca	--	mg/kg					0.23 U					
	8081A	4,4'-DDT	1.7	ca	--	mg/kg					0.195 U					
	8081A	Aldrin	0.029	ca	--	mg/kg					0.195 U					
	8081A	alpha-BHC	0.09	sat	--	mg/kg					0.195 U					
	8081A	alpha-Chlordane	1.6	ca	--	mg/kg					0.195 U					
	8081A	beta-BHC	0.32	ca	--	mg/kg					0.195 U					
	8081A	delta-BHC	--		--	mg/kg					0.195 U					
	8081A	Dieldrin	0.030	ca	--	mg/kg					0.195 U					
	8081A	Endosulfan I	37	nc	--	mg/kg					0.195 UJ					
	8081A	Endosulfan II	37	nc	--	mg/kg					0.195 U					
	8081A	Endosulfan sulfate	37	nc	--	mg/kg					0.195 U					
	8081A	Endrin	1.8	nc	--	mg/kg					0.195 U					
	8081A	Endrin aldehyde	--		--	mg/kg					0.195 U					
	8081A	Endrin ketone	--		--	mg/kg					0.195 U					
	8081A	gamma-BHC	0.44	ca	--	mg/kg					0.195 U					
	8081A	gamma-Chlordane	1.6	ca	--	mg/kg					0.195 U					
	8081A	Heptachlor	0.11	ca	--	mg/kg					0.195 U					
	8081A	Heptachlor epoxide	0.053	ca	--	mg/kg					0.195 U					
	8081A	Methoxychlor	31	nc	--	mg/kg					0.95 U					

Table ASY-7
Atlas Scrap Yard Summary of All Sediment Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
					Sample Depth:	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Sediment Background Criteria	Units										
	8081A	Toxaphene	0.44 ca	--	mg/kg					1.9 U					
PCBs	8082	Aroclor 1016	0.39 nc	--	mg/kg					0.19 UJ					
	8082	Aroclor 1221	0.22 ca	--	mg/kg					0.19 UJ					
	8082	Aroclor 1232	0.22 ca	--	mg/kg					0.095 UJ					
	8082	Aroclor 1242	0.22 ca	--	mg/kg					0.19 UJ					
	8082	Aroclor 1248	0.22 ca	--	mg/kg					0.095 UJ					
	8082	Aroclor 1254	0.22 ca	--	mg/kg					0.19 UJ					
	8082	Aroclor 1260	0.22 ca	--	mg/kg					0.19 UJ					
VOCs	8260B	1,1,1-Trichloroethane	1200 sat	--	mg/kg					0.29 U					
	8260B	1,1,2,2-Tetrachloroethane	0.41 ca	--	mg/kg					0.29 U					
	8260B	1,1,2-Trichloroethane	0.73 ca	--	mg/kg					0.29 U					
	8260B	1,1-Dichloroethane	51 nc	--	mg/kg					0.29 U					
	8260B	1,1-Dichloroethene	12 nc	--	mg/kg					0.29 U					
	8260B	1,2-Dibromoethane	0.032 ca	--	mg/kg					0.29 U					
	8260B	1,2-Dichloroethane	0.28 ca	--	mg/kg					0.29 U					
	8260B	1,2-Dichloroethene (total)	6.9 nc	--	mg/kg					0.6 U					
	8260B	1,2-Dichloropropane	0.34 ca	--	mg/kg					0.29 U					
	8260B	2-Butanone	2231 nc	--	mg/kg					0.85 U					
	8260B	2-Hexanone	530 nc	--	mg/kg					0.6 U					
	8260B	4-Methyl-2-pentanone	528 nc	--	mg/kg					0.6 U					
	8260B	Acetone	1412 nc	--	mg/kg					0.71 J					
	8260B	Benzene	0.64 ca	--	mg/kg					0.29 U					
	8260B	Bromochloromethane	--	--	mg/kg					0.29 U					
	8260B	Bromodichloromethane	0.82 ca	--	mg/kg					0.29 U					
	8260B	Bromoform	62 ca	--	mg/kg					0.29 U					
	8260B	Bromomethane	0.39 nc	--	mg/kg					0.29 U					
	8260B	Carbon disulfide	36 nc	--	mg/kg					0.29 U					
	8260B	Carbon tetrachloride	0.25 ca	--	mg/kg					0.29 U					
	8260B	Chlorobenzene	15 nc	--	mg/kg					0.29 U					
	8260B	Chloroethane	3.0 ca	--	mg/kg					0.29 U					
	8260B	Chloroform	0.22 ca	--	mg/kg					0.29 U					
	8260B	Chloromethane	4.7 nc	--	mg/kg					0.29 U					
	8260B	cis-1,2-Dichloroethene	4.3 nc	--	mg/kg					0.29 U					
	8260B	cis-1,3-Dichloropropene	0.78 ca	--	mg/kg					0.29 U					
	8260B	Dibromochloromethane	1.1 ca	--	mg/kg					0.29 U					
	8260B	Ethylbenzene	395 sat	--	mg/kg					0.29 U					
	8260B	m&p-Xylenes	27 nc	--	mg/kg					0.6 U					
	8260B	Methylene chloride	9.1 ca	--	mg/kg					0.6 U					
	8260B	o-Xylene	27 nc	--	mg/kg					0.29 U					
	8260B	Styrene	1700 sat	--	mg/kg					0.29 U					
	8260B	Tetrachloroethene	0.48 ca	--	mg/kg					0.29 UJ					
	8260B	Toluene	520 sat	--	mg/kg					0.29 U					
	8260B	Total Xylenes	27 nc	--	mg/kg					0.6 U					

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RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
					Sample Depth:	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Sediment Background Criteria	Units										
	8260B	trans-1,2-Dichloroethene	6.9 nc	--	mg/kg					0.29 U					
	8260B	trans-1,3-Dichloropropene	0.78 ca	--	mg/kg					0.29 U					
	8260B	Trichloroethene	0.053 ca	--	mg/kg					0.29 U					
	8260B	Vinyl chloride	0.079 ca	--	mg/kg					0.29 UJ					
SVOCs	8270C	1,2,4-Trichlorobenzene	6.2 nc	--	mg/kg					37.5 U					
	8270C	1,2-Dichlorobenzene	600 sat	--	mg/kg					37.5 U					
	8270C	1,3-Dichlorobenzene	53 nc	--	mg/kg					37.5 U					
	8270C	1,4-Dichlorobenzene	3.4 ca	--	mg/kg					37.5 U					
	8270C	2,2-oxybis (1-chloropropane)	2.9 ca	--	mg/kg					37.5 U					
	8270C	2,4,5-Trichlorophenol	611 nc	--	mg/kg					75 U					
	8270C	2,4,6-Trichlorophenol	0.61 nc	--	mg/kg					37.5 U					
	8270C	2,4-Dichlorophenol	18 nc	--	mg/kg					75 U					
	8270C	2,4-Dimethylphenol	122 nc	--	mg/kg					75 U					
	8270C	2,4-Dinitrophenol	12 nc	--	mg/kg					- R					
	8270C	2,4-Dinitrotoluene	12 nc	--	mg/kg					7.5 U					
	8270C	2,6-Dinitrotoluene	6.1 nc	--	mg/kg					7.5 U					
	8270C	2-Chloronaphthalene	494 nc	--	mg/kg					37.5 U					
	8270C	2-Chlorophenol	6.3 nc	--	mg/kg					37.5 U					
	8270C	2-Methylnaphthalene	--	--	mg/kg					7.5 U					
	8270C	2-Methylphenol	306 nc	--	mg/kg					15 U					
	8270C	2-Nitroaniline	18.3 nc	--	mg/kg					37.5 U					
	8270C	2-Nitrophenol	--	--	mg/kg					75 U					
	8270C	3,3'-Dichlorobenzidine	1.1 ca	--	mg/kg					37.5 U					
	8270C	3-Nitroaniline	1.8 nc	--	mg/kg					150 U					
	8270C	4,6-Dinitro-2-methylphenol	0.61 nc	--	mg/kg					150 U					
	8270C	4-Bromophenyl phenyl ether	--	--	mg/kg					37.5 U					
	8270C	4-Chloro-3-methylphenol	--	--	mg/kg					75 U					
	8270C	4-Chloroaniline	24 nc	--	mg/kg					150 U					
	8270C	4-Chlorophenyl phenyl ether	--	--	mg/kg					37.5 U					
	8270C	4-Methylphenol	31 nc	--	mg/kg					15 U					
	8270C	4-Nitroaniline	23 ca	--	mg/kg					150 U					
	8270C	4-Nitrophenol	--	--	mg/kg					150 U					
	8270C	Acenaphthene	368 nc	--	mg/kg					7.5 U					
	8270C	Acenaphthylene	--	--	mg/kg					7.5 U					
	8270C	Anthracene	2189 nc	--	mg/kg					7.5 U					
	8270C	Benzo(a)anthracene	0.62 ca	--	mg/kg					**10 J**					
	8270C	Benzo(a)pyrene	0.062 ca	--	mg/kg					7.5 U					
	8270C	Benzo(b)fluoranthene	0.62 ca	--	mg/kg					7.5 U					
	8270C	Benzo(g,h,i)perylene	--	--	mg/kg					7.5 U					
	8270C	Benzo(k)fluoranthene	6.2 ca	--	mg/kg					7.5 U					
	8270C	Benzoic acid	100000 max	--	mg/kg					150 U					
	8270C	Benzyl alcohol	1833 nc	--	mg/kg					150 U					
	8270C	Bis(2-chloroethoxy)methane	--	--	mg/kg					15 U					
	8270C	Bis(2-chloroethyl) ether	0.22 ca	--	mg/kg					15 U					

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RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
					Sample Depth:	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)		Sediment Background Criteria	Units									
	8270C	Bis(2-ethylhexyl) phthalate	35	ca	--	mg/kg					37.5 U				
	8270C	Butylbenzyl phthalate	1222	nc	--	mg/kg					15 U				
	8270C	Carbazole	24	ca	--	mg/kg					37.5 U				
	8270C	Chrysene	62	ca	--	mg/kg					16				
	8270C	Dibenzo(a,h)anthracene	0.062	ca	--	mg/kg					7.5 U				
	8270C	Dibenzofuran	15	nc	--	mg/kg					15 U				
	8270C	Diethyl phthalate	4888	nc	--	mg/kg					15 U				
	8270C	Dimethyl phthalate	100000	max	--	mg/kg					15 U				
	8270C	Di-n-butyl phthalate	611	nc	--	mg/kg					37.5 U				
	8270C	Di-n-octyl phthalate	244	nc	--	mg/kg					75 U				
	8270C	Fluoranthene	229	nc	--	mg/kg					7.5 U				
	8270C	Fluorene	275	nc	--	mg/kg					7.5 U				
	8270C	Hexachlorobenzene	0.30	ca	--	mg/kg					7.5 U				
	8270C	Hexachlorobutadiene	6.2	ca	--	mg/kg					37.5 U				
	8270C	Hexachlorocyclopentadiene	37	nc	--	mg/kg					225 U				
	8270C	Hexachloroethane	35	ca	--	mg/kg					37.5 U				
	8270C	Indeno(1,2,3-cd)pyrene	0.62	ca	--	mg/kg					7.5 U				
	8270C	Isophorone	512	ca	--	mg/kg					37.5 U				
	8270C	Naphthalene	5.6	nc	--	mg/kg					7.5 U				
	8270C	Nitrobenzene	2	nc	--	mg/kg					7.5 U				
	8270C	n-Nitroso-di-n-propylamine	0.069	ca	--	mg/kg					15 U				
	8270C	n-Nitrosodiphenylamine	99	ca	--	mg/kg					7.5 U				
	8270C	Pentachlorophenol	3.0	ca	--	mg/kg					75 U				
	8270C	Phenanthrene	--		--	mg/kg					11.5 U				
	8270C	Phenol	1833	nc	--	mg/kg					37.5 U				
	8270C	Pyrene	232	nc	--	mg/kg					62				
Explosives	8330	1,3,5-Trinitrobenzene	183	nc	--	mg/kg	0.05 U	0.049 U	0.0495 U	0.0495 U	0.49 U	0.25 U	0.25 U	0.25 U	0.0495 U	0.05 U
	8330	1,3-Dinitrobenzene	0.61	nc	--	mg/kg	0.05 U	0.049 U	0.0495 U	0.0495 U	0.49 U	0.25 U	0.25 U	0.25 U	0.0495 U	0.05 U
	8330	2,4,6-TNT	16	ca	--	mg/kg	0.05 U	0.049 U	0.0495 U	0.0495 U	0.49 U	0.25 U	0.25 U	0.25 U	0.0495 U	0.05 U
	8330	2,4-Dinitrotoluene	12	nc	--	mg/kg	0.05 U	0.049 U	0.0495 U	0.0495 U	0.49 U	0.25 U	0.25 U	0.25 U	0.0495 U	0.05 U
	8330	2,6-Dinitrotoluene	6.1	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	2-Amino-4,6-Dinitrotoluene	--		--	mg/kg	0.1 U	0.1 U	0.12 J	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.079 J
	8330	2-Nitrotoluene	0.88	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	3-Nitrotoluene	73	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	4-Amino-2,6-Dinitrotoluene	--		--	mg/kg	0.15 U	0.145 U	0.15 U	0.15 U	1.45 U	0.75 U	0.75 U	0.75 U	0.15 U	0.15 U
	8330	4-Nitrotoluene	12	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	HMX	306	nc	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	Nitrobenzene	2	nc	--	mg/kg	0.05 U	0.049 U	0.0495 U	0.0495 U	0.49 U	0.25 U	0.25 U	0.25 U	0.0495 U	0.05 U
	8330	RDX	4.4	ca	--	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	1 U	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
	8330	Tetryl	61	nc	--	mg/kg	0.2 U	0.195 U	0.2 U	0.2 U	1.95 U	1 U	1 U	1 U	0.2 U	0.2 U
Propellants	353.2 Modified	Nitrocellulose	--		--	mg/kg					0.7 U					
	8332	Nitroglycerine	35	ca	--	mg/kg					2.45 U					
	SW8330 Modified	Nitroguanidine	611	nc	--	mg/kg					0.125 U					

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						ASYsd-001-DUP	ASYsd-001-SD	ASYsd-002-SD	ASYsd-008-SD	ASYsd-010-SD	ASYsd-011-SD	ASYsd-012-DUP	ASYsd-012-SD	ASYsd-017-SD	ASYsd-024M-SD
				Sample Date:		12/7/2004	12/7/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/10/2004	11/11/2004
				Sample Depth:		0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft	0-0.5 ft
Group	Method	Parameter	Region 9 PRG (Residential Soil)	Sediment Background Criteria	Units										

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
mg/kg - means milligrams per Kilogram (parts per million - ppm)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style.

Table ASY-8
Atlas Scrap Yard Summary of All Surface Water Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW	ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	4.6 ft	5.4 ft	6 ft	8 ft	8 ft	2.8 ft	3.5 ft	3.5 ft	6.1 ft	3.9 ft	2.5 ft	2.3 ft	2.4 ft	2.4 ft	surface	surface	6.03 ft
Group	Method	Parameter	Region 9 PRG (Tap Water)		Surface Water Background Criteria	Units																	
Metals	6010B	Aluminum	36499	nc	3370	ug/l	990	480	490	430	440	560	430	570	600	450	800	560	420	390	400	100	690
	6010B	Barium	2555	nc	47.5	ug/l	32	38	35	31	30	30	33	30	31	33	34	36	41	41	32	58	33
	6010B	Beryllium	73	nc	0.00	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	6010B	Cadmium	18	nc	0.00	ug/l	0.31	1 U	1 U	1 U	0.25	0.26	1 U	1 U	1 U	1 U	0.26	1 U	1 U	1 U	1 U	1 U	0.5
	6010B	Calcium	--[n]		41400	ug/l	23000	16000	27000	21000	21000	46000	39000	40000	36000	37000	41000	51000	62000	62000	42000	93000	8800
	6010B	Chromium	109	nc	0.00	ug/l	2.1	1.4	1.1	1.4	1.1	1.6	1.4	1.7	1.7	1.2	1.5	1.1	1.8	1.6	5 U	5 U	1.7
	6010B	Cobalt	730	nc	0.00	ug/l	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	6010B	Copper	1460	nc	7.9	ug/l	3.8	2.7	2.6	2.5	2.3	2.4	2.2	5 U	2.2	5 U	5 U	3.1	5 U	2.4	5 U	5 U	5 U
	6010B	Iron	10950	nc	2560	ug/l	1600	1800	820	970	940	910	580	770	870	580	990	720	510	490	480	350	840
	6010B	Magnesium	--[n]		10800	ug/l	3000	2600	3600	3200	3200	4800	4600	4500	4000	4700	4500	5500	6300	6200	5300	12000	1900
	6010B	Manganese	876	nc	391	ug/l	130	150	130	100	100	26	52	45	33	63	33	25	21	22	54	240	110
	6010B	Nickel	730	nc	0.00	ug/l	2.1	2.8	2.1	2.2	2.3	5 U	1.8	1.5	5 U	1.6	5 U	5 U	5 U	5 U	1.4	5 U	1.7
	6010B	Potassium	--[n]		3170	ug/l	2100	1500	1600	1600	1600	2200	1700	2000	2000	1500	1800	2100	2100	2100	1500	3500	1200
	6010B	Selenium	182	nc	0.00	ug/l	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	3.4	3.6	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	5.2	7.5 U
	6010B	Silver	182	nc	0.00	ug/l	5 U	5 U	5 U	5 U	5 U	0.55 U	0.425 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.5 U
	6010B	Sodium	--[n]		21300	ug/l	950	1200	1200	1200	1200	1200	1400	1100	1100	1600	1400	1200	1500	1500	2000	3000	940
	6010B	Vanadium	36	nc	0.00	ug/l	1.5	5 U	5 U	5 U	5 U	5 U	1.5	1.2	5 U	5 U	1.7	5 U	1.4	5 U	5 U	5 U	1.3
	6010B	Zinc	10950	nc	42	ug/l	6 U	9.5 U	8 U	7.5 U	7.5 U	7 U	5.5 U	5.5 U	5.5 U	7 U	6.5 U	5.5 U	6 U	6 U	13	5.4	11.5 U
	7041	Antimony	15	nc	0.00	ug/l	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.75 U	3.2	3.75 U
	7060A	Arsenic	0.045	ca	3.2	ug/l	**0.96**	1 U	1 U	1 U	**0.56**	1 U	1 U	1 U	1 U	1 U	**0.76**	1 U	1 U	1 U	1 U	1 U	1 U
	7421	Lead	15	mcl	0.00	ug/l	1.8 U	0.75 U	1.2 U	0.7 U	0.85 U	1.5 U	1.5 U	1	1.4	0.7 U	2.4	1.7	1.4	1.4	2	1.5 U	1.5 U
	7470A	Mercury	11	nc	0.00	ug/l	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	7841	Thallium	2.4	nc	0.00	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Pesticides	8081A	4,4'-DDD	0.28	ca	--	ug/l	0.05 U	0.055 U	0.05 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.05 U	0.055 U	0.05 U	0.05 U	0.05 U	0.055 U	0.055 U	0.055 U
	8081A	4,4'-DDE	0.20	ca	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	4,4'-DDT	0.20	ca	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Aldrin	0.0040	ca	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	alpha-BHC	0.011	nc	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	alpha-Chlordane	0.19	ca	--	ug/l	0.024 U	0.025 U	0.024 U	0.0245 U	0.025 U	0.024 U	0.025 U	0.024 U	0.024 U	0.0235 U	0.025 U	0.0225 U	0.0235 U	0.023 U	0.0255 U	0.0245 U	0.0245 U
	8081A	beta-BHC	0.037	ca	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	delta-BHC	--		--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	Dieldrin	0.0042	ca	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	Endosulfan I	220	nc	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	Endosulfan II	220	nc	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Endosulfan sulfate	220	nc	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Endrin	11	nc	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 UJ	0.0495 UJ	0.048 UJ	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 UJ
	8081A	Endrin aldehyde	--		--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Endrin ketone	--		--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	gamma-BHC	0.052	ca	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	gamma-Chlordane	0.19	ca	--	ug/l	0.0475 U	0.0495 U	0.0475 U	0.0485 U	0.0495 U	0.048 U	0.0495 U	0.048 U	0.048 U	0.0465 U	0.0495 U	0.0455 U	0.0465 U	0.046 U	0.05 U	0.049 U	0.049 U
	8081A	Heptachlor	0.015	ca	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Heptachlor epoxide	0.0074	ca	--	ug/l	0.07 U	0.075 U	0.07 U	0.075 U	0.075 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.07 U	0.07 U	0.07 U	0.075 U	0.075 U	0.075 U
	8081A	Methoxychlor	182	nc	--	ug/l	0.285 U	0.295 U	0.285 U	0.29 U	0.295 U	0.29 U	0.295 U	0.29 U	0.29 U	0.28 U	0.295 U	0.275 U	0.28 U	0.275 U	0.305 U	0.295 U	0.295 U
	8081A	Toxaphene	0.061	ca	--	ug/l	0.24 U	0.25 U	0.24 U	0.245 U	0.25 U	0.24 U	0.25 U	0.24 U	0.24 U	0.235 U	0.25 U	0.225 U	0.235 U	0.23 U	0.255 U	0.245 U	0.245 U

Table ASY-8
Atlas Scrap Yard Summary of All Surface Water Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW	ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	4.6 ft	5.4 ft	6 ft	8 ft	8 ft	2.8 ft	3.5 ft	3.5 ft	6.1 ft	3.9 ft	2.5 ft	2.3 ft	2.4 ft	2.4 ft	surface	surface	6.03 ft
Group	Method	Parameter	Region 9 PRG (Tap Water)	Surface Water Background Criteria	Units																	
PCBs	8082	Aroclor 1016	0.96 ca	--	ug/l	0.285 U	0.295 U	0.285 U	0.29 U	0.295 U	0.29 U	0.295 U	0.29 U	0.29 U	0.28 U	0.295 U	0.275 U	0.28 U	0.275 U	0.305 U	0.295 U	0.295 U
	8082	Aroclor 1221	0.034 ca	--	ug/l	0.6 U	0.65 U	0.6 U	0.65 U	0.65 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.65 U	0.65 U
	8082	Aroclor 1232	0.034 ca	--	ug/l	0.6 U	0.65 U	0.6 U	0.65 U	0.65 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.65 U	0.65 U
	8082	Aroclor 1242	0.034 ca	--	ug/l	0.6 U	0.65 U	0.6 U	0.65 U	0.65 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.65 U	0.65 U
	8082	Aroclor 1248	0.034 ca	--	ug/l	0.7 U	0.75 U	0.7 U	0.75 U	0.75 U	0.7 U	0.75 U	0.7 U	0.7 U	0.7 U	0.75 U	0.7 U	0.7 U	0.7 U	0.75 U	0.75 U	0.75 U
	8082	Aroclor 1254	0.034 ca	--	ug/l	0.6 U	0.65 U	0.6 U	0.65 U	0.65 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.6 U	0.6 U	0.6 U	0.65 U	0.65 U	0.65 U
	8082	Aroclor 1260	0.034 ca	--	ug/l	0.285 U	0.295 U	0.285 U	0.29 U	0.295 U	0.29 U	0.295 U	0.29 U	0.29 U	0.28 U	0.295 U	0.275 U	0.28 U	0.275 U	0.305 U	0.295 U	0.295 U
VOCs	8260B	1,1,1-Trichloroethane	3172 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1,2,2-Tetrachloroethane	0.055 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1,2-Trichloroethane	0.20 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1-Dichloroethane	811 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1-Dichloroethene	339 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dibromoethane	0.0056 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloroethane	0.12 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloroethene (total)	120 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloropropane	0.16 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	2-Butanone	6968 nc	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	2-Hexanone	2000 nc	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	4-Methyl-2-pentanone	1993 nc	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	Acetone	5475 nc	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	Benzene	0.35 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromochloromethane	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromodichloromethane	0.18 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromoform	8.5 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromomethane	8.7 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Carbon disulfide	1043 nc	--	ug/l	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	8260B	Carbon tetrachloride	0.17 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chlorobenzene	106 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloroethane	4.6 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloroform	0.17 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloromethane	158 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	cis-1,2-Dichloroethene	61 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	cis-1,3-Dichloropropene	0.40 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Dibromochloromethane	0.13 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Ethylbenzene	1340 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	m&p-Xylenes	206 nc	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	8260B	Methylene chloride	4.3 ca	--	ug/l	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
	8260B	o-Xylene	206 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Styrene	1641 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Tetrachloroethene	0.10 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Toluene	723 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Total Xylenes	206 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	trans-1,2-Dichloroethene	122 nc	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	trans-1,3-Dichloropropene	0.40 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Trichloroethene	0.028 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Vinyl chloride	0 020 ca	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table ASY-8
Atlas Scrap Yard Summary of All Surface Water Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW	ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	4.6 ft	5.4 ft	6 ft	8 ft	8 ft	2.8 ft	3.5 ft	3.5 ft	6.1 ft	3.9 ft	2.5 ft	2.3 ft	2.4 ft	2.4 ft	surface	surface	6.03 ft
Group	Method	Parameter	Region 9 PRG (Tap Water)	Surface Water Background Criteria	Units																	
SVOCs	8270C	1,2,4-Trichlorobenzene	7.2 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	1,2-Dichlorobenzene	370 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	1,3-Dichlorobenzene	182 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	1,4-Dichlorobenzene	0.50 ca	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	2,2-oxybis (1-chloropropane)	0.27 ca	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	2,4,5-Trichlorophenol	3650 nc	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	2,4,6-Trichlorophenol	3.6 nc	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	2,4-Dichlorophenol	109 nc	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	2,4-Dimethylphenol	730 nc	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	2,4-Dinitrophenol	73 nc	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U
	8270C	2,4-Dinitrotoluene	73 nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 U	0.475 U
	8270C	2,6-Dinitrotoluene	36 nc	--	ug/l	0.235 U	0.245 U	0.24 U	0.245 U	0.25 U	0.245 U	0.24 U	0.24 U	0.24 U	0.24 U	0.235 U	0.24 U	0.24 U	0.24 U	0.235 U	0.245 U	0.24 U
	8270C	2-Chloronaphthalene	487 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	2-Chlorophenol	30 nc	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	2-Methylnaphthalene	--	--	ug/l	0.235 U	0.245 U	0.24 U	0.245 U	0.25 U	0.245 U	0.24 U	0.24 U	0.24 U	0.24 U	0.235 U	0.24 U	0.24 U	0.24 U	0.235 U	0.245 U	0.24 U
	8270C	2-Methylphenol	1825 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	2-Nitroaniline	109 nc	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	2-Nitrophenol	--	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	3,3'-Dichlorobenzidine	0.15 ca	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	3-Nitroaniline	3.2 ca	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	4,6-Dinitro-2-methylphenol	3.6 nc	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U
	8270C	4-Bromophenyl phenyl ether	--	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	4-Chloro-3-methylphenol	--	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	4-Chloroaniline	146 nc	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	4-Chlorophenyl phenyl ether	--	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	4-Methylphenol	182 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	4-Nitroaniline	3.2 ca	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	4-Nitrophenol	--	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U
	8270C	Acenaphthene	365 nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	1.8	0.475 U
	8270C	Acenaphthylene	--	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 U	0.475 U
	8270C	Anthracene	1825 nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.58 J	0.475 U
	8270C	Benzo(a)anthracene	0.092 ca	--	ug/l	0.095 U	0.1 U	0.095 U	0.1 U	0.1 U	0.1 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.1 U	0.095 U
	8270C	Benzo(a)pyrene	0.0092 ca	--	ug/l	0.185 U	0.195 U	0.19 U	**0.15 J**	0.2 U	0.195 U	0.19 U	0.19 U	0.19 U	**0.1 J**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.195 U	0.19 U
	8270C	Benzo(b)fluoranthene	0.092 ca	--	ug/l	0.185 U	0.195 U	0.19 U	**0.13 J**	0.2 U	0.195 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.195 U	0.19 U
	8270C	Benzo(g,h,i)perylene	--	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 U	0.475 U
	8270C	Benzo(k)fluoranthene	0.92 ca	--	ug/l	0.185 U	0.195 U	0.19 U	0.18 J	0.2 U	0.195 U	0.19 U	0.19 U	0.19 U	0.12 J	0.19 U	0.19 U	0.19 U	0.22 J	0.19 U	0.195 U	0.19 U
	8270C	Benzoic acid	145979 nc	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 U	10 U	9.5 U	9.5 U	- R	9.5 U	- R	- R	- R	- R	9.5 U	10 U	- R
	8270C	Benzyl alcohol	10950 nc	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U
	8270C	Bis(2-chloroethoxy)methane	--	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Bis(2-chloroethyl) ether	0.010 ca	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Bis(2-ethylhexyl) phthalate	4.8 ca	--	ug/l	7 U	7.5 U	7 U	7.5 U	7.5 UJ	7.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7.5 U	7 U
	8270C	Butylbenzyl phthalate	7300 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Carbazole	3.4 ca	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	1.2 J	2.4 U
	8270C	Chrysene	9.2 ca	--	ug/l	0.235 U	0.245 U	0.24 U	0.245 U	0.25 U	0.245 U	0.24 U	0.24 U	0.24 U	0.24 U	0.235 U	0.24 U	0.24 U	0.24 U	0.235 U	0.11 J	0.24 U
	8270C	Dibenzo(a,h)anthracene	0.0092 ca	--	ug/l	0.185 U	0.195 U	0.19 U	0.195 U	0.2 U	0.195 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.195 U	0.19 U
	8270C	Dibenzofuran	12 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1.1 J	0.95 U
	8270C	Diethyl phthalate	29199 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Dimethyl phthalate	364867 nc	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Di-n-butyl phthalate	3650 nc	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	Di-n-octyl phthalate	1460 nc	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	Fluoranthene	1460 nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.89 J	0.475 U

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Atlas Scrap Yard Summary of All Surface Water Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

						ASYsw-001-SW	ASYsw-002-SW	ASYsw-003-SW	ASYsw-004-DUP	ASYsw-004-SW	ASYsw-005-SW	ASYsw-006-SW	ASYsw-007-SW	ASYsw-008-SW	ASYsw-009-SW	ASYsw-010-SW	ASYsw-011-SW	ASYsw-012-DUP	ASYsw-012-SW	ASYsw-014-SW	ASYsw-016-SW	ASYsw-017-SW
					Sample Date:	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/7/2004	12/9/2004	12/9/2004	12/9/2004	12/8/2004	12/7/2004	12/8/2004	12/8/2004	12/8/2004	12/8/2004	12/6/2004	12/6/2004	12/10/2004
					Sample Depth:	4.6 ft	5.4 ft	6 ft	8 ft	8 ft	2.8 ft	3.5 ft	3.5 ft	6.1 ft	3.9 ft	2.5 ft	2.3 ft	2.4 ft	2.4 ft	surface	surface	6.03 ft
Group	Method	Parameter	Region 9 PRG (Tap Water)		Surface Water Background Criteria	Units																
	8270C	Fluorene	243	nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	1.7	0.475 U
	8270C	Hexachlorobenzene	0.042	ca	--	ug/l	0.235 U	0.245 U	0.24 U	0.245 U	0.25 U	0.245 U	0.24 U	0.24 U	0.24 U	0.24 U	0.235 U	0.24 U	0.24 U	0.24 U	0.235 U	0.245 U	0.24 U
	8270C	Hexachlorobutadiene	0.86	ca	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	Hexachlorocyclopentadiene	219	nc	--	ug/l	9.5 U	10 U	9.5 U	10 U	10 UJ	- R	- R	- R	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	- R	- R	9.5 U
	8270C	Hexachloroethane	4.8	ca	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	Indeno(1,2,3-cd)pyrene	0.092	ca	--	ug/l	0.185 U	0.195 U	0.19 U	**0.099 J**	0.2 U	0.195 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	**0.2 J**	0.19 U	0.195 U	0.19 U
	8270C	Isophorone	71	ca	--	ug/l	0.95 U	1 U	0.95 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U
	8270C	Naphthalene	6.2	nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.6 J	0.475 U
	8270C	Nitrobenzene	3.4	nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 U	0.475 U
	8270C	n-Nitroso-di-n-propylamine	0.0096	ca	--	ug/l	0.235 U	0.245 U	0.24 U	0.245 U	0.25 U	0.245 U	0.24 U	0.24 U	0.24 U	0.24 U	0.235 U	0.24 U	0.24 U	0.24 U	0.235 U	0.245 U	0.24 U
	8270C	n-Nitrosodiphenylamine	14	ca	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 U	0.475 U
	8270C	Pentachlorophenol	0.56	ca	--	ug/l	4.65 U	4.9 U	4.75 U	4.9 U	4.95 U	4.9 U	4.75 U	4.75 U	4.75 U	4.8 U	4.7 U	4.75 U	4.75 U	4.75 U	4.7 U	4.9 U	4.75 U
	8270C	Phenanthrene	--		--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	1.3	0.475 U
	8270C	Phenol	10950	nc	--	ug/l	2.35 U	2.45 U	2.4 U	2.45 U	2.5 U	2.45 U	2.4 U	2.4 U	2.4 U	2.4 U	2.35 U	2.4 U	2.4 U	2.4 U	2.35 U	2.45 U	2.4 U
	8270C	Pyrene	182	nc	--	ug/l	0.465 U	0.49 U	0.475 U	0.49 U	0.495 U	0.49 U	0.475 U	0.475 U	0.475 U	0.48 U	0.47 U	0.475 U	0.475 U	0.475 U	0.47 U	0.49 J	0.475 U
Explosives	8330	1,3,5-Trinitrobenzene	1095	nc	--	ug/l	0.11 U	0.115 U	0.125 U	0.1 U	0.1 U	0.115 U	0.14 U	0.1 U	0.1 U	0.105 U	0.1 U	0.125 U	0.11 U	0.165 U	0.155 U	0.165 U	0.15 U
	8330	1,3-Dinitrobenzene	3.6	nc	--	ug/l	0.11 U	0.115 U	0.125 U	0.1 U	0.1 U	0.115 U	0.14 U	0.1 U	0.1 U	0.105 U	0.1 U	0.125 U	0.11 U	0.165 U	0.155 U	0.165 U	0.15 U
	8330	2,4,6-TNT	2.2	ca	--	ug/l	0.135 U	0.145 U	0.16 U	0.125 U	0.125 U	0.145 U	0.175 U	0.125 U	0.125 U	0.135 U	0.125 U	0.16 U	0.135 U	0.21 U	0.195 U	0.205 U	0.19 U
	8330	2,4-Dinitrotoluene	73	nc	--	ug/l	0.195 U	0.205 U	0.23 U	0.18 U	0.18 U	0.21 U	0.25 U	0.18 U	0.18 U	0.19 U	0.18 U	0.23 U	0.195 U	0.3 U	0.28 U	0.295 U	0.27 U
	8330	2,6-Dinitrotoluene	36	nc	--	ug/l	0.235 U	0.245 U	0.27 U	0.215 U	0.215 U	0.25 U	0.3 U	0.215 U	0.215 U	0.23 U	0.215 U	0.27 U	0.235 U	0.36 U	0.335 U	0.355 U	0.32 U
	8330	2-Amino-4,6-Dinitrotoluene	--		--	ug/l	0.195 U	0.205 U	0.23 U	0.18 U	0.18 U	0.21 U	0.25 U	0.18 U	0.18 U	0.19 U	0.18 U	0.23 U	0.195 U	0.3 U	0.28 U	0.295 U	0.27 U
	8330	2-Nitrotoluene	0.049	ca	--	ug/l	0.17 U	0.18 U	0.195 U	0.155 U	0.155 U	0.18 U	0.215 U	0.155 U	0.155 U	0.165 U	0.155 U	0.195 U	0.17 U	0.26 U	0.245 U	0.255 U	0.23 U
	8330	3-Nitrotoluene	122	nc	--	ug/l	0.17 U	0.18 U	0.195 U	0.155 U	0.155 U	0.18 U	0.215 U	0.155 U	0.155 U	0.165 U	0.155 U	0.195 U	0.17 U	0.26 U	0.245 U	0.255 U	0.23 U
	8330	4-Amino-2,6-Dinitrotoluene	--		--	ug/l	0.18 U	0.19 U	0.21 U	0.165 U	0.165 U	0.195 U	0.23 U	0.165 U	0.165 U	0.175 U	0.165 U	0.21 U	0.18 U	0.275 U	0.26 U	0.25 J	0.25 U
	8330	4-Nitrotoluene	0.66	ca	--	ug/l	0.17 U	0.18 U	0.195 U	0.155 U	0.155 U	0.18 U	0.215 U	0.155 U	0.155 U	0.165 U	0.155 U	0.195 U	0.17 U	0.26 U	0.245 U	0.255 U	0.23 U
	8330	HMX	1825	nc	--	ug/l	0.17 U	0.18 U	0.195 U	0.155 U	0.155 U	0.18 U	0.215 U	0.155 U	0.155 U	0.165 U	0.155 U	0.195 U	0.17 U	0.26 U	0.245 U	0.255 U	0.23 U
	8330	Nitrobenzene	3.4	nc	--	ug/l	0.085 U	0.09 U	0.1 U	0.08 U	0.08 U	0.095 U	0.11 U	0.08 U	0.08 U	0.085 U	0.08 U	0.1 U	0.085 U	0.135 U	0.125 U	0.13 U	0.12 U
	8330	RDX	0.61	ca	--	ug/l	0.11 U	0.115 U	0.125 U	0.1 U	0.1 U	0.115 U	0.14 U	0.1 U	0.1 U	0.105 U	0.1 U	0.125 U	0.11 U	0.165 U	0.155 U	0.165 U	0.15 U
	8330	Tetryl	365	nc	--	ug/l	0.425 U	0.45 U	0.495 U	0.39 U	0.39 U	0.455 U	0.55 U	0.39 U	0.39 U	0.415 U	0.39 U	0.495 U	0.425 U	0.65 U	0.6 U	0.65 U	0.6 U
Propellants	353.2 Modified	Nitrocellulose	--		--	ug/l	250 U	250 U	250 U	250 U	250 UJ	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
	8332	Nitroglycerine	4.8	ca	--	ug/l	0.55 U	0.6 U	0.65 U	0.5 U	0.5 U	0.6 U	0.7 U	0.5 U	0.5 U	0.18 J	0.5 U	0.65 U	0.55 U	0.85 U	0.8 U	0.8 U	0.75 U
	SW8330 Modified	Nitroguanidine	3650	nc	--	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
ug/l - means micrograms per Liter (parts per billion - ppb)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style.
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style.

Table ASY-9
Atlas Scrap Yard Summary of All Groundwater Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
						Sample Date:	11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
						Sample Depth:	16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
						Description	C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)		Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											
Metals	6010B	Aluminum	36499	nc	--	--	ug/l	75 U	75 U	75 U	75 U	75 U	75 U	75 U	75 U	75 U	75 U	75 U
	6010B	Barium	2555	nc	82.1	256	ug/l	31	17	32	31	20	89	32	35	26	50	54
	6010B	Beryllium	73	nc	0.00	0.00	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	6010B	Cadmium	18	nc	0.00	0.00	ug/l	1 U	0.27	0.27	0.32	1 U	1 U	1 U	1 U	0.25	1 U	1 U
	6010B	Calcium	--[n]		115000	53100	ug/l	170000	82000	200000	200000	160000	150000	130000	150000	190000	190000	89000
	6010B	Chromium	109	nc	7.3	0.00	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.4	5 U	5 U
	6010B	Cobalt	730	nc	0.00	0.00	ug/l	1.8	2.5 U	2.3	1.9	2.5 U	5	2.2	2.5 U	3.4	2.5 U	2.5 U
	6010B	Copper	1460	nc	0.00	0.00	ug/l	3.3	3.3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	6010B	Iron	10950	nc	279	1430	ug/l	360	60 U	2300	2200	1700	60 U	370	60 U	270	60 U	1600
	6010B	Magnesium	--[n]		43300	15000	ug/l	57000	18000	71000	68000	73000	45000	78000	53000	86000	65000	79000
	6010B	Manganese	876	nc	1020	1340	ug/l	**880**	110	610	590	240	310	400	200	130	280	85
	6010B	Nickel	730	nc	0.00	83.4	ug/l	3.3	5 U	3.3	3.1	5 U	12	5.3	1.7	7.7	5 U	5 U
	6010B	Potassium	--[n]		2890	5770	ug/l	3900	1600	3200	3200	4400	8200	5000	2700	8900	2100	4600
	6010B	Selenium	182	nc	0.00	0.00	ug/l	7.5 U	7.5 U	7.5 U	7.5 U	5.2	6.6	7.5 U	4.2	3	7.5 U	7.5 U
	6010B	Silver	182	nc	0.00	0.00	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.43 U	5 U	5 U
	6010B	Sodium	--[n]		45700	51400	ug/l	8300	2800	24000	23000	45000	87000	40000	45000	33000	23000	46000
	6010B	Vanadium	36	nc	0.00	0.00	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	6010B	Zinc	10950	nc	60.9	52.3	ug/l	12	6.8	11	11	5.4	8.2	5 U	93	5 U	4.4	8.4
	7041	Antimony	15	nc	0.00	0.00	ug/l	3.75 U	3.75 U	3.75 U	3.75 U	3	3.75 U	3.75 U	2.8	3.75 U	3.75 U	3.75 U
	7060A	Arsenic	0.045	ca	11.7	0.00	ug/l	**1.4**	**1.3**	**8.4**	**9.5**	**22**	**1.5**	**5.4**	1 U	**7.8**	**0.86**	**40**
	7196A	Hexavalent Chromium	109	nc	0.00	0.00	ug/l	2.6	8.7	4.3	4	5 U	4.8	3.25 U	5 U	2.4	5 U	5 U
PRG - preliminary r	7421	Lead	15	mcl	0.00	0.00	ug/l	1.5 U	1.5 U	1.5 U	0.82	1.5 U	0.92	1.5 U	1.5 U	1.7	3.4 U	8.3
	7470A	Mercury	11	nc	0.00	0.00	ug/l	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	7841	Thallium	2.4	nc	0.00	0.00	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Pesticides	8081A	4,4'-DDD	0.28	ca	--	--	ug/l	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U	0.055 U
	8081A	4,4'-DDE	0.20	ca	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	4,4'-DDT	0.20	ca	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Aldrin	0.0040	ca	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	alpha-BHC	0.011	nc	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	alpha-Chlordane	0.19	ca	--	--	ug/l	0.025 U	0.025 U	0.0245 U	0.025 U	0.0245 U	0.0245 U	0.025 U	0.024 U	0.024 U	0.0245 U	0.0245 U
	8081A	beta-BHC	0.037	ca	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	delta-BHC	--		--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	Dieldrin	0.0042	ca	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	Endosulfan I	220	nc	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	Endosulfan II	220	nc	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Endosulfan sulfate	220	nc	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Endrin	11	nc	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	Endrin aldehyde	--		--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Endrin ketone	--		--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	gamma-BHC	0.052	ca	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	gamma-Chlordane	0.19	ca	--	--	ug/l	0.0495 U	0.0495 U	0.0485 U	0.05 U	0.0485 U	0.049 U	0.0495 U	0.048 U	0.048 U	0.0485 U	0.049 U
	8081A	Heptachlor	0.015	ca	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Heptachlor epoxide	0.0074	ca	--	--	ug/l	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.07 U	0.07 U	0.075 U	0.075 U
	8081A	Methoxychlor	182	nc	--	--	ug/l	0.295 U	0.295 U	0.29 U	0.3 U	0.29 U	0.295 U	0.295 U	0.29 U	0.29 U	0.29 U	0.295 U
	8081A	Toxaphene	0.061	ca	--	--	ug/l	0.25 U	0.25 U	0.245 U	0.25 U	0.245 U	0.245 U	0.25 U	0.24 U	0.24 U	0.245 U	0.245 U

Table ASY-9
Atlas Scrap Yard Summary of All Groundwater Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
						Sample Date:	11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
						Sample Depth:	16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
						Description	C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)		Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											
PCBs	8082	Aroclor 1016	0.96	ca	--	--	ug/l	0.295 U	0.295 U	0.29 U	0.3 U	0.29 U	0.295 U	0.295 U	0.29 U	0.29 U	0.29 U	0.295 U
	8082	Aroclor 1221	0.034	ca	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.6 U	0.6 U	0.65 U	0.65 U
	8082	Aroclor 1232	0.034	ca	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.6 U	0.6 U	0.65 U	0.65 U
	8082	Aroclor 1242	0.034	ca	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.6 U	0.6 U	0.65 U	0.65 U
	8082	Aroclor 1248	0.034	ca	--	--	ug/l	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.7 U	0.7 U	0.75 U	0.75 U
	8082	Aroclor 1254	0.034	ca	--	--	ug/l	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.65 U	0.6 U	0.6 U	0.65 U	0.65 U
	8082	Aroclor 1260	0.034	ca	--	--	ug/l	0.295 U	0.295 U	0.29 U	0.3 U	0.29 U	0.295 U	0.295 U	0.29 U	0.29 U	0.29 U	0.295 U
VOCs	8260B	1,1,1-Trichloroethane	3172	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1,2,2-Tetrachloroethane	0.055	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1,2-Trichloroethane	0.20	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1-Dichloroethane	811	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,1-Dichloroethene	339	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dibromoethane	0.0056	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloroethane	0.12	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloroethene (total)	120	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	1,2-Dichloropropane	0.16	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	2-Butanone	6968	nc	--	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	2-Hexanone	2000	nc	--	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	4-Methyl-2-pentanone	1993	nc	--	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	Acetone	5475	nc	--	--	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	8260B	Benzene	0.35	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromochloromethane	--		--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromodichloromethane	0.18	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromoform	8.5	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Bromomethane	8.7	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Carbon disulfide	1043	nc	--	--	ug/l	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
	8260B	Carbon tetrachloride	0.17	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chlorobenzene	106	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloroethane	4.6	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloroform	0.17	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Chloromethane	158	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	cis-1,2-Dichloroethene	61	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	cis-1,3-Dichloropropene	0.40	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Dibromochloromethane	0.13	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Ethylbenzene	1340	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	m&p-Xylenes	206	nc	--	--	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
	8260B	Methylene chloride	4.3	ca	--	--	ug/l	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
	8260B	o-Xylene	206	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Styrene	1641	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Tetrachloroethene	0.10	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Toluene	723	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Total Xylenes	206	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	trans-1,2-Dichloroethene	122	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	trans-1,3-Dichloropropene	0.40	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	8260B	Trichloroethene	0.028	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table ASY-9
Atlas Scrap Yard Summary of All Groundwater Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
						Sample Date:	11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
						Sample Depth:	16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
						Description	C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)		Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											
	8260B	Vinyl chloride	0.020	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
SVOCs	8270C	1,2,4-Trichlorobenzene	7.2	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	1,2-Dichlorobenzene	370	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	1,3-Dichlorobenzene	182	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	1,4-Dichlorobenzene	0.50	ca	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	2,2-oxybis (1-chloropropane)	0.27	ca	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	2,4,5-Trichlorophenol	3650	nc	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	2,4,6-Trichlorophenol	3.6	nc	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	2,4-Dichlorophenol	109	nc	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	2,4-Dimethylphenol	730	nc	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	2,4-Dinitrophenol	73	nc	--	--	ug/l	10 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U	9.5 U
	8270C	2,4-Dinitrotoluene	73	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	2,6-Dinitrotoluene	36	nc	--	--	ug/l	0.255 U	0.255 U	0.25 U	0.255 U	0.24 U	0.245 U	0.235 U	0.24 U	0.25 U	0.24 U	0.235 U
	8270C	2-Chloronaphthalene	487	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	2-Chlorophenol	30	nc	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	2-Methylnaphthalene	--		--	--	ug/l	0.255 U	0.255 U	0.25 U	0.255 U	0.24 U	0.245 U	0.235 U	0.24 U	0.25 U	0.24 U	0.235 U
	8270C	2-Methylphenol	1825	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	2-Nitroaniline	109	nc	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 UJ	2.4 U	2.35 U
	8270C	2-Nitrophenol	--		--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	3,3'-Dichlorobenzidine	0.15	ca	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	3-Nitroaniline	3.2	ca	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	4,6-Dinitro-2-methylphenol	3.6	nc	--	--	ug/l	10 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U	9.5 U
	8270C	4-Bromophenyl phenyl ether	--		--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	4-Chloro-3-methylphenol	--		--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	4-Chloroaniline	146	nc	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	4-Chlorophenyl phenyl ether	--		--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	4-Methylphenol	182	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	4-Nitroaniline	3.2	ca	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	4-Nitrophenol	--		--	--	ug/l	10 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U	9.5 U
	8270C	Acenaphthene	365	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Acenaphthylene	--		--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Anthracene	1825	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Benzo(a)anthracene	0.092	ca	--	--	ug/l	0.1 U	0.1 U	0.1 U	0.1 U	0.095 U	0.095 U	0.095 U	0.095 U	0.1 U	0.095 U	0.095 U
	8270C	Benzo(a)pyrene	0.0092	ca	--	--	ug/l	0.2 U	0.205 U	0.2 U	0.205 U	0.19 U	0.195 U	0.19 U	0.19 U	0.2 U	0.19 U	0.185 U
	8270C	Benzo(b)fluoranthene	0.092	ca	--	--	ug/l	0.2 U	0.205 U	0.2 U	0.205 U	0.19 U	0.195 U	0.19 U	0.19 U	0.2 U	0.19 U	0.185 U
	8270C	Benzo(g,h,i)perylene	--		--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Benzo(k)fluoranthene	0.92	ca	--	--	ug/l	0.2 U	0.205 U	0.2 U	0.205 U	0.19 U	0.195 U	0.19 U	0.19 U	0.2 U	0.19 U	0.185 U
	8270C	Benzoic acid	145979	nc	--	--	ug/l	10 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U	9.5 U
	8270C	Benzyl alcohol	10950	nc	--	--	ug/l	10 U	10 U	10 U	10 U	9.5 U	9.5 U	9.5 U	9.5 U	10 U	9.5 U	9.5 U
	8270C	Bis(2-chloroethoxy)methane	--		--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Bis(2-chloroethyl) ether	0.010	ca	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Bis(2-ethylhexyl) phthalate	4.8	ca	--	--	ug/l	7.5 U	7.5 U	7.5 U	**58 J**	7 U	7.5 U	7 U	7 U	7.5 U	7 U	7 U
	8270C	Butylbenzyl phthalate	7300	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Carbazole	3.4	ca	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	Chrysene	9.2	ca	--	--	ug/l	0.255 U	0.255 U	0.25 U	0.255 U	0.24 U	0.245 U	0.235 U	0.24 U	0.25 U	0.24 U	0.235 U

Table ASY-9
Atlas Scrap Yard Summary of All Groundwater Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
						Sample Date:	11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
						Sample Depth:	16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
						Description	C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)		Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											
	8270C	Dibenzo(a,h)anthracene	0.0092	ca	--	--	ug/l	0.2 U	0.205 U	0.2 U	0.205 U	0.19 U	0.195 U	0.19 U	0.19 U	0.2 U	0.19 U	0.185 U
	8270C	Dibenzofuran	12	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Diethyl phthalate	29199	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Dimethyl phthalate	364867	nc	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Di-n-butyl phthalate	3650	nc	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	Di-n-octyl phthalate	1460	nc	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	Fluoranthene	1460	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Fluorene	243	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Hexachlorobenzene	0.042	ca	--	--	ug/l	0.255 U	0.255 U	0.25 U	0.255 U	0.24 U	0.245 U	0.235 U	0.24 U	0.25 U	0.24 U	0.235 U
	8270C	Hexachlorobutadiene	0.86	ca	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	Hexachlorocyclopentadiene	219	nc	--	--	ug/l	- R	- R	- R	- R	- R	- R	9.5 U	- R	- R	- R	- R
	8270C	Hexachloroethane	4.8	ca	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	Indeno(1,2,3-cd)pyrene	0.092	ca	--	--	ug/l	0.2 U	0.205 U	0.2 U	0.205 U	0.19 U	0.195 U	0.19 U	0.19 U	0.2 U	0.19 U	0.185 U
	8270C	Isophorone	71	ca	--	--	ug/l	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.95 U	0.95 U	1 U	0.95 U	0.95 U
	8270C	Naphthalene	6.2	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Nitrobenzene	3.4	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	n-Nitroso-di-n-propylamine	0.0096	ca	--	--	ug/l	0.255 U	0.255 U	0.25 U	0.255 U	0.24 U	0.245 U	0.235 U	0.24 U	0.25 U	0.24 U	0.235 U
	8270C	n-Nitrosodiphenylamine	14	ca	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Pentachlorophenol	0.56	ca	--	--	ug/l	5 U	5 U	5 U	5 U	4.8 U	4.85 U	4.7 U	4.8 U	4.95 U	4.8 U	4.65 U
	8270C	Phenanthrene	--		--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
	8270C	Phenol	10950	nc	--	--	ug/l	2.55 U	2.55 U	2.5 U	2.55 U	2.4 U	2.45 U	2.35 U	2.4 U	2.5 U	2.4 U	2.35 U
	8270C	Pyrene	182	nc	--	--	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.48 U	0.485 U	0.47 U	0.48 U	0.495 U	0.48 U	0.465 U
Explosives	8330	1,3,5-Trinitrobenzene	1095	nc	--	--	ug/l	0.13 U	0.14 U	0.155 U	0.19 U	0.1 U	0.115 U	0.12 U	0.135 U	0.19 U	0.15 U	0.15 U
	8330	1,3-Dinitrobenzene	3.6	nc	--	--	ug/l	0.13 U	0.14 U	0.155 U	0.19 U	0.1 U	0.115 U	0.12 U	0.135 U	0.19 U	0.15 U	0.15 U
	8330	2,4,6-TNT	2.2	ca	--	--	ug/l	0.16 U	0.175 U	0.195 U	0.24 U	0.125 U	0.14 U	0.15 U	0.17 U	0.235 U	0.185 U	0.19 U
	8330	2,4-Dinitrotoluene	73	nc	--	--	ug/l	0.23 U	0.25 U	0.28 U	0.345 U	0.18 U	0.205 U	0.22 U	0.245 U	0.34 U	0.265 U	0.27 U
	8330	2,6-Dinitrotoluene	36	nc	--	--	ug/l	0.275 U	0.3 U	0.335 U	0.41 U	0.215 U	0.245 U	0.26 U	0.29 U	0.405 U	0.32 U	0.32 U
	8330	2-Amino-4,6-Dinitrotoluene	--		--	--	ug/l	0.23 U	0.25 U	0.28 U	0.345 U	0.18 U	0.205 U	0.22 U	0.245 U	0.34 U	0.265 U	0.27 U
	8330	2-Nitrotoluene	0.049	ca	--	--	ug/l	0.2 U	0.215 U	0.245 U	0.295 U	0.155 U	0.175 U	0.19 U	0.21 U	0.29 U	0.23 U	0.23 U
	8330	3-Nitrotoluene	122	nc	--	--	ug/l	0.2 U	0.215 U	0.245 U	0.295 U	0.155 U	0.175 U	0.19 U	0.21 U	0.29 U	0.23 U	0.23 U
	8330	4-Amino-2,6-Dinitrotoluene	--		--	--	ug/l	0.21 U	0.23 U	0.26 U	0.315 U	0.165 U	0.185 U	0.2 U	0.225 U	0.31 U	0.245 U	0.25 U
	8330	4-Nitrotoluene	0.66	ca	--	--	ug/l	0.2 U	0.215 U	0.245 U	0.295 U	0.155 U	0.175 U	0.19 U	0.21 U	0.29 U	0.23 U	0.23 U
	8330	HMX	1825	nc	--	--	ug/l	0.2 U	0.215 U	0.245 U	0.295 U	0.155 U	0.175 U	0.19 U	0.21 U	0.29 U	0.23 U	0.23 U
	8330	Nitrobenzene	3.4	nc	--	--	ug/l	0.105 U	0.11 U	0.125 U	0.155 U	0.08 U	0.09 U	0.095 U	0.11 U	0.15 U	0.12 U	0.12 U
	8330	RDX	0.61	ca	--	--	ug/l	0.13 U	0.14 U	0.155 U	0.19 U	0.1 U	0.115 U	0.12 U	0.135 U	0.19 U	0.15 U	0.15 U
	8330	Tetryl	365	nc	--	--	ug/l	0.5 U	0.55 U	0.6 U	0.75 U	0.39 U	0.44 U	0.475 U	0.55 U	0.75 U	0.6 U	0.6 U
Propellants	353.2 Modified	Nitrocellulose	--		--	--	ug/l	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
	8332	Nitroglycerine	4.8	ca	--	--	ug/l	0.65 U	0.7 U	0.8 U	0.95 UJ	0.5 U	0.55 U	0.6 U	0.7 U	0.95 U	0.75 U	0.75 U
	SW8330 Modified	Nitroguanidine	3650	nc	--	--	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table ASY-9
Atlas Scrap Yard Summary of All Groundwater Results
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

							ASYmw-001-GW	ASYmw-002-GW	ASYmw-003-DUP	ASYmw-003-GW	ASYmw-004-GW	ASYmw-005-GW	ASYmw-006-GW	ASYmw-007-GW	ASYmw-008-GW	ASYmw-009-GW	ASYmw-010-GW
					Sample Date:		11/30/2004	11/30/2004	12/1/2004	12/1/2004	12/3/2004	12/6/2004	12/7/2004	12/3/2004	12/13/2004	12/2/2004	12/2/2004
					Sample Depth:		16 ft	15 ft	12 ft	12 ft	11 ft	19.5 ft	19.5 ft	15 ft	10 ft	15 ft	18 ft
					Description		C/Filtered	C/Filtered	C/Filtered	C/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	UC/Filtered	C/Filtered	UC/Filtered
Group	Method	Parameter	Region 9 PRG (Tap Water)	Unconsolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Units											

Notes:
-- - no background/PRG value is available for this analyte
blank cell indicates that the analysis was not performed
ug/l - means micrograms per Liter (parts per billion - ppb)
PRG - preliminary remediation goals
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
UC/Filtered – GW sample was filtered for metals and taken from an unconsolidated MW
C/Filtered – GW sample was filtered for metals and taken from a consolidated (bedrock) MW
[n] - nutrient
U - analyte not detected
J - estimated value
R - result rejected during ADR validation
If Result = or > Background, then the value is presented with a shaded/highlighted style
If Result = or > Background & PRG, then result is presented with a bold + shaded/highlighted style
If Result = or > PRG, then the value is presented with a bold style
If Result < PRG & Background, then the value is presented with a normal style

Table ASY-13
Atlas Scrap Yard Human Health Risk Screening Tables for Groundwater
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Parameter	Region 9 PRG (Tap Water)		Un-consolidated Filtered Groundwater Background	Consolidated Filtered Groundwater Background	Maximum Detected UC/Filtered	Maximum Detected C/Filtered	Frequency of Detection	COPC
Barium	2555	nc	82.1	256	89	50	11 / 11	No
Cadmium	18	nc	0.00	0.00	0.25	0.32	4 / 11	No
Calcium	--[n]		115000	53100	190000	200000	11 / 11	No
Chromium	109	nc	7.3	0.00	1.4	--	1 / 11	No
Cobalt	730	nc	0.00	0.00	5	2.3	6 / 11	No
Copper	1460	nc	0.00	0.00	--	3.3	2 / 11	No
Iron	10950	nc	279	1430	1700	2300	7 / 11	No
Magnesium	--[n]		43300	15000	86000	71000	11 / 11	No
Manganese	876	nc	1020	1340	400	880	11 / 11	No
Nickel	730	nc	0.00	83.4	12	3.3	7 / 11	No
Potassium	--[n]		2890	5770	8900	3900	11 / 11	No
Selenium	182	nc	0.00	0.00	6.6	--	4 / 11	No
Sodium	--[n]		45700	51400	87000	24000	11 / 11	No
Zinc	10950	nc	60.9	52.3	93	12	9 / 11	No
Antimony	15	nc	0.00	0.00	3	--	2 / 11	No
Arsenic	0.045	ca	11.7	0.00	40	9.5	10 / 11	Yes, > BKG & PRG
Hexavalent Chromium	109	nc	0.00	0.00	4.8	8.7	6 / 11	No
Lead	15	mcl	0.00	0.00	8.3	0.82	4 / 11	No
Bis(2-ethylhexyl) phthalate	4.8	ca	--	--	--	58	1 / 11	Yes, > PRG

Notes:
-- - no value available
BKG - site specific background
PRG - USEPA Region 9 Preliminary Remediation Goals
NTX - no toxicity screening value available
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
[n] - nutrient
*Concentration Units ug/L

Table ASY-12
Atlas Scrap Yard Human Health Risk Screening Tables for SurfaceWater
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Parameter	Region 9 PRG (Tap Water)		Surface Water Background	Maximum Detected	Frequency of Detection	COPC
Aluminum	36499	nc	3370	990	17 / 17	No
Barium	2555	nc	47.5	58	17 / 17	No
Cadmium	18	nc	0.00	0.31	5 / 17	No
Calcium	--[n]		41400	93000	17 / 17	No
Chromium	109	nc	0.00	2.1	15 / 17	No
Copper	1460	nc	7.9	3.8	10 / 17	No
Iron	10950	nc	2560	1800	17 / 17	No
Magnesium	--[n]		10800	12000	17 / 17	No
Manganese	876	nc	391	240	17 / 17	No
Nickel	730	nc	0.00	2.8	10 / 17	No
Potassium	--[n]		3170	3500	17 / 17	No
Selenium	182	nc	0.00	5.2	3 / 17	No
Sodium	--[n]		21300	3000	17 / 17	No
Vanadium	36	nc	0.00	1.7	6 / 17	No
Zinc	10950	nc	42	13	2 / 17	No
Antimony	15	nc	0.00	3.2	1 / 17	No
Arsenic	0.045	ca	3.2	0.96	3 / 17	No
Lead	15	mcl	0.00	2.4	7 / 17	No
Acenaphthene	365	nc	--	1.8	1 / 17	No
Anthracene	1825	nc	--	0.58	1 / 17	No
Benzo(a)pyrene	0.0092	ca	--	0.15	2 / 17	Yes, > PRG
Benzo(b)fluoranthene	0.092	ca	--	0.13	1 / 17	Yes, > PRG
Benzo(k)fluoranthene	0.92	ca	--	0.22	3 / 17	No
Carbazole	3.4	ca	--	1.2	1 / 17	No
Chrysene	9.2	ca	--	0.11	1 / 17	No
Dibenzofuran	12	nc	--	1.1	1 / 17	No
Fluoranthene	1460	nc	--	0.89	1 / 17	No
Fluorene	243	nc	--	1.7	1 / 17	No
Indeno(1,2,3-cd)pyrene	0.092	ca	--	0.2	2 / 17	Yes, > PRG
Naphthalene	6.2	nc	--	0.6	1 / 17	No
Phenanthrene	--		--	1.3	1 / 17	Yes, NTX
Pyrene	182	nc	--	0.49	1 / 17	No
4-Amino-2,6-Dinitrotoluene	--		--	0.25	1 / 17	Yes, NTX
Nitroglycerine	4.8	ca	--	0.18	1 / 17	No

Notes:
-- - no value available
BKG - site specific background
PRG - USEPA Region 9 Preliminary Remediation Goals
NTX - no toxicity screening value available
nc - non-cancer basis
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
[n] - nutrient
*Concentration Units ug/L

Table ASY-11
Atlas Scrap Yard Human Health Risk Screening Tables for Sediment
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Parameter	Region 9 PRG (Res Soil)		Sediment Background	Maximum Detected	Frequency of Detection	COPC
Aluminum	7614	nc	13900	15000	10 / 10	Yes, > BKG & PRG
Arsenic	0.39	ca	19.5	29	10 / 10	Yes, > BKG & PRG
Barium	538	nc	123	570	10 / 10	Yes, > BKG & PRG
Beryllium	15	nc	0.38	2	10 / 10	No
Cadmium	3.7	nc	0.00	2	8 / 10	No
Calcium	--[n]		5510	42000	10 / 10	No
Chromium	30	ca	18.1	30	10 / 10	No
Cobalt	30	ca	9.1	79	10 / 10	Yes, > BKG & PRG
Copper	313	nc	27.6	61	10 / 10	No
Iron	2346	nc	28200	51000	10 / 10	Yes, > BKG & PRG
Lead	400	pbk	27.4	170	10 / 10	No
Magnesium	--[n]		2760	7200	10 / 10	No
Manganese	176	nc	1950	34000	10 / 10	Yes, > BKG & PRG
Nickel	156	nc	17.7	48	10 / 10	No
Potassium	--[n]		1950	1800	10 / 10	No
Selenium	39	nc	1.7	14	6 / 10	No
Silver	39	nc	0.00	1.3	2 / 10	No
Sodium	--[n]		112	550	9 / 10	No
Vanadium	7.8	nc	26.1	56	10 / 10	Yes, > BKG & PRG
Zinc	2346	nc	532	520	10 / 10	No
Antimony	3.1	nc	0.00	0.84	2 / 9	No
Mercury	2.3	nc	0.06	5.2	10 / 10	Yes, > BKG & PRG
Thallium	0.52	nc	0.89	0.29	1 / 10	No
Acetone	1412	nc	--	0.71	1 / 1	No
Benzo(a)anthracene	0.62	ca	--	10	1 / 1	Yes, > PRG
Chrysene	62	ca	--	16	1 / 1	No
Pyrene	232	nc	--	62	1 / 1	No
2-Amino-4,6-Dinitrotoluene	--		--	0.12	2 / 10	Yes, NTX

Notes:
-- - no value available
BKG - site specific background
PRG - USEPA Region 9 Preliminary Remediation Goals
NTX - no toxicity screening value available
nc - non-cancer basis, value is 1/10 the published PRG
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
*Concentration Units mg/kg

Table ASY-10
Atlas Scrap Yard Human Health Risk Screening Tables for Surface Soil (0-1ft)
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Parameter	Region 9 PRG (Res Soil)		Surface Soil Background	Maximum Detected	Frequency of Detection	COPC
Aluminum	7614	nc	17700	24000	39 / 39	Yes, > BKG & PRG
Arsenic	0.39	ca	15.4	41	39 / 39	Yes, > BKG & PRG
Barium	538	nc	88.4	290	39 / 39	No
Beryllium	15	nc	0.88	4.5	39 / 39	No
Cadmium	3.7	nc	0.00	9.5	31 / 39	Yes, > BKG & PRG
Calcium	--[n]		15800	140000	39 / 39	No
Chromium	30	ca	17.4	64	39 / 39	Yes, > BKG & PRG
Cobalt	30	ca	10.4	19	39 / 39	No
Copper	313	nc	17.7	200	39 / 39	No
Iron	2346	nc	23100	28000	39 / 39	Yes, > BKG & PRG
Lead	400	pbk	26.1	1200	39 / 39	Yes, > BKG & PRG
Magnesium	--[n]		3030	14000	39 / 39	No
Manganese	176	nc	1450	3500	39 / 39	Yes, > BKG & PRG
Nickel	156	nc	21.1	31	39 / 39	No
Potassium	--[n]		927	2300	39 / 39	No
Selenium	39	nc	1.4	1.8	30 / 39	No
Silver	39	nc	0.00	5.2	5 / 39	No
Sodium	--[n]		123	1000	39 / 39	No
Vanadium	7.8	nc	31.1	26	39 / 39	No
Zinc	2346	nc	61.8	1800	39 / 39	No
Mercury	2.3	nc	0.04	0.64	32 / 39	No
Thallium	0.52	nc	0.00	0.35	6 / 39	No
Aroclor 1260	0.22	ca	--	0.054	1 / 4	No
Acetone	1412	nc	--	0.022	2 / 8	No
2-Methylnaphthalene	--		--	0.38	5 / 5	Yes, NTX
4-Methylphenol	31	nc	--	0.016	2 / 5	No
Acenaphthene	368	nc	--	0.18	4 / 5	No
Acenaphthylene	--		--	0.26	3 / 5	Yes, NTX
Anthracene	2189	nc	--	0.84	5 / 5	No
Benzo(a)anthracene	0.62	ca	--	2.9	5 / 5	Yes, > PRG
Benzo(a)pyrene	0.062	ca	--	3.2	5 / 5	Yes, > PRG
Benzo(b)fluoranthene	0.62	ca	--	5.2	5 / 5	Yes, > PRG
Benzo(g,h,i)perylene	--		--	2.1	5 / 5	Yes, NTX
Benzo(k)fluoranthene	6.2	ca	--	2.2	5 / 5	No
Benzyl alcohol	1833	nc	--	0.21	1 / 5	No
Bis(2-ethylhexyl) phthalate	35	ca	--	1.5	2 / 5	No
Butylbenzyl phthalate	1222	nc	--	0.24	1 / 5	No
Chrysene	62	ca	--	3.4	5 / 5	No
Dibenzo(a,h)anthracene	0.062	ca	--	0.75	4 / 5	Yes, > PRG
Dibenzofuran	15	nc	--	0.14	4 / 5	No
Fluoranthene	229	nc	--	4.2	5 / 5	No
Fluorene	275	nc	--	0.13	4 / 5	No
Indeno(1,2,3-cd)pyrene	0.62	ca	--	1.7	5 / 5	Yes, > PRG
Naphthalene	5.6	nc	--	0.31	5 / 5	No
Phenanthrene	--		--	1.1	5 / 5	Yes, NTX
Phenol	1833	nc	--	0.033	2 / 5	No
Pyrene	232	nc	--	4.5	5 / 5	No
2-Amino-4,6-Dinitrotoluene	--		--	0.29	5 / 39	Yes, NTX
2-Nitrotoluene	0.88	ca	--	0.43	2 / 39	No
3-Nitrotoluene	73	nc	--	0.091	1 / 39	No
Nitrocellulose	--		--	1.7	3 / 4	Yes, NTX

Notes:
-- - no value available
BKG - site specific background
PRG - USEPA Region 9 Preliminary Remediation Goals
NTX - no toxicity screening value available
nc - non-cancer basis, value is 1/10 the published PRG
ca - cancer basis
pbk - based on PBK modeling
mcl - based on CWA maximum contaminant level
max - ceiling limit
sat - soil saturation
[n] - nutrient
*Concentration Units mg/kg

Table ASY-14

Atlas Scrap Yard Ecological Risk Screening Tables for Surface Soil (0-1 ft)

RVAAP 14 AOC Characterization

Ravenna Army Ammunition Plant, Ravenna, Ohio

Group	Parameter	Frequency of Detection	Average Concentration	Maximum Detected Concentration	Units	Surface Soil Background Concentration	Maximum Concentration > Background	Screening Value	Maximum Concentration > Screening value	PBT	COPC	COPC Rationale
Metals	Aluminum	39 / 39	14387	24000	mg/kg	17700	Yes	600 ss2	Yes	No	Yes	ASL
	Arsenic	39 / 39	11	41	mg/kg	15.4	Yes	9.9 ss1	Yes	No	Yes	ASL
	Barium	39 / 39	126	290	mg/kg	88.4	Yes	283 ss1	Yes	No	Yes	ASL
	Beryllium	39 / 39	1.5	4.5	mg/kg	0.88	Yes	10 ss1	No	No	No	BSL
	Cadmium	31 / 39	0.66	9.5	mg/kg	0.00	Yes	4 ss1	Yes	No	Yes	ASL
	Calcium	39 / 39	28731	140000	mg/kg	15800	Yes	NUT	No	No	No	BSL
	Chromium	39 / 39	21	64	mg/kg	17.4	Yes	0.4 ss1	Yes	No	Yes	ASL
	Cobalt	39 / 39	7.0	19	mg/kg	10.4	Yes	20 ss1	No	No	No	BSL
	Copper	39 / 39	23	200	mg/kg	17.7	Yes	60 ss1	Yes	No	Yes	ASL
	Iron	39 / 39	19433	28000	mg/kg	23100	Yes	200 ss2	Yes	No	Yes	ASL
	Lead	39 / 39	70	1200	mg/kg	26.1	Yes	40.5 ss1	Yes	No	Yes	ASL
	Magnesium	39 / 39	4854	14000	mg/kg	3030	Yes	NUT	No	No	No	BSL
	Manganese	39 / 39	902	3500	mg/kg	1450	Yes	100 ss2	Yes	No	Yes	ASL
	Nickel	39 / 39	17	31	mg/kg	21.1	Yes	30 ss1	Yes	No	Yes	ASL
	Potassium	39 / 39	1403	2300	mg/kg	927	Yes	NUT	No	No	No	BSL
	Selenium	30 / 39	0.90	1.8	mg/kg	1.4	Yes	0.21 ss1	Yes	No	Yes	ASL
	Silver	5 / 39	0.82	5.2	mg/kg	0.00	Yes	2 ss1	Yes	No	Yes	ASL
	Sodium	39 / 39	493	1000	mg/kg	123	Yes	NUT	No	No	No	BSL
	Vanadium	39 / 39	19	26	mg/kg	31.1	No	2 ss1	Yes	No	No	BLBKG
	Zinc	39 / 39	145	1800	mg/kg	61.8	Yes	8.5 ss1	Yes	No	Yes	ASL
	Mercury	32 / 39	0.080	0.64	mg/kg	0.04	Yes	0.00051 ss1	Yes	Yes	Yes	ASL
	Thallium	6 / 39	0.30	0.35	mg/kg	0.00	Yes	1 ss1	No	No	No	BSL
PCBs	Aroclor 1260	1 / 4	0.026	0.054	mg/kg	--	NA	0.000332 ss4	Yes	No	Yes	ASL
VOCs	Acetone	2 / 8	0.011	0.022	mg/kg	--	NA	2.5 ss4	No	No	No	BSL
SVOCs	2-Methylnaphthalene	5 / 5	0.092	0.38	mg/kg	--	NA	3.24 ss4	No	No	No	BSL
	4-Methylphenol	2 / 5	0.026	0.016	mg/kg	--	NA	--	NSL	No	Yes	NSL
	Acenaphthene	4 / 5	0.058	0.18	mg/kg	--	NA	20 ss1	No	No	No	BSL
	Acenaphthylene	3 / 5	0.065	0.26	mg/kg	--	NA	628 ss4	No	No	No	BSL
	Anthracene	5 / 5	0.21	0.84	mg/kg	--	NA	148 ss4	No	No	No	BSL
	Benzo(a)anthracene	5 / 5	0.80	2.9	mg/kg	--	NA	5.21 ss4	No	No	No	BSL
	Benzo(a)pyrene	5 / 5	0.92	3.2	mg/kg	--	NA	1.52 ss4	Yes	No	Yes	ASL
	Benzo(b)fluoranthene	5 / 5	1.4	5.2	mg/kg	--	NA	59.8 ss4	No	No	No	BSL
	Benzo(g,h,i)perylene	5 / 5	0.64	2.1	mg/kg	--	NA	119 ss4	No	No	No	BSL
	Benzo(k)fluoranthene	5 / 5	0.60	2.2	mg/kg	--	NA	148 ss4	No	No	No	BSL
	Benzyl alcohol	1 / 5	0.32	0.21	mg/kg	--	NA	658 ss4	No	No	No	BSL
	Bis(2-ethylhexyl) phthalate	2 / 5	0.36	1.5	mg/kg	--	NA	0.925 ss4	Yes	No	Yes	ASL
	Butylbenzyl phthalate	1 / 5	0.075	0.24	mg/kg	--	NA	0.239 ss4	Yes	No	Yes	ASL
	Chrysene	5 / 5	0.93	3.4	mg/kg	--	NA	4.73 ss4	No	No	No	BSL
	Dibenzo(a,h)anthracene	4 / 5	0.20	0.75	mg/kg	--	NA	18.4 ss4	No	No	No	BSL
	Dibenzofuran	4 / 5	0.044	0.14	mg/kg	--	NA	--	NSL	No	Yes	NSL
	Fluoranthene	5 / 5	1.3	4.2	mg/kg	--	NA	122 ss4	No	No	No	BSL
	Fluorene	4 / 5	0.047	0.13	mg/kg	--	NA	122 ss4	No	No	No	BSL
	Indeno(1,2,3-cd)pyrene	5 / 5	0.51	1.7	mg/kg	--	NA	109 ss4	No	No	No	BSL
	Naphthalene	5 / 5	0.077	0.31	mg/kg	--	NA	0.0994 ss4	Yes	No	Yes	ASL
	Phenanthrene	5 / 5	0.38	1.1	mg/kg	--	NA	45.7 ss4	No	No	No	BSL
	Phenol	2 / 5	0.058	0.033	mg/kg	--	NA	30 ss1	No	No	No	BSL
	Pyrene	5 / 5	1.3	4.5	mg/kg	--	NA	78.5 ss4	No	No	No	BSL
Explosives	2-Amino-4,6-Dinitrotoluene	5 / 39	0.13	0.29	mg/kg	--	NA	--	NSL	No	Yes	NSL
	2-Nitrotoluene	2 / 39	0.15	0.43	mg/kg	--	NA	--	NSL	No	Yes	NSL
	3-Nitrotoluene	1 / 39	0.14	0.091	mg/kg	--	NA	--	NSL	No	Yes	NSL
Propellants	Nitrocellulose	3 / 4	1.2	1.7	mg/kg	--	NA	--	NSL	No	Yes	NSL

Notes:

-- - no value available

mg/kg - means milligrams per Kilogram (parts per million - ppm)

ss1 - Preliminary Remediation Goals (Efroymson et al., 1997a)

ss2 - Toxiclogolgical Benchmarks for Soil and Litter Invertebrates (Efrymonson et al. 1997b)

ss3 - Toxiclogolgical Benchmarks for Terrestrial Plants (Efrymonson et al. 1997c)

ss4- Ecological Data Quality Level (USEPA Region 5, 1999)

NA - not applicable

NUT - nutrient

BLBKG - below background concentration

PBT- persistent, bioaccumulative and toxic

NSL - no screening level

ASL- above screening level

BSL - below screening level

Table ASY-15
Atlas Scrap Yard Ecological Risk Screening Tables for Sediment
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Group	Parameter	Frequency of Detection	Average Concentration	Maximum Detected Concentration	Units	Sediment Background Concentration	Maximum Concentration > Background	SRV	Maximum Concentration > SRV	Screening Value	Maximum Concentration > Screening value	PBT	COPC	COPC Rationale
Metals	Aluminum	10 / 10	10650	15000	mg/kg	13900	Yes	29000	No	--	NSL	No	No	BLSRV
	Arsenic	10 / 10	14	29	mg/kg	19.5	Yes	25	Yes	9.79 sd1	Yes	No	Yes	ASL
	Barium	10 / 10	174	570	mg/kg	123	Yes	190	Yes	--	NSL	No	Yes	NSL
	Beryllium	10 / 10	1.1	2	mg/kg	0.38	Yes	0.8	Yes	--	NSL	No	Yes	NSL
	Cadmium	8 / 10	0.79	2	mg/kg	0.00	Yes	0.79	Yes	0.99 sd1	Yes	No	Yes	ASL
	Calcium	10 / 10	11820	42000	mg/kg	5510	Yes	21000	Yes	NUT	No	No	No	BSL
	Chromium	10 / 10	22	30	mg/kg	18.1	Yes	29	Yes	43.4 sd1	No	No	No	BSL
	Cobalt	10 / 10	16	79	mg/kg	9.1	Yes	12	Yes	50 sd2	Yes	No	Yes	ASL
	Copper	10 / 10	38	61	mg/kg	27.6	Yes	32	Yes	31.6 sd1	Yes	No	Yes	ASL
	Iron	10 / 10	30000	51000	mg/kg	28200	Yes	41000	Yes	--	NSL	No	Yes	NSL
	Lead	10 / 10	79	170	mg/kg	27.4	Yes	47	Yes	35.8 sd1	Yes	No	Yes	ASL
	Magnesium	10 / 10	3110	7200	mg/kg	2760	Yes	7100	Yes	NUT	No	No	No	BSL
	Manganese	10 / 10	3973	34000	mg/kg	1950	Yes	1500	Yes	--	NSL	No	Yes	NSL
	Nickel	10 / 10	28	48	mg/kg	17.7	Yes	33	Yes	22.7 sd1	Yes	No	Yes	ASL
	Potassium	10 / 10	1254	1800	mg/kg	1950	No	6800	No	NUT	No	No	No	BLBKG
	Selenium	6 / 10	5.1	14	mg/kg	1.7	Yes	1.7	Yes	--	NSL	No	Yes	NSL
	Silver	2 / 10	1.2	1.3	mg/kg	0.00	Yes	0.43	Yes	0.5 sd2	Yes	No	Yes	ASL
	Sodium	9 / 10	489	550	mg/kg	112	Yes	--	NA	NUT	No	No	No	BSL
	Vanadium	10 / 10	31	56	mg/kg	26.1	Yes	40	Yes	--	NSL	No	Yes	NSL
	Zinc	10 / 10	284	520	mg/kg	532	No	160	Yes	121 sd1	Yes	No	No	BLBKG
	Antimony	2 / 9	2.4	0.84	mg/kg	0.00	Yes	1.3	No	--	NSL	No	No	BLSRV
	Mercury	10 / 10	0.87	5.2	mg/kg	0.06	Yes	0.12	Yes	0.18 sd1	Yes	Yes	Yes	ASL
	Thallium	1 / 10	0.97	0.29	mg/kg	0.89	No	4.7	No	--	NSL	No	No	BLBKG
VOCs	Acetone	1 / 1	0.71	0.71	mg/kg	--	NA	--	NA	0.0099 sd2	Yes	No	Yes	ASL
SVOCs	Benzo(a)anthracene	1 / 1	10	10	mg/kg	--	NA	--	NA	0.108 sd1	Yes	No	Yes	ASL
	Chrysene	1 / 1	16	16	mg/kg	--	NA	--	NA	0.166 sd1	Yes	No	Yes	ASL
	Pyrene	1 / 1	62	62	mg/kg	--	NA	--	NA	0.195 sd1	Yes	No	Yes	ASL
	Total PAHs (1)	1 / 1	190	88	mg/kg	--	NA	--	NA	1.610 sd1	Yes	No	Yes	ASL
Explosives	2-Amino-4,6-Dinitrotoluene	2 / 10	0.31	0.12	mg/kg	--	NA	--	NA	--	NSL	No	Yes	NSL

Notes:
-- - no value available
mg/kg - means milligrams per Kilogram (parts per million - ppm)
sd1 - Threshold Effects Concentration from McDonald et al., (2000)
sd2 - Ecological Data Quality Level (USEPA Region 5, 1999)
NUT - nutrient
NA - not applicable
BLBKG - below background concentration
PBT- persistent, bioaccumulative and toxic
NSL - no screening level
ASL- above screening level
BSL - below screening level
SRV-Sediment Reference Value (OEPA, 2003)
BLSRV-Below Sediment Reference Value
(1) - maximum detected concentration of total PAHs was calculated by summing positive detections

Table ASY-16
Atlas Scrap Yard Ecological Risk Screening Tables for Surface Water
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Group	Parameter	Frequency of Detection	Average Concentration	Maximum Detected Concentration	Units	Surface Water Background Concentration	Maximum Concentration > Background	Screening Value	Maximum Concentration > Screening value	PBT	COPC	COPC Rationale
Metals	Aluminum	17 / 17	518	990	ug/l	3370	No	--	NSL	No	No	BLBKG
	Barium	17 / 17	35	58	ug/l	47.5	Yes	2000 sw1	No	No	No	BSL
	Cadmium	5 / 17	0.79	0.31	ug/l	0.00	Yes	5.4 sw1[H]	No	No	No	BSL
	Calcium	17 / 17	39165	93000	ug/l	41400	Yes	NUT	No	No	No	BSL
	Chromium	15 / 17	1.9	2.1	ug/l	0.00	Yes	2050 sw1[H]	No	No	No	BSL
	Copper	10 / 17	3.6	3.8	ug/l	7.9	No	16 sw1[H]	No	No	No	BLBKG
	Iron	17 / 17	836	1800	ug/l	2560	No	--	NSL	No	No	BLBKG
	Magnesium	17 / 17	4700	12000	ug/l	10800	Yes	NUT	No	No	No	BSL
	Manganese	17 / 17	78	240	ug/l	391	No	--	NSL	No	No	BLBKG
	Nickel	10 / 17	3.2	2.8	ug/l	0.00	Yes	536 sw1[H]	No	No	No	BSL
	Potassium	17 / 17	1888	3500	ug/l	3170	Yes	NUT	No	No	No	BSL
	Selenium	3 / 17	6.9	5.2	ug/l	0.00	Yes	--	NSL	No	Yes	NSL
	Sodium	17 / 17	1394	3000	ug/l	21300	No	NUT	No	No	No	BLBKG
	Vanadium	6 / 17	3.7	1.7	ug/l	0.00	Yes	150 sw1	No	No	No	BSL
	Zinc	2 / 17	7.2	13	ug/l	42	No	137 sw1[H]	No	No	No	BLBKG
	Antimony	1 / 17	3.7	3.2	ug/l	0.00	Yes	900 sw1	No	No	No	BSL
	Arsenic	3 / 17	0.96	0.96	ug/l	3.2	No	340 sw1	No	No	No	BLBKG
	Lead	7 / 17	1.4	2.4	ug/l	0.00	Yes	149 sw1[H]	No	No	No	BSL
SVOCs	Acenaphthene	1 / 17	0.56	1.8	ug/l	--	NA	19 sw1	No	No	No	BSL
	Anthracene	1 / 17	0.48	0.58	ug/l	--	NA	0.18 sw1	Yes	No	Yes	ASL
	Benzo(a)pyrene	2 / 17	0.18	0.15	ug/l	--	NA	--	NSL	No	Yes	NSL
	Benzo(b)fluoranthene	1 / 17	0.19	0.13	ug/l	--	NA	--	NSL	No	Yes	NSL
	Benzo(k)fluoranthene	3 / 17	0.19	0.22	ug/l	--	NA	--	NSL	No	Yes	NSL
	Carbazole	1 / 17	2.3	1.2	ug/l	--	NA	--	NSL	No	Yes	NSL
	Chrysene	1 / 17	0.23	0.11	ug/l	--	NA	--	NSL	No	Yes	NSL
	Dibenzofuran	1 / 17	0.97	1.1	ug/l	--	NA	36 sw1	No	No	No	BSL
	Fluoranthene	1 / 17	0.50	0.89	ug/l	--	NA	3.7 sw1	No	No	No	BSL
	Fluorene	1 / 17	0.55	1.7	ug/l	--	NA	110 sw1	No	No	No	BSL
	Indeno(1,2,3-cd)pyrene	2 / 17	0.19	0.2	ug/l	--	NA	--	NSL	No	Yes	NSL
	Naphthalene	1 / 17	0.49	0.6	ug/l	--	NA	170 sw1	No	No	No	BSL
	Phenanthrene	1 / 17	0.53	1.3	ug/l	--	NA	31 sw1	No	No	No	BSL
	Pyrene	1 / 17	0.48	0.49	ug/l	--	NA	42 sw1	No	No	No	BSL
Explosives	4-Amino-2,6-Dinitrotoluene	1 / 17	0.20	0.25	ug/l	--	NA	98 sw1	No	No	No	BSL
Propellants	Nitroglycerine	1 / 17	0.60	0.18	ug/l	--	NA	160 sw1	No	No	No	BSL

Notes:
-- - no value available
ug/l - means micrograms per Liter (parts per billion - ppb)
sw1 - Ohio Water Quality Criteria (Reg 3745-1-07)
sw1[H] - Ohio Water Quality Criteria (Reg 3745-1-07) based on a site specific hardness of 117 (mg/l)
NA - not applicable
ID - insufficient data to calculate screening value
NUT - nutrient
BLBKG - below background concentration
PBT - persistent, bioaccumulative and toxic
NSL - no screening level
ASL- above screening level

Table ASY-17
Atlas Scrap Yard Ecological Risk Summary of Quantitative and Qualitative COPECs for Environmental Media
RVAAP 14 AOC Characterization
Ravenna Army Ammunition Plant, Ravenna, Ohio

Group	Parameter	Shallow Soil	Sediment	Surface Water
Metals	Beryllium			
	Cadmium	X		
	Chromium	X		
	Copper	X		
	Iron	X		
	Lead	X		
	Magnesium			
	Nickel	X		
	Selenium	X		Q
	Silver	X		
	Vanadium			
	Zinc	X		
	Antimony			
	Lead	X		
	Mercury	X		
PCBs	Aroclor 1260	X		
VOCs	Acetone			
SVOCs	4-Methylphenol	Q		
	Anthracene			X
	Benzo(a)anthracene			
	Benzo(a)pyrene	X		Q
	Benzo(b)fluoranthene			Q
	Benzo(k)fluoranthene			Q
	Bis(2-ethylhexyl) phthalate	X		
	Butylbenzyl phthalate	X		
	Carbazole			Q
	Chrysene			Q
	Dibenzofuran	Q		
	Naphthalene	X		
	Pyrene			
	Total PAHs			
Explosives	2-Amino-4,6-Dinitrotoluene	Q		
	2-Nitrotoluene	Q		
	3-Nitrotoluene	Q		
Propellants	Nitrocellulose	Q		

Notes:
blank cells indicate that the analyte was not identified as a COPEC for the media
COPEC - chemical of potential ecological concern
X - quantitative COPEC
Q - qualitatative COPEC

Total PAHs are only applicable to sediments. For soil and surface water, only the individual PAHs are screened