Final

Screening-Level Ecological Risk Assessment
Ash Pit 1

Plum Brook Ordnance Works

Sandusky, Ohio

Prepared for:

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List of Acronyms

AP1	Ash Pit 1
ARP	assessment receptor profile
AUF	area use factor
BAF	bioaccumulation factor
BERA	baseline ecological risk assessment
bgs	below ground surface
BSC	background screening concentration
COPEC	chemical of potential ecological concern
CT	central tendency
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ESCM	ecological site conceptual model
ESV	ecological screening value
HQ	hazard quotient
IAEA	International Atomic Energy Agency
IT	IT Corporation
K_{ow}	octanol-water partition coefficient
LOAEL	lowest-observed-adverse-effect level
MDC	maximum detected concentration
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NASA	National Aeronautics and Space Administration
NOAEL	no-observed-adverse-effect level
NWI	National Wetland Inventory
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
PAH	polynuclear aromatic hydrocarbons
PBOW	Plum Brook Ordnance Works
RME	reasonable maximum exposure
Shaw	Shaw Environmental, Inc.
SLERA	screening-level ecological risk assessment
TNT	trinitrotoluene

List of Acronyms *(continued)*

TRV	toxicity reference value
UCL	upper confidence limit
USACE	U.S. Army Corps of Engineers
WRS	Wilcoxon Rank Sum

Executive Summary

Screening-level ecological risk assessments were performed to provide an estimate of current and future ecological risks associated with potential hazardous substance releases within the former Ash Pit 1 (AP1) site at Plum Brook Ordnance Works in Sandusky, Ohio. The results of the screening-level ecological risk assessments contribute to the overall characterization of the site and serve as part of the baseline used to develop, evaluate, and select appropriate remedial alternatives, if necessary. The primary objective of the assessments was to determine the potential for unacceptable risks to ecological receptors as a result of exposure to chemicals detected at the site. This objective was met by characterizing the ecological communities in the vicinity of the site, determining the particular hazardous substances being released from the site, identifying pathways for receptor exposure, and estimating the magnitude and likelihood of potential risk to identified receptors. The assessment addresses the potential for adverse effects to the vegetation, wildlife, aquatic life, and endangered and threatened species.

Vegetative communities at the site were classified during two site reconnaissance trips. AP1 is a 2-acre site that consists almost entirely of dense dogwood thickets and old fields. A small drainage channel flows adjacent to the western edge of the site from the southwest to northeast. No wetlands were formally identified at the site, although the north-central portion of AP1 was noted to be lower in elevation and characterized by hydric soils. Vegetative stress attributable to chemicals was not observed at the site during site reconnaissance trips. No threatened or endangered species were documented at AP1. Based on the site reconnaissance information, there was no indication that ecological threats exist at the site, as there was no definitive absence of biota or animal life in areas expected to support these ecological components.

The maximum detected concentrations of chemicals detected in sampled media were compared with risk-based screening ecotoxicity values during an initial screening step. Chemicals that exceeded the screening values (or for which no screening values were available) and that failed additional screening criteria (e.g., comparison with background data, nutrient status, frequency of detection, etc.) were retained as chemicals of potential ecological concern (COPEC) and assessed further. The background screening protocol, which is based on Plum Brook Project Delivery Team agreement, differs somewhat from the current Ohio Environmental Protection Agency guidance. Six chemicals in soil, nine chemicals in surface water, and seven chemicals in sediment were identified as COPECs for further evaluation. Ninety-five percent upper confidence limits were calculated for these chemicals (if appropriate) and selected as their exposure point concentrations during the subsequent stages of the risk assessment.

Eight representative receptor species that are expected to potentially reside at the site were selected as indicator species for estimating the potential effects of the COPECs. The eight species selected included the deer mouse, short-tailed shrew, Eastern cottontail rabbit, marsh wren, white-tailed deer, raccoon, red-tailed hawk, and muskrat. The raccoon and muskrat were evaluated for semiaquatic or aquatic exposure.

The assessment endpoints for AP1 were the protection of long-term survival and reproductive capabilities for terrestrial invertebrates, herbivorous mammals, omnivorous mammals, insectivorous mammals and birds, carnivorous birds, benthic invertebrates, and omnivorous aquatic mammals. Measurement assessment endpoints, or measurable responses to stressors, included lowest-observed-adverse-effect levels and no-observed-adverse-effect levels, collectively termed toxicity endpoint values.

Measurable responses to stressors, collectively termed toxicity reference values, were selected as measurement endpoints. The most appropriate measurement endpoints were chosen based on exposure pathways as well as ecotoxicity of the contaminant. An exposure analysis combining the spatial and temporal distribution of the assessment receptors and the COPECs was performed to evaluate potential exposure. The focus of the analysis was dependent on the assessment receptors evaluated and the assessment and measurement endpoints.

The intake estimates were combined with the toxicity reference values to derive estimates of potential adverse ecological effects. The uncertainties associated with the estimation of potential adverse ecological effects were identified, with the degree of uncertainty estimated qualitatively or quantitatively and the impact of the uncertainty estimated qualitatively (overestimate or underestimate, as appropriate).

Risk characterization integrates information on exposure, exposure-effects relationships, and defined or presumed target populations. The result is an estimate of the likelihood, severity, and characteristics of adverse effects to ecological receptors resulting from exposure to environmental stressors present at the site. Qualitative and semiquantitative approaches were taken to estimate the likelihood of adverse effects occurring as a result of exposure of the selected site receptors to chemicals.

For the semiquantitative predictive assessment, toxicity reference values and exposure rates were calculated and used to generate hazard quotients by dividing the receptor exposure rate for each chemical by the calculated toxicity reference values. Hazard quotients are a means of estimating

the potential for adverse effects to organisms at a contaminated site and for assessing the potential for toxicological effects to occur.

For soil, terrestrial invertebrates and plants may have slightly elevated hazard based upon the exceedance of ecological benchmarks. However, only six chemicals in AP1 soil exceeded benchmarks, and the concentrations associated with these exceedances were not highly elevated. Given the conservative nature of benchmark values, it is unlikely that these communities are adversely impacted at the site. Ecological hazard from soil was primarily evaluated using food chain models for the selected terrestrial assessment receptors (i.e., deer mouse, short-tailed shrew, Eastern cottontail rabbit, marsh wren, white-tailed deer, raccoon, and red-tailed hawk). No chemicals in soil exceeded the threshold value of 1 for AP1. Therefore, the potential for adverse ecological impacts associated with chemicals detected in soil is considered to be minor at this site.

For surface water and sediment, benthic invertebrates and plants may have slightly elevated hazard based upon the exceedance of ecological benchmarks. However, due to the limited aquatic habitat present at the site and the limited number of exceedances, it is unlikely that these communities are significantly impacted. Ecological hazard from surface water and sediment was primarily evaluated using a food chain model for the selected aquatic assessment receptors (i.e., the raccoon and muskrat) at AP1. Based on the food chain model results, the aquatic receptors were not predicted to have elevated hazards from exposure to chemicals in sediment or surface water at the site.

Based on the findings of the screening-level ecological risk assessment, the potential for adverse effects to populations of ecological receptors exposed to chemicals in soil, surface water, and sediment at AP1 is expected to be very low. No chemicals at this site are recommended for further evaluation for ecological purposes alone.

It is noted that the human health risk assessment recommends no further investigation or other actions at AP1 based on human health concerns. Therefore, no further investigation or other actions are recommended at this site based on either human health or ecological receptors.

1.0 Introduction

This screening-level ecological risk assessment (SLERA) evaluates the potential for adverse effects posed to ecological receptors from potential releases at the former Ash Pit 1 (AP1) at the former Plum Brook Ordnance Works (PBOW). This SLERA was performed as described in the work plan for this site (Shaw Environmental, Inc. [Shaw], 2009), with some modifications made to accommodate current practices in the field of ecological risk assessment. This document is consistent with the ecological risk assessment process described in U.S. Environmental Protection Agency (EPA) guidance (e.g., EPA [1997]) and Ohio Environmental Protection Agency (OEPA) Division of Emergency and Remedial Response (OEPA, 2008) guidance, as well as with the procedures established in previous ecological risk assessments performed at PBOW (e.g., IT Corporation [IT], 2001a; Shaw, 2010).

This work is being conducted by Shaw for the U.S. Army Corps of Engineers (USACE) under the Defense Environmental Restoration Program-Formerly Used Defense Sites and managed by the USACE Huntington District, with technical oversight provided by the USACE Nashville District.

1.1 Facility Description and Location

PBOW is located approximately 4 miles south of Sandusky, Ohio, and 59 miles west of Cleveland (Figure 1-1). Although located primarily in Perkins and Oxford Townships, the eastern edge of the facility extends into Huron and Milan Townships. PBOW is bounded on the north by Bogart Road, on the south by Mason Road, on the west by Patten Tract Road, and on the east by U.S. Highway 250. The areas surrounding PBOW are mostly agricultural and residential. The facility is currently surrounded by a chain-link fence, and the perimeter is regularly patrolled. Access by authorized personnel is limited to established checkpoints. Public access is restricted. Hunting is allowed by permit on portions of PBOW during the annual deer hunting season.

1.2 Facility History and Background

The PBOW facility was constructed on property comprising 9,009 acres in early 1941 as a manufacturing plant for 2,4,6-trinitrotoluene (TNT), 2,4-dinitrotoluene, and pentolite (USACE, 1995). Production of explosives at PBOW began in December 1941 and continued until 1945. It is estimated that more than 1 billion pounds of nitroaromatic explosives were manufactured during the 4-year operating period. The three explosive manufacturing areas were designated TNT Area A, TNT Area B, and TNT Area C. Twelve process lines were used in the manufacture

of TNT, including four lines at TNT Area A, three lines at TNT Area B, and five lines at TNT Area C.

After plant operations ceased, the manufacturing process lines were decontaminated by the War Department in late 1945. During decontamination, all structures, equipment, and manufacturing debris were either removed and salvaged or removed and burned. After decontamination, 3,230 acres of the property were initially transferred to the Ordnance Department, then to the War Assets Administration after it was certified by the U.S. Army to be decontaminated. In 1949, PBOW was transferred to the General Services Administration. This transfer did not include the Plum Brook depot areas, which consist of approximately 2,800 acres. The Department of the Army re-acquired the 3,230 acres in 1954 and performed remedial efforts from the mid-1950s until 1963. In 1955, the Army completed further decontamination of manufacturing process lines. This effort included removal of contaminated surface and subsurface soil around the building and wooden and ceramic waste disposal lines containing TNT. Thousands of pounds of TNT were discovered in catch basins; this TNT was removed and burned at the burning grounds.

Two property use agreements were entered into by the Army and the National Advisory Committee of Aeronautics, the predecessor of the National Aeronautics and Space Administration (NASA), in 1956 and 1958, respectively. Accountability and custody of the entire portion of the former PBOW property (6,030 acres) that had been under the accountability and custody of the Department of the Army were transferred to NASA on March 15, 1963. NASA performed further decontamination efforts during 1964. The NASA decontamination process included removing contaminated surface soil above the drain tiles, flumes, etc.; destruction of all buildings by fire; and removal of all soil, debris, sumps, and above-grade portions of concrete foundations. Portions of the concrete foundations located below grade were left buried, and some that had been previously slightly above grade were likewise buried. All materials, including the soil in those areas, were flashed. The area was then rough-graded. The decontamination process was also to have included the burning of excavated nitroaromatic-filled flumes (Dames & Moore, Inc., 1997).

NASA has operated and maintained the former PBOW property since 1963, and the facility is currently the NASA Glenn Research Center, Plum Brook Station. NASA operates the property as a space research facility in support of their John Glenn Research Center at Lewis Field, Cleveland, Ohio. Most of the aerospace testing facilities built in the 1960s at the facility are currently on standby or inactive status. On April 18, 1978, NASA declared approximately 2,152 acres of PBOW as excess. The Perkins Township Board of Education acquired 46 acres of the excess acreage and uses this area as a bus transportation area. The General Services

Administration retains ownership of the remaining excess acreage and currently has a use agreement with the Ohio National Guard for 604 acres of this land. NASA currently controls approximately 6,400 acres. The details of land transactions are listed in the Site Management Plan (USACE, 1995).

1.3 Ash Pit 1 Description and History

As noted previously, PBOW was built in early 1941 and manufactured TNT, dinitrotoluene, and pentolite until 1945. Three power stations, Power House 1, Power House 2, and Power House 3, were constructed and utilized to support the TNT manufacturing process. Each power station consisted of a main power house, a coal storage area, and an aboveground fuel storage tank. Each power house building also contained two to four large coal-burning boilers, a turboelectric generator, a feed water treatment system, and several steam-driven or electric air compressors. The generated steam was used for space heating, driving compressors, and generating electrical power. Coal ash generated from each of the boilers in the power house was collected in pits. Water was added to the ash, producing a slurry that flowed through a sluice trench to an ash sump located at the end of each power house. From the ash sump, the ash slurry traveled through a pipeline to a nearby surface water/ash impoundment, referred to as an "ash pit" (USACE, 1995). This report focuses on AP1, which was associated with Power House 1.

AP1 is located in the central part of PBOW, approximately 1,100 feet west of the intersection of Maintenance Road and Taylor Road and approximately 50 feet south of Maintenance Road (Figure 1-2). AP1 is approximately 2 acres in size. During PBOW operation, AP1 received coal ash slurry generated from the boiler in the nearby power station, Power House 1. Most of this power house is now gone, but a portion of it is currently being used by NASA. In June 1999, the USACE Louisville District conducted a limited site investigation of AP1 to evaluate the potential for contamination that may have resulted from past U.S. Department of Defense activities (USACE, 2000). Based on historical information, AP1 was noted to be overgrown with thick vegetation and a thicket of shrubby trees ranging from 3 to 8 feet tall. During a field reconnaissance by Shaw and USACE personnel in April 2009, the trees (primarily gray dogwood [*Cornus racemosa*]) present in AP1 were approximately 10 feet in height. Due to the basically level terrain, the site is believed to have been backfilled and graded. USACE also noted a culvert under Maintenance Road and an associated drainage ditch approximately 5 feet due north of AP1. A larger drainage ditch located northwest of AP1 contained water that reportedly flowed in a northeast direction. During site visits in October 2008 and April 2009, USACE and Shaw personnel observed water in this ditch, but it did not appear to be flowing. Small pools of standing water was observed in the far north portion of AP1 during the April 2009 reconnaissance, especially in ruts made by vehicles and other equipment along Maintenance

Road. This standing water was not observed during site visits in September or October 2008. A culvert receives runoff from Maintenance Road, and possibly from AP1, and drains to the north under Maintenance Road.

1.4 Scope and Objectives

The objective of this SLERA is to provide an estimate of the potential for adverse ecological effects associated with contamination resulting from former PBOW activities at AP1. The results of the SLERA will contribute to the overall characterization of the site and may be used to determine the need for additional investigations or to develop, evaluate, and select appropriate remedial alternatives. Guidance documents used to perform the SLERA include the general guidelines of the *Tri-Service Procedural Guidelines for Ecological Risk Assessments* (Wentsel, et al., 1996), *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA, 1997), *Region 5 Biological Technical Assistance Group (BTAG) Ecological Risk Assessment Guidance Bulletin No. 1* (EPA, 1996), and *Guidance for Conducting Ecological Risk Assessments* (OEPA, 2008). The SLERA fits into Steps 1 and 2 of the ecological risk assessment guidance for Superfund process (EPA, 1997) and Level I through a maximum of Level III evaluation using the OEPA (2008) process.

The goal of the SLERA is to evaluate the potential for adverse ecological effects to ecological receptors from site-related contaminants at AP1. This objective is met by characterizing the ecological communities in the vicinity of the site, determining the particular contaminants present, identifying pathways for receptor exposure, and estimating the magnitude of the likelihood of potential adverse effects to identified receptors. The SLERA addresses the potential for adverse effects to the vegetation, wildlife, aquatic life (e.g., sediment-dwelling organisms), threatened and endangered species, and wetlands or other sensitive habitats associated with the site.

Concentrations of chemicals measured in relevant environmental media were used to perform a SLERA, which includes a problem formulation (Chapter 2.0); exposure characterization (Chapter 3.0); ecological effects characterization (Chapter 4.0); risk characterization (Chapter 5.0); and summary and conclusions and recommendations (Chapter 6.0). These subtasks are described in greater detail in the following sections.

The chemicals of potential ecological concern (COPEC), the ecosystems and receptors at risk, the ecotoxicity of the contaminants known or suspected to be present, and observed or anticipated ecological effects are evaluated in this SLERA. This evaluation is conducted in two steps: (1) a screening assessment step and (2) a predictive assessment step. Ecological endpoints

to be addressed in both steps are identified. The results and conclusions of the screening assessment determine whether a predictive assessment is needed. The criteria by which the need for a predictive assessment is measured are formalized as null hypotheses to be accepted (in which case a predictive assessment is not needed) or rejected (in which case a predictive assessment is needed).

2.0 Problem Formulation

The screening assessment null hypotheses are stated as follows:

- Potential for adverse ecological effects to ecological entities at the site is minimal or nonexistent due to the lack of viable habitat for potential ecological receptors.
- Potential for adverse ecological effects to ecological entities at the site is minimal or nonexistent due to the lack of potential ecological receptors.
- Potential for adverse ecological effects to ecological entities at the site is minimal or nonexistent due to the lack of potential exposure pathways.
- Potential for adverse ecological effects to ecological entities at the site is minimal or nonexistent due to the lack of potential chemical stressors.

If one or more of these null hypotheses are accepted, a predictive assessment is not triggered. All four null hypotheses must be rejected for a predictive assessment to be triggered. The first three null hypotheses are tested with the results of the ecological site description, the pre-assessment reconnaissance, the documentation of potential receptors of special concern and critical habitats, and the determination of significant ecological threats (Section 2.1). The fourth null hypothesis is tested with the results of COPEC selection (Section 2.2).

If a predictive assessment is triggered, terrestrial and aquatic ecological conceptual site models are developed, as appropriate, and additional problem formulation tasks are performed as described in Sections 2.3 through 2.5.

2.1 Ecological Site Description

This section includes a general discussion of site background and the area of concern, surface water resources, wetlands, and vegetative communities; a species inventory; and a discussion of threatened and endangered species. Ecological characterization of the study area was based on a compilation of existing ecological information and site reconnaissance activities. A photographic record was made during the site reconnaissance visits (Figure 2-1). Information was obtained on the presence of state- and federally listed, threatened, and endangered species; species of special concern; and wildlife and fisheries resources. A botanist searched for threatened and endangered plant species. A checklist of biological species present at the site was developed using existing site investigation reports, environmental data sources mentioned previously, and information

gathered during the site reconnaissance. Information on unique and special-concern habitats, preserves, wildlife refuge parks, and natural areas within the general vicinity was also obtained.

2.1.1 General Site Background

PBOW, approximately 6,400 acres in size, is located within the Eastern Lake Plains physiographic region of the Eastern Huron/Erie Lake Plain Ecoregion (Lafferty, 1979; Omernik, 1986). This region is generally characterized as containing flat plains as the predominant land-surface form and as having a dominant natural vegetation of elm and ash in undisturbed areas. Approximately two-thirds of Erie County was once covered by a glacial lake that produced features such as beach ridges and wave-cut cliffs. Much of the region is poorly drained due to the flat topography and low stream gradients. Many of the wetlands adjacent to Lake Erie in this region have been preserved by various federal, state, and private organizations (Peterjohn and Rice, 1991), thereby providing important wetland habitat for wildlife.

Across PBOW, the land slopes gently to the north-northeast towards Lake Erie. Elevations range from 675 feet above mean sea level at the southwest edge of the site to 625 feet above mean sea level in the northern portion of the property at Bogart Road, resulting in an average slope of approximately 0.3 percent. The Lake Plains region itself is over 69 percent cropland, 2.7 percent pasture land, and 10.5 percent forest (Ohio Department of Natural Resources [ODNR], 1985). However, since the U.S. Army acquired the site in 1941 and removed the land from agricultural production, undeveloped portions of the former PBOW have become second-generation forest and open fields. This has resulted in PBOW becoming an island of forest and open fields within a sea of agricultural land in north-central Ohio.

AP1, approximately 2 acres in size, is located in a flat depression that is lower in elevation than Maintenance Road, which borders the site to the north. Surface water drainage is generally to the north portion of the site, where a culvert diverts water underneath Maintenance Road to the unnamed ditch that flows to the northeast. A site reconnaissance was performed by Shaw ecologists on October 16, 2008 and April 27 and June 2, 2009. A photographic record of the site was prepared during these site visits and is presented as Figure 2-1. Prior to arrival at the site, Shaw personnel obtained relevant information on the site, including topographic, township, county, or other appropriate maps, which were used to determine the location of potential ecological units such as streams, creeks, ponds, grasslands, forest, and wetlands on or near the site. Additionally, the 1994 biological inventory of PBOW (NASA, 1995), which identifies and shows the locations of threatened and endangered species at PBOW, was reviewed. Shaw personnel completed a checklist similar to EPA's checklist for ecological assessment/sampling (EPA, 1997). Information from this checklist was also used to complete this chapter. The

location of known or potential contaminant sources affecting the site and the probable gradient of the pathway by which contaminants may be released from the site to the surrounding environment were identified. Shaw personnel also used the reconnaissance to search for any indication of potential effects from contaminant release.

2.1.2 Surface Water

Due to the lack of topography at the site, surface water tends to pool in localized shallow depressions. Surface water was observed to be pooled at AP1 in depressions made by tire tracks and heavy equipment following sampling activities in 2009; however, such shallow pools are only present after rain events. AP1 drains to a culvert that discharges to the unnamed ditch that runs diagonally from the southwest to the northeast adjacent to the site. This shallow drainage ditch only contains water following rain events. Therefore, surface water that supports a viable aquatic ecological community does not exist within the AP1 site boundary. However, the unnamed ditch to the northwest does represent an aquatic habitat that receives runoff from, and could be impacted by, any contamination present at AP1.

2.1.3 Wetlands

According to the National Wetland Inventory (NWI) maps for the area (U.S. Fish and Wildlife Service, 2010), there are no designated wetlands at the AP1 site. It should be noted that the accuracy of NWI maps is limited, especially in relatively flat landscapes (such as those present at PBOW) because minor depressions often contain isolated wetlands not easily identified through interpretation of aerial photographs (the process used by the U.S. Fish and Wildlife Service in preparing NWI maps). It should also be noted that the NWI map classification may have been based on previous anthropogenic conditions.

2.1.4 Vegetative Communities

Vegetative communities at the site were classified during the site reconnaissance trips. Figure 2-2 presents a map of the vegetation communities at AP1. AP1 contains dense shrub thickets and old fields. The shrub thickets are dominated by *Cornus racemosa* (gray dogwood). A scrub/shrub wetland is found along Maintenance Road. Upland old fields with scattered areas of shrubs are also found in this area. During the June 2009 site visit, it was noted that a few small areas within AP1 were disturbed due to recent sampling activities at the site (see Photographs 5 and 6 on Figure 2-1).

A list of the plant species identified at AP1 is presented in Table 2-1.

During the site reconnaissance, the study area was examined for vegetative stress, including a search for plants displaying stunted growth, poor foliage growth, tissue discoloration, and a loss

of leaf coverage. Vegetative stress attributable to chemicals was not observed at AP1, and there was no evidence that significant ecological threats exist at the site. As noted previously, a few locations were devoid of vegetation in areas where heavy equipment had been deployed during sampling events earlier in the year (see bare areas in Photographs 5 and 6 on Figure 2-1). These bare areas were most obvious during the June 2009 site visit. Based on site reconnaissance information, AP1 represents a relatively undisturbed (albeit small) parcel of shrub-thicket habitat that is capable of supporting ecological receptors.

2.1.5 Species Inventory

Based on information from ODNR (1995) and collected during the site reconnaissance, species lists were prepared for plants, mammals, birds, reptiles, amphibians, and fish (Tables 2-1 through 2-6, respectively). Unless noted on the tables, the species listed in Tables 2-2 through 2-6 apply to the former PBOW as a whole and are not necessarily specific to AP1.

A total of 114 plant species were documented at AP1 during the spring and fall vegetation survey (Table 2-1). This total comprises approximately 27 percent of the total number of species documented at the installation either during the 1994 biological inventory (ODNR, 1995) or during vegetation surveys at other sites at the former PBOW (Appendix A).

Deer were observed immediately outside AP1 during one site visit and were the only mammal species directly observed. Based on species range maps that were available, a total of 43 species of mammals may be found in the region (Table 2-2). It is likely that other species are present but were not observed due to the short duration of the field visits. The dense shrub thickets at AP1 also helped obscure animal sign at this site.

A total of 130 species of birds are likely to be found in the region based on species range maps and field observations, and 105 species have been recorded at the former PBOW by the ODNR during their multi-year studies (Table 2-3). PBOW lies within a major migratory corridor that is used by birds travelling between their southern wintering grounds and their breeding grounds in Canada. Of the species recorded by the ODNR, 49 are neotropical migrants and would not be expected to nest at the former PBOW. Eleven bird species were documented at AP1 during the site visits performed by Shaw, and nine of these were identified as being present during the breeding season.

Of the 14 species of reptiles that may be found in the region based on species range maps, 10 species (71 percent) have been observed at the former PBOW, including turtles and snakes (ODNR, 1995; Table 2-4). No reptiles were observed during the AP1 site reconnaissance.

Of the 10 species of amphibians that may be found in the region based on species range maps, 9 species (90 percent) have been observed at the former PBOW (ODNR, 1995; Table 2-5), including salamanders, toads, and frogs. No amphibians were observed during the site reconnaissance.

According to ODNR (1995), a combination of electroshocking and seining was conducted during the field investigation that identified 14 species of fish at PBOW. Species observed included suckers, sunfish, minnows, sticklebacks, and bullheads (Table 2-6). Aquatic habitat sufficient to support fish populations is limited at AP1, and no fish were observed during site reconnaissance visits.

2.1.6 Threatened and Endangered Species Information

According to an Ohio Division of Natural Areas and Preserves review of their natural heritage maps and files (ODNR, 2010), there are records of State of Ohio threatened or endangered species within a 2-mile radius of the site (no species on the federal list were identified). These species include the following:

- Bushy aster (*Symphyotrichum dumosum*) - endangered
- Canada St. John's wort (*Hypericum canadense*) – endangered
- Flat-leaved rush (*Juncus platyphyllus*) – endangered
- Rough rattlesnake-root (*Prenanthes aspera*) – endangered
- Ashy sunflower (*Helianthus mollis*) – threatened
- Dwarf bulrush (*Lipocarpha micrantha*) – threatened
- Field sedge (*Carex conoidea*) – threatened
- Greene's rush (*Juncus greenei*) – threatened
- Slender spike-rush (*Eleocharis tenuis*) – threatened
- Southern hairy panic grass (*Panicum meridionale*) – threatened
- Thin-leaved sedge (*Carex cephaloidea*) – threatened
- Tufted fescue sedge (*Carex brevior*) – threatened
- Twisted yellow-eye-grass (*Xyris torta*) – threatened
- Upland sandpiper (*Bartramia longicauda*) – threatened.

In addition to these species, based on information contained in ODNR (1995), several species of threatened or endangered plants, potentially threatened plants, and threatened or endangered birds have been recorded at PBOW, as follows (note that the status of some of these species may have changed since the report was published):

- Grove sandwort (*Arenaria lateriflora*) - threatened
- Prairie false indigo (*Baptisia lactea*) - potentially threatened
- Broad-winged sedge (*C. alata*) - potentially threatened

- Round-fruited hedge-hyssop (*Gratiola virginiana*) - potentially threatened
- Tall St. John's wort (*H. majus*) - potentially threatened
- Virginia meadow beauty (*Rhexia virginica*) - potentially threatened
- Tall nut rush (*Scleria triglomerata*) - potentially threatened
- Lance-leaved violet (*Viola lanceolata*) - potentially threatened
- Cattle egret (*Bublucus ibis*) - endangered
- Black-crowned night heron (*Nycticorax nycticorax*) - threatened
- Trumpeter swan (*Cygnus buccinator*) - endangered
- Indiana bat (*Mytolis sodalis*) - endangered.

The site reconnaissance performed at AP1 as part of the current remedial investigation included detailed searches performed by a qualified botanist subcontractor during the October, 2008 and June, 2009 site visits. Based on the results of the site reconnaissance, no threatened or endangered plant species were found at AP1.

None of the threatened or endangered bird species listed previously would typically be expected to be found at AP1. The cattle egret, trumpeter swan, and upland sandpiper are all considered rare visitors or migrants at the former PBOW (ODNR, 1995) and have not been documented nesting within 1 mile of the site (ODNR, 2010). Upland sandpipers have been historically documented as nesting approximately 4,300 feet to the southeast of AP1 (Woischke, 2010). However, breeding populations of this species are no longer present in this area (PBOW/NASA, 2010). The black-crowned night heron, an Ohio threatened species, is a regular visitor at ponds, streams, and ditches within the former PBOW; however, it does not nest at the former PBOW (ODNR, 1995; 2010). The species is typically found near water and wetlands, and since the early 1980s, there has been a nesting colony of approximately 100 pairs located on an island in Sandusky Bay, approximately 10 miles north northwest of the study area (Peterjohn and Rice, 1991).

The Indiana bat, the only mammal in the list, has not been documented at the site and is generally not expected at PBOW because its preferred habitat (e.g., caves along streams or trees with exfoliated bark) is not present at AP1. Trees with exfoliated bark, such as shagbark or shellbark hickory, are rare or not present at the site, respectively, thereby providing little bat roosting habitat (Appendix A).

With the exception of the Erie Sand Barrens State Nature Preserve, there are no existing or proposed state nature preserves or scenic rivers near the site, and ODNR is unaware of any unique ecological sites; geological features; breeding or nonbreeding animal concentrations; champion trees; or state parks, forests, or wildlife areas within a 2-mile radius of the site (ODNR, 2010). The Erie Sand Barrens State Nature Preserve is located southwest of PBOW.

The 32-acre preserve is a remnant sand beach of Lake Warren, the fifth ancestral Lake Erie, and supports many threatened and endangered plant species such as field sedge, Least St. John's wort, dwarf bullrush, twisted yellow-eyed-grass, flat-leaved rush, bushy aster, and Virginia meadow beauty. Many of the preserve's rare plant species thrive in open windswept conditions such as those found on the sand barrens. The ODNR Division of Natural Areas and Preserves actively manages the preserve to ensure that the open wind-swept areas remain and do not become overgrown with woody vegetation.

2.1.7 Pre-Assessment Reconnaissance

Shaw ecological scientists performed site visits to AP1 on October 16, 2008 and April 27 and June 2, 2009. The primary purpose of the April site visits was to perform a habitat assessment and fauna inventory at the site, and the visits were intentionally performed during the period when birds are migrating north to their breeding areas so that transient species could be observed. The primary purposes of the June and October site visits were to perform a summer and fall walkover to identify plant species (including threatened and endangered species). During early June, breeding birds are vocalizing as they establish and defend territories, while migrants that breed further to the north have moved on. Therefore, the June visit was also used as a follow-up to the April fauna visit to identify bird species that are using the site during the breeding season. The list of plant species observed during the early summer and fall site walks is presented in Table 2-1. The bird species observed at AP1 are listed in Table 2-3.

Information obtained during the reconnaissance trips was used to select representative receptors, refine exposure scenarios for the risk assessment, and identify protected species or habitats of special concern in the study areas. Reconnaissance personnel completed a checklist similar to that on EPA's checklist for ecological assessment/sampling (EPA, 1997) and OEPA's ecological risk assessment guidance (OEPA, 2008). The locations of known or potential contaminant sources affecting the site and the probable gradient of the pathway by which contaminants may be released from the site to the surrounding environment were identified. Reconnaissance personnel used the site visits to evaluate the site for more subtle clues of potential effects from contaminant release.

The methods used to characterize natural resources focused on aquatic and terrestrial resources at the site and within the immediate vicinity. General habitat maps showing the types and extent of vegetation communities present within the immediate vicinity of the site were prepared based on information collected during the site reconnaissance.

2.2 Selection of Chemicals of Potential Ecological Concern

A list of media samples used for the AP1 SLERA is presented in Table 2-7. Samples used for the SLERA consisted of historical samples supplemented with more recently collected samples whose locations were selected to close data gaps and maximize information related to possible presence and distribution of contamination at a given site. Sample locations are presented on Figure 2-3. Using the analytical data from samples on this list, a COPEC selection process was performed to develop a subset of chemicals detected at the site that are not naturally occurring or are associated with non-site-related sources. These chemicals are also present at sufficient frequency, concentration, and location to pose a potential risk to ecological receptors. Screening criteria that were used to identify COPECs are described in more detail in Section 2.2.3.

2.2.1 Data Organization

Chemical analytical data, as well as all previous and ongoing investigations, were reviewed and evaluated for quality, usefulness, and uncertainty. Data identified as being of acceptable quality for use in the SLERA were summarized in a manner that presents the pertinent information to be applied in the SLERA. Any data rejected during the data evaluation as a result of the data evaluation ("R"-qualified data) were identified along with the rejection rationale. Only validated data were used in the SLERA.

The data for each chemical were sorted by medium. For ecological impacts, soil from 0 to 6 feet below ground surface (bgs) was considered. Although the 0 to 6 feet depth interval encompasses soil at depths that are not typically experienced by many ecological receptors, this interval was selected for three primary reasons: (1) to maintain consistency with other PBOW ecological risk assessments (e.g., IT [2001a]), (2) to include potential exposure to ecological receptors that may be exposed to deeper soil, and (3) to increase the size of the total soil database by including samples collected from samples up to 6 feet bgs. Therefore, COPEC selection was performed for the 0 to 6 feet interval. Chemicals that were not detected at least once in a medium were not included in the risk assessments. Available background data were determined for each medium. Potential sources of background information include data from previous and current investigations as well as monitoring wells in areas unaffected by site activities.

The analytical data included qualifiers from the analytical laboratory quality control or from the data validation process that reflect the level of confidence in the data. Some of the more common qualifiers and their meanings are as follows (EPA, 1989a):

- U - Chemical was analyzed for but not detected; the associated value is the sample quantitation limit.

- J - Value is estimated and probably below the contract-required quantitation limit.
- R - Quality control indicates that the data are unusable (chemical may or may not be present).
- B - Concentration of chemical in sample is not sufficiently higher than concentration in the blank (using the "5-times, 10-times" rule).

"J"-qualified data are used in the risk assessment; "R"- and "B"-qualified data are not. The handling of "U"-qualified data (nondetects) is described in the following sections.

2.2.2 Descriptive Statistical Calculations

Because of the uncertainty associated with characterizing contamination in environmental media, both the mean and the 95 percent upper confidence limit (UCL) of the mean are usually estimated for chemicals of interest. The EPA ProUCL software (Version 4.00.05 [EPA, 2010]) was used to calculate UCLs for the data sets of all environmental media represented by at least five samples. If the data set consisted of fewer than five data points, the maximum detected concentration (MDC) was selected as the exposure point concentration (EPC). One-half the reporting limit was used as the ProUCL input concentration for nondetects.

ProUCL generates a variety of UCL estimates for each data set. Generally, the results of one or two (sometimes more) of the UCL estimates are recommended. This recommendation is based on a variety of factors, including the distribution (i.e., normal, lognormal, gamma, or not discernable) that provides the best fit, number of nondetects, size of the data set, and skewness. In general, the UCL recommended by ProUCL will be selected as the EPC. Occasionally, ProUCL will recommend the 97.5 or 99 percent UCL on the arithmetic mean estimated by the Chebyshev method. In these cases, the 95 percent UCL estimated by the Chebyshev method was selected as the EPC because this is more consistent with the intent of the reasonable maximum exposure paradigm as defined by EPA (1989a; 2002).

Analytical data from field duplicates were joined with parent sample results to yield one result for use in the generation of mean and UCL concentrations, as follows:

- The average of field duplicate and parent sample was used if both were positive detections or if both were nondetects.
- The detected value was used if one sample was a positive detection and the other was nondetect.

The UCL generated by ProUCL or the MDC, whichever is smaller, was selected as the EPC, and this value is understood to represent a conservative estimate of average for use in the risk assessment. Unusually high detected values were retained in the calculation of the UCL concentration. Inclusion of these high values increases the statistical variability and the overall conservativeness of the risk estimate.

2.2.3 COPEC Selection Criteria

The criteria used to identify COPECs in the SLERA are described in the following sections.

2.2.3.1 Comparison to Ecological Screening Values

MDCs of chemicals detected in various media were compared with ecological screening values (ESV) for ecological endpoints following recommendations received from OEPA and as discussed in *Region 5 Biological Technical Assistance Group (BTAG) Ecological Risk Assessment Bulletin No. 1* (EPA, 1996). Chemicals that exceed the ESVs or for which no ESVs are available were retained as COPECs if other COPEC selection criteria were also met. The following ESVs or ESV hierarchy (as noted), were used for the ecological evaluation:

- ***Soil.*** Soil screening values were selected using the following hierarchy: (1) EPA ecological soil screening levels (EPA, 2008), (2) *Preliminary Remediation Goals for Ecological Endpoints* (Efroymson, et. al., 1997a), (3) EPA Region 5 ecological screening levels (note: these values were previously known as ecological data quality levels) (EPA, 2003), (4) *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process* (Efroymson, et al., 1997b), and (5) *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants* (Efroymson, et al., 1997c). It should be noted that effects on heterotrophic processes may not be relevant to ecological receptors of concern at the site.

- ***Surface Water.*** The lowest surface water screening value was selected from the following three sources: (1) OEPA Water Quality Criteria (OAC Chapter 3745-1) for the protection of aquatic life, (2) *Preliminary Remediation Goals for Ecological Endpoints* (Efroymson, et al., 1997a), and (3) EPA Region 5 ecological screening levels (EPA, 2003). Because OEPA water quality criteria do not consider food-chain effects, a hierarchy could potentially eliminate important surface water COPECs.

- ***Sediment.*** Sediment screening values were selected using the following hierarchy: (1) Consensus-based threshold effect concentration values (MacDonald, et al., 2000), (2) EPA Region 5 ecological screening levels (EPA, 2003), (4) *Preliminary Remediation Goals for Ecological Endpoints* (Efroymson, et al., 1997a), and (5) *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario* (Ontario Ministry of the Environment and Energy, 1993).

The development of the ESVs used for the former PBOW SLERA is presented in Appendix B.

2.2.3.2 Frequency of Detection

Chemicals that are detected infrequently may be artifacts in the data that may not reflect site-related activity or disposal practices. These chemicals are not evaluated further in the risk evaluation. Generally, chemicals that are detected only at low concentrations in less than 5 percent of the samples from a given medium are dropped from further consideration unless their presence is expected based on historical information about the site. Chemicals detected infrequently at elevated concentrations as compared with applicable risk-based thresholds may identify the existence of "hot spots" and have been retained in the evaluation unless other information exists to suggest that their presence is unlikely to be related to site activities.

2.2.3.3 Background Evaluation

Chemical concentrations were compared to site-specific background concentrations (see next paragraph for details) as an indication of whether a chemical is present from site-related activity or as natural background. This comparison is generally valid for inorganic chemicals but not for organic chemicals, because inorganic chemicals are naturally occurring and most organic chemicals are not. Statistical techniques are used as tools to aid the exercise of professional judgment in resolving site-related issues for metals, because metals are naturally present in most environmental media. The statistical techniques generally involve comparing the site data with background data. Background data are only available for soil at PBOW. For this SLERA, background soil values were also compared to concentrations detected in sediment samples at AP1. Sediment samples were collected from the unnamed ditch adjacent to AP1. The bottom of this ditch is most likely composed of native soil and accumulates sediment as a result of overland runoff from adjacent soils. Background data do not exist for surface water; therefore, a statistical background evaluation for this medium cannot be performed.

The first statistical technique used for the background screen is the comparison of the MDC of the site data set to the PBOW background screening concentration (BSC). BSCs are considered representative concentrations of naturally occurring inorganic constituents; therefore, a comparison between the BSC and concentrations detected on site provides an indication of whether exposure to on-site media exceeds ambient levels. The background data set and derivation of soil BSCs for all PBOW soil investigations are described in IT (1998). It is noted that the method agreed upon for the development of BSCs, as recorded in the September 11, 2002 PBOW Team Meeting minutes, differs from that shown in current OEPA (2004) guidance. This PBOW Team agreement, which has been used for all PBOW risk assessments to date, takes precedence over the subsequent OEPA (2004) guidance. The background soil samples were

collected from near the property boundary, away from any potential source areas. BSCs were calculated for use at PBOW based on concentrations found in these background soil samples. Each BSC is either the MDC of the concentrations found in these background soil samples or the calculated 95th percent upper tolerance limit of the background data set, whichever value is lower (Shaw, 2005). The upper tolerance limit is the concentration, with a probability of 0.95 (or a confidence of 95 percent), that would capture (or cover) 95 percent of background samples if a larger number of samples were collected. Chemicals with MDCs less than their respective BSCs are eliminated from further consideration. If the MDC exceeds the BSC, the chemical may be retained as a COPEC, or a different statistical analysis may be performed to determine if the background data and the site data are drawn from the same population. The Wilcoxon Rank Sum (WRS) test is used for this purpose.

The WRS test (also known as the Mann-Whitney U test) is described in Appendix M of Shaw (2005). WRS testing is performed for inorganic chemicals in soil whose MDCs exceed their respective BSCs and when the site and background data sets each contain less than 50 percent nondetects. The WRS test is not performed on data sets containing 50 percent or more nondetects, because the medians of such data sets are unknown and the test lacks sufficient power to yield reliable results. Likewise, the WRS test is not performed on data sets of size $n < 5$; in such cases, the test lacks sufficient power to identify differences between the two samples. Site data sets are interpreted as being significantly different from PBOW background if the associated p-level is less than 0.05. WRS statistical output and box-and-whisker plots of the various inorganic COPEC data sets are appended to the SLERA for each inorganic data set evaluated against the site background data set. Analytes shown by the WRS results to exceed background (or for which the WRS testing was not run) are assumed to be site related and retained as COPECs unless a qualitative chemical-specific explanation is presented in the uncertainties analysis as to why the analyte should not be regarded as site related. Analytes shown by the WRS results to be drawn from the same population as the background samples are assumed to be naturally occurring and are not retained as COPECs. The WRS test was performed for aluminum and nickel in soil for AP1. The WRS test was not used to compare sediment to soil concentrations. For AP1, on-site aluminum concentrations were found not to be significantly different from background at the $p = 0.05$ confidence level. For nickel, a significant difference was noted, but an inspection of the box-and-whisker plots indicates that the median on-site concentration is below background, indicating that on-site concentrations were significantly lower than background. Based on this information, both aluminum and nickel were removed as COPECs. Supporting information for the WRS test, including box-and-whisker plots, is presented in Appendix C.

Chemicals that fail the background evaluation are assumed to be site related and are not eliminated at this point of the screening process.

2.2.3.4 Essential Nutrients

Evaluating essential nutrients is a special form of risk-based screening applied to certain ubiquitous elements that are generally considered to be required nutrients. Essential nutrients such as calcium, iron, magnesium, potassium, and sodium are usually eliminated as COPECs because they are generally considered to be innocuous in environmental media. Other essential nutrients, including chloride, iodine, and phosphorus, may be eliminated as COPECs, provided that their presence in a particular medium is shown to be unlikely to cause adverse effects to biological health.

2.2.4 Summary of COPEC Selection

The results of the COPEC screening are presented in Tables 2-8 through 2-10 for soil, surface water, and sediment at AP1. The tables present the following information for each medium:

- Chemical name
- Frequency of detection
- Range of detected concentrations
- Range of detection limits
- Arithmetic mean (average) of site concentrations
- Distribution type
- UCL of the mean of the concentration (only for chemicals selected as COPECs)
- Appropriate ESV
- BSC
- COPEC selection conclusion: NO (with rationale for exclusion) or YES (selected).

The selected EPC is also presented for each chemical identified as a COPEC. For soil, two EPC results are presented, including a total soil EPC that represents concentrations in the 0-6 feet bgs depth range, and a surface soil EPC that represents concentrations in the 0-1 foot bgs depth range. These two sets of EPCs are used to evaluate various ecological receptors that may be exposed to different soil depths associated with their various life-history characteristics (see Section 3.1). Footnotes in each table provide the rationale for selecting or rejecting a chemical as a COPEC. In some situations, it is appropriate to reinstate as COPECs chemicals that have been eliminated using one or more of the screening criteria. Examples of these exceptions include potential breakdown products, chemicals known to have been used on site historically, chemicals with detection limits greater than the ESVs, and chemicals with high bioconcentration factors and/or bioaccumulation factors (BAF). A qualitative evaluation of the COPEC tables for soil,

surface water, and sediment was performed; based on this evaluation, no additional COPECs are recommended.

Six chemicals were identified as COPECs in soil (Table 2-8), nine were selected in surface water (Table 2-9), and seven were selected in sediment (Table 2-10) at AP1. As discussed at the beginning of Chapter 2.0, the SLERA null hypotheses are that potential for adverse ecological effects are minimal or nonexistent due to the lack of viable habitat, potential ecological receptors, potential exposure pathways, and/or potential chemical stressors. Given the selection of COPECs in multiple media, and the finding that viable habitat, potential receptors, and potential exposure pathways exist at the site, a predictive assessment is triggered for AP1. Chemicals not eliminated using the screening procedures previously presented are considered COPECs and are quantitatively evaluated in the predictive SLERA.

2.3 Ecological Endpoint (Assessment and Measurement) Identification

The first step in a predictive SLERA is the identification of assessment and measurement endpoints. The protection of ecological resources, such as habitats and species of plants and animals, is a principal motivation for conducting the SLERA. Key aspects of ecological protection are presented as policy goals. These are general goals established by legislation or agency policy that are based on societal concern for the protection of certain environmental resources. For example, environmental protection is mandated by a variety of legislation and government agency policies (e.g., the Comprehensive Environmental Response, Compensation, and Liability Act and the National Environmental Policy Act). Other legislation includes the Endangered Species Act (16 U.S. Code 1531-1544) (1993, as amended) and the Migratory Bird Treaty Act 16 (U.S. Code 703-711) (1993, as amended). To determine whether these protection goals are met at the site, assessment and measurement endpoints have been formulated to define the specific ecological values to be protected and to define the degree to which each may be protected.

Unlike the human health risk assessment process, which focuses on individual receptors, the SLERA focuses on populations or groups of interbreeding nonhuman, nondomesticated receptors. This is accomplished by selecting measurement endpoints (discussed below) that are related to parameters most likely to result in population level effects (e.g., survival, growth, or reproduction) and consideration of lowest-observed-adverse-effect levels (LOAEL) in addition to no-observed-adverse-effect level (NOAEL) endpoints (see Chapter 4.0). In the SLERA process, risks to individual receptors are assessed only if they are protected under the Endangered Species Act, are species that are candidates for protection, or are species of special concern.

Given the diversity of the biological world and the multiple values placed on it by society, there is no universally applicable list of assessment endpoints. Suggested criteria that may be considered in selecting assessment endpoints suitable for a specific ecological risk assessment are (1) ecological relevance, (2) susceptibility to the contaminant(s), (3) accessibility to prediction and/or measurement, and (4) definability in clear, operational terms (Suter, 1993). Selected assessment endpoints reflect environmental values that are protected by law, are critical resources, or have relevance to ecological functions that may be impaired. Both the entity and attribute are identified for each assessment endpoint.

Assessment endpoints are inferred from effects to one or more measurement endpoints. The measurement endpoint is a measurable response to a stressor that is related to the valued attribute of the chosen assessment endpoint. It serves as a surrogate attribute of the ecological entity of interest (or of a closely related ecological entity) that can be used to draw a predictive conclusion about the potential for effects to the assessment endpoint.

Measurement endpoints for this SLERA are based on toxicity values from the available literature and not statistical or arithmetic summaries of actual field or laboratory observations or measurements. When possible, receptors and endpoints have been concurrently selected by identifying those that are known to be adversely affected by chemicals at the site based on published literature. COPECs for those receptors and endpoints have been identified by drawing on the scientific literature to obtain information regarding potential toxic effects of site chemicals to site species. This process ensures that a conservative approach is taken in selecting endpoints and evaluating receptors that are likely to be adversely affected by the potentially most toxic chemicals at the site.

2.3.1 Assessment Endpoints

The assessment endpoints for AP1 are stated as "the protection of long-term survival and reproductive capabilities for terrestrial invertebrates, herbivorous mammals, omnivorous mammals, insectivorous mammals and birds, carnivorous birds, benthic invertebrates, and omnivorous aquatic mammals." The corresponding null hypothesis for each of the assessment endpoints is stated as "the presence of site contaminants within soil, surface water, sediment, vegetation, and prey will have no effect on the survival or reproductive capabilities of terrestrial invertebrates, herbivorous mammals, omnivorous mammals, insectivorous mammals and birds, carnivorous birds, benthic invertebrates, and omnivorous aquatic mammals."

Assessment receptor species were selected based on the likelihood of finding the species at AP1. Historical information, the site reconnaissance visits, and the availability of toxicological data were used to select terrestrial and aquatic assessment receptor species. These receptors species are depicted in food web models (Figures 2-4 and 2-5). Food web models are simplified versions of the possible movement through the food chain of contaminants present or potentially present at the site. Due to lack of data for all possible species, key species have been selected to represent broad classes, or guilds.

The food web conceptual site models were developed to illustrate how the selected terrestrial and aquatic species are ecologically linked within food webs. One species was used to represent each of the major trophic levels and habitats at the site. The decision was made not to complicate the food web models with species names for organisms at the base of the food web (e.g., species names of terrestrial invertebrates). Thus, generic terrestrial invertebrates, benthic invertebrates, and aquatic invertebrates were used to represent the bottom of the food chain. For terrestrial invertebrates and plants, partitioning coefficients and simple empirical uptake models were employed to estimate COPEC concentrations within tissues (Chapter 3.0). Brief life history descriptions for the selected receptor species are provided in Appendix D.

All trophic levels may be exposed to COPECs, either by direct exposure to contaminated abiotic media or through ingestion of lower trophic level food items. Primary producers (plants) absorb COPECs (as well as nutrients) from soil and/or water. Through abiotic processes, COPECs can adsorb to the sediment and detritus particles. When these particles settle and become part of the benthic substrate, they may also become a source of COPECs to benthic communities. Various species of aquatic biota fulfill the role of aquatic herbivores (feeding on aquatic plants and suspended detritus) and predatory invertebrates (feeding on benthic invertebrate species). The combination of COPEC bioconcentration from water, ingestion of contaminated prey, and restricted ranges for aquatic organisms provides good conditions for significant bioaccumulation of COPECs. In terrestrial species, bioconcentration occurs in plants and invertebrates, and higher food chain receptors bioaccumulate COPECs through the ingestion of food items.

2.3.2 Measurement Endpoints

Measurement endpoints are frequently numerical expressions of observations (e.g., toxicity test results or community diversity indices) that can be compared statistically to detect adverse responses to a site contaminant. Examples of typical measurement endpoints include mortality, growth, or reproduction parameters in toxicity tests; individual abundance; and species diversity (EPA, 1997).

For assessments, measurable responses to stressors may include LOAELs, NOAELs, lethal concentration to 50 percent of the test population, lethal dose to 50 percent of the test population, or effective concentration for 20 percent of the test population, collectively termed toxicity reference values (TRV) (see Section 4.1 for further explanation).

2.4 Selection of Assessment Receptors

In order to focus the exposure characterization portion of the SLERA on species or components that are the most likely to be affected and on those that, if affected, are most likely to result in significant impacts to the on-site ecosystem, the selection of assessment receptors focuses on species, groups of species, or functional groups that are directly related to the assessment endpoints previously identified (Section 2.3.1).

Site biota were organized into major functional groups. For terrestrial communities, the major groups are plants and wildlife, including terrestrial invertebrates, mammals, and birds. For aquatic and/or wetland communities, the major groups are flora and fauna, including vertebrates (waterfowl and fish), aquatic invertebrates, and wetland/terrestrial mammals. Species presence and relative abundance were partly determined during the site reconnaissance.

Primary criteria for selecting appropriate assessment receptors include, but are not limited to, the following:

- The assessment receptor has a relatively high likelihood of contacting chemicals via direct or indirect exposure.
- The assessment receptor exhibits marked sensitivity to chemicals.
- The assessment receptor is a key component of ecosystem structure or function (e.g., importance in the food web or ecological relevance).
- The assessment receptor may be listed as rare, threatened, or endangered by a governmental organization, or the receptor consists of critical habitat for rare, threatened, or endangered species.

Additional criteria for selection of assessment receptors were used to identify species that offer the most favorable combination of characteristics for determining the implications of on-site contaminants. These criteria included (1) limited home range, (2) role in local nonhuman food chains, (3) potential high abundance and wide distribution at the site, (4) sufficient toxicological information available in the literature for comparative and interpretive purposes, (5) sensitivity to COPECs, (6) relatively high likelihood of occurrence on site following remediation (if required);

(7) suitability for long-term monitoring, (8) importance to the stability of the ecological food chain or biotic community of concern, and (9) relatively high likelihood that species will be present at the site or that habitats present at the site could support the species. Assessment receptors are representative species that are modeled for exposure to contaminants via multiple exposure routes. Organisms at the base of the food chain (i.e., plants, invertebrates, etc.) are not evaluated for food chain effects because direct exposure is the primary exposure route of concern for these organisms, which is evaluated by the ecological benchmark comparison during the initial COPEC screening process. Therefore, these types of organisms are not selected as assessment receptors.

AP1 is characterized by an ash pit area in a depression with shrub/scrub cover and successional forests adjacent to the depression. A drainage channel is also present to the west of the ash pit and flows from the southwest to the northeast.

2.4.1 Terrestrial Receptors

Seven representative terrestrial receptor species that are expected or possible in the area of AP1 (based on the ecological description of the site presented in Section 2.1) were selected as indicator species for the potential effects of COPECs. These indicator species represent two classes of vertebrate wildlife (mammals and birds) and a range of both body size and food habits, and include herbivores, omnivores, and carnivores. Vegetation is not considered an assessment receptor. The seven terrestrial species selected include the deer mouse (*Peromyscus maniculatus*) (small omnivorous mammal), short-tailed shrew (*Blarina brevicauda*) (small insectivorous mammal), Eastern cottontail rabbit (*Sylvilagus floridanus*) (medium-sized herbivorous mammal), marsh wren (*Cistothorus palustris*) (small insectivorous bird), white-tailed deer (*Odocoileus virginianus*) (large herbivorous mammal), raccoon (*Procyon lotor*) (medium-sized omnivorous mammal), and red-tailed hawk (*Buteo jamaicensis*) (large, carnivorous bird).

A terrestrial food web for the two ash pits is presented on Figure 2-4. Many of the species evaluated have limited home ranges, particularly the deer mouse, cottontail rabbit, short-tailed shrew, and marsh wren, which make them particularly vulnerable to exposure from site contaminants. All of the selected terrestrial receptor species have a potentially high abundance and wide distribution at the site; also, sufficient toxicological information (with the exception of some bird species) is available in the literature for comparative and interpretive purposes. All species are considered important to the stability of the local ecological food chain and biotic community. Finally, all the selected species have readily available exposure data, as summarized in the *Wildlife Exposure Factors Handbook* (EPA, 1993).

Larger mammal species were generally not selected as sensitive receptors due to their large home ranges; however, the red-tailed hawk was retained due to its unique role as a top predator in the food chain, and the white-tailed deer was retained due to its high abundance at the site. Smaller birds were generally not included because most are migratory. The potential risk to species with larger home ranges and migratory avian species are included within the predicted risks to the selected terrestrial indicator receptors. Area use factors (AUF) were set to 100 percent for the mouse, shrew, rabbit, and wren, due to their relatively small home ranges (Section 3.1). However, for the deer, hawk, and raccoon, the AUF was set at 0.002, 0.001, and 0.005 (or 0.2, 0.1, and 0.5 percent), respectively, based on these species' relatively large home ranges (518, 842, and 156 hectares, or 1,280, 2,081, and 385 acres, respectively), compared with the size of the site being evaluated (approximately 2 acres).

Results of the assessment receptor selection process are presented in detailed biological and ecological descriptions called assessment receptor profiles (ARP). The biologically relevant criteria used to select the seven terrestrial assessment receptors are also discussed and summarized in the ARPs (Appendix D).

2.4.2 Aquatic Receptors

The aquatic habitat at AP1 consists of the unnamed ditch that flows from the southwest to the northeast just to the northwest of AP1 (Photograph 3 on Figure 2-1; Figure 2-3). Water approximately 1 to 2 feet deep has been present in this ditch during every site reconnaissance visit, and this ditch likely contains water throughout most of the year. Exposure to aquatic organisms within this area is assumed to occur via direct exposure to contaminants in the water column, ingestion of surface water (via drinking and as a result of bioconcentration through direct contact) and sediment (while foraging, preening, etc.), and ingestion of food items (i.e., plants, benthic invertebrates, and prey) exposed to contaminants in surface water and sediment. Potential uptake through the aquatic food chain is evaluated for the raccoon (also considered as a terrestrial receptor). The muskrat (*Ondatra zibethicus*) (medium-sized aquatic herbivorous mammal) is also evaluated at AP1. The inclusion of the muskrat receptor is conservative, because muskrats require water of sufficient depth or velocity to prevent fully freezing in the winter and the unnamed ditch adjacent to AP1 may not fulfill these requirements. An avian aquatic omnivore such as the mallard (*Anas platyrhynchos*) is not evaluated because pooled water of sufficient depth to attract dabbling ducks is not present at the site.

Aquatic organisms represent some of the prey base for aquatic receptors, represented by the raccoon and muskrat. An aquatic food web is presented on Figure 2-5. The raccoon is a likely visitor to the site (Section 2.1) and has a potentially high abundance and wide distribution in the

area, and sufficient toxicological information is available in the literature for comparative and interpretive purposes. The muskrat is also likely to be found at PBOW (Table 2-2). As mentioned previously, the aquatic habitat may be too limited to support muskrat populations at AP1 but is conservatively included in the evaluation to represent mammalian aquatic herbivores. Both the raccoon and muskrat have readily available exposure data, as summarized in the *Wildlife Exposure Factors Handbook* (EPA, 1993).

Results of the assessment receptor selection process, including a summary of the relevant biological criteria used, are presented in the ARPs (Appendix D).

2.5 Ecological Site Conceptual Model

Pictorial representations of the evaluated food webs are presented on Figures 2-4 and 2-5. The accompanying text presented in Section 3.1 is intended to clarify the ecological site conceptual models (ESCM). The ESCMs trace the contaminant pathways through both abiotic components and biotic food web components of the environment. The ESCMs present all potentially complete exposure pathways. The ESCMs have been used as a tool for judging the appropriateness and usefulness of the selected measurement endpoints in evaluating the assessment endpoints and for identifying sources of uncertainty in the exposure characterization.

3.0 Exposure Characterization

An estimate of the nature, extent, and magnitude of potential exposure of assessment receptors to COPECs that are present at or migrating from the site is presented in this section, considering both current and reasonably plausible future use of the site. Exposure characterization is critical in further evaluating the risk of chemicals identified as COPECs during the screening process (Section 2.2). The exposure assessment has been conducted by linking the magnitude (concentration) and distribution (locations) of the contaminants detected in the media sampled during the investigation, evaluating pathways by which chemicals may be transported through the environment, and determining the points at which organisms found in the study areas may contact contaminants.

3.1 Exposure Analysis

An exposure analysis that combines the spatial and temporal distribution of the ecological receptors with those of the COPECs was performed to evaluate exposure. The exposure analysis focuses on the bioavailable chemicals and the means by which the ecological receptors are exposed (e.g., exposure pathways). The focus of the analysis is dependent on the assessment receptors being evaluated as well as the assessment and measurement endpoints.

Exposure pathways consist of four primary components: source and mechanism of contaminant release, transport medium, potential receptors, and exposure route. A chemical may also be transferred between several intermediate media before reaching the potential receptor. All of these components have been addressed within the SLERA. If any of these components is not complete, then contaminants in the affected media do not constitute an environmental risk at the site. The major fate and transport properties associated with typical site contaminants are described in subsequent sections. These properties directly affect a contaminant's behavior in each of the exposure pathway components.

Ecological routes of exposure for biota may be direct (bioconcentration) or through the food web via the consumption of contaminated organisms (biomagnification). Direct exposure routes include dermal contact, absorption, inhalation, and ingestion. Examples of direct exposure include animals incidentally ingesting contaminated soil or sediment (e.g., during burrowing or dust-bathing activities), animals ingesting surface water, plants absorbing contaminants by uptake from contaminated sediment or soil, and dermal contact of aquatic organisms with contaminated surface water or sediment. Given the scarcity of available data for wildlife dermal and inhalation exposure pathways, potential risk from these pathways is not estimated in this

SLERA. In addition, these pathways are generally considered to be incidental for most species, with the possible exceptions of burrowing animals and dust-bathing birds.

Food web exposure can occur when terrestrial or aquatic fauna consume contaminated biota. Examples of food web exposure include animals at higher trophic levels consuming plants or animals that bioaccumulate contaminants.

Bioavailability is an important contaminant characteristic that influences the degree of chemical-receptor interaction. The bioavailability of a chemical refers to the degree to which a receptor is able to absorb a chemical from the environmental medium. A chemical's bioavailability is a function of several physical and chemical factors such as grain size, organic carbon content, water hardness, and pH.

Daily doses of COPECs for vertebrate receptors were calculated using standard exposure algorithms. These algorithms incorporate species-specific natural history parameters (i.e., feeding rates, water ingestion rates, dietary composition, etc.) and also use site-specific AUFs, as follows:

$$Total\ Daily\ Dose = \left(\frac{\left(\left[Soil_j * IR_{soil} \right] + \left[Water_j * IR_{water} \right] + \left[\sum_{i=1}^{N} B_{ji} * P_i * IR_{food} \right] \right)}{Body\ Weight} \right) * AUF \qquad \text{Eq. 3.1}$$

where:

$Soil_j$	=	Concentration of COPEC "j" in soil
$Water_j$	=	Concentration of COPEC "j" in surface water
B_{ji}	=	Concentration of COPEC "j" in food type "i"
IR_{soil}	=	Soil ingestion rate
IR_{water}	=	Surface water ingestion rate
IR_{food}	=	Food ingestion rate
P_i	=	Proportion of food type$_i$ in receptor diet
AUF	=	Area use factor (equal to area of exposure unit/home range of receptor
Body Weight	=	Body weight of receptor.

Sediment may replace soil in Equation 3.1 for aquatic or semiaquatic receptors.

The first step in estimating exposure rates for terrestrial wildlife involves the calculation of feeding and drinking rates for site receptors. EPA (1993) includes a variety of exposure information for a number of avian, herptile, and mammalian species. Information regarding

feeding and drinking rates and dietary composition are available for many species or may be estimated using allometric equations (Nagy, 1987). Data have also been gathered on incidental ingestion of soil and is incorporated for the receptor species. Literature values for animal-specific sediment ingestion are used if available. However, such values generally are not available in the literature. Where sediment ingestion rates could not be found, the animal-specific incidental soil ingestion rate is used for sediment ingestion as well, if the receptor's life history profile suggests a significant aquatic component (e.g., raccoons' use of surface water in foraging activities). This information is summarized in Table 3-1.

To estimate dose associated with ingested food items, concentrations of COPECs in the vegetation or prey in the species' diet is estimated using BAFs (sometimes referred to as bioconcentration factors). BAFs are regression models or scalar variables that reflect the potential for the COPECs to be present in food items at concentrations different from (usually greater than) the ambient environment. Differences in concentration are due to chemical-specific properties of the COPEC that affect its tendency to bioaccumulate in tissue, balanced by the innate ability of the species to regulate body burden levels of the chemical via metabolic and excretory processes.

Selection of appropriate BAFs is a critical component to food chain modeling. General approaches for BAF selection have been discussed in Sample and Suter (1994), EPA (1999a), U.S. Army Environmental Center (2005) and EPA (2008). An approach that is consistent with these sources was followed in the selection of BAFs for PBOW. The general hierarchy for selection of BAFs based on types of sources, is as follows:

1. Use of regression equations derived from paired field- or laboratory-based measurements

2. Ratio-derived BAFs developed based on paired data of tissue concentrations compared to media concentrations where the BAF is equal to the tissue concentration divided by the concentration in the abiotic medium.

3. Modeled equilibrium partitioning-derived BAFs based on physical or chemical characteristics

4. Assumptions based on values common to chemical class.

Both U.S. Army Environmental Center (2005) and EPA (1999a) support the use of ratio BAFs in preference to equilibrium partitioning-based BAFs, which are typically calculated based on

factors such as log octanol-water partition coefficient (K_{ow}) values, fraction of organic carbon in soil, or percent of lipids in invertebrates.

Other general recommendations provided in EPA (2008) were also followed, including the following:

- For selection of ratio-based BAFs, median values are selected over maximum or other high-end BAFs.
- BAFs for accumulation of polynuclear aromatic hydrocarbons (PAH) into mammalian prey are assumed to equal zero due to the high metabolic breakdown of PAHs in mammals.

Regression equations used to calculate prey tissue concentrations of a specific chemical typically take the following general equation form:

$$\text{Ln}\,(C_{food}) = \text{slope value x ln}\,(C_{abiotic\_media}) + \text{intercept value} \qquad \text{Eq. 3.2}$$

where:

C_{food}	=	Concentration of chemical in food type
$C_{abiotic\_media}$	=	Concentration of chemical in abiotic media.

Ratio BAFs can be generally presented as follows:

$$C_{food} = BAF \times (C_{abiotic\_media}) \qquad \text{Eq. 3.3}$$

where:

C_{food}	=	Concentration of chemical in food type
$C_{abiotic\_media}$	=	Concentration of chemical in abiotic media
BAF	=	Constant.

BAFs calculated based on equilibrium partitioning typically use a physical constant of a chemical to generate a BAF. A generalized form for this calculation would be as follows:

$$\text{Log}\,(BAF) = \text{slope value x Log}\,(K_{ow}) + \text{intercept value} \qquad \text{Eq. 3.4}$$

where:

Log (BAF)	=	Log of the BAF for chemical in food type

BAFs calculated based on equilibrium partitioning are applied in the same fashion as ratio-based BAFs to generate a tissue concentration value. Any K_{ow} values needed for BAFs based on equilibrium partitioning are obtained from EPA's Estimation Program Interface Suite K_{ow}Win software program (available on-line).

Finally, where ratio-based BAFs are missing and where no equilibrium partitioning method has been developed for calculating BAFs, other methods, such as using BAFs for chemicals in the same class as surrogates, may be presented for establishing ratio-based BAFs.

For the current SLERA, PBOW-specific BAFs that were developed as part of the Red Water Ponds Phase II baseline ecological risk assessment (BERA) (IT, 2001b) were used for the AP1 food chain models, when available. Site-specific soil-to-earthworm and sediment-to-benthic invertebrate BAFs were developed in this BERA based on 28-day bioaccumulation studies performed using the earthworm species *Eisenia foetida* or the invertebrate species *Lumbriculus variegates,* respectively, and soil or sediment samples collected from the PBOW Red Water Ponds area. Both reasonable maximum exposure (RME) and central tendency (CT) BAFs were estimated in the Red Water Ponds risk assessment. The RME BAFs were based on all tissue concentration results, even if blank related, and the CT BAFs were based on blank-corrected tissue results. Although EPA recommends that median values be selected over maximum or other high-end BAFs, the RME sediment-to-aquatic invertebrate and soil-to-worm BAFs were conservatively selected over the CT BAFs as the selected BAFs for the AP1 and Ash Pit 3 SLERAs, when available. The Red Water Ponds BERA also developed CT and RME BAFs for surface water to fish for two different PBOW sites, the West Area Red Water Ponds and Pentolite Road (IT, 2001b). These values were also adopted for use in the AP1 SLERA. When two values were available for a given chemical from the two areas, the average of the RME values was used as the BAF for the AP1 SLERA.

The hierarchies used to select BAFs specific to the various types of biota are presented below. Chemical-specific BAFs (or the regression equation used to calculate COPEC concentrations) for COPECs selected using the respective hierarchies are presented in Tables 3-2 through 3-6.

Table 3-2 presents the soil-to-plants BAFs for COPECs at AP1. Soil-to-plants BAFs are also used to evaluate sediment-to-plant uptake at PBOW. Soil-to-plants BAFs are selected using the following specific hierarchy of sources:

1. EPA (2008) selected regressions
2. Efroymson, et al. (2001) regressions
3. EPA (2008) recommended median BAFs
4. International Atomic Energy Agency (IAEA) (1994) BAFs
5. Baes, et al. (1984) BAFs (these values were often updated in the more recent IAEA [1994] publication).

Table 3-3 presents the soil-to-invertebrates (earthworms) BAFs for COPECs at AP1. Soil-to-invertebrates BAFs are selected using the following hierarchy of sources:

1. PBOW site-specific BAFs (IT, 2001b)
2. EPA (2008) selected regressions
3. Sample, et al. (1998a) regressions
4. Sample, et al. (1998a) median BAFs
5. Equilibrium BAF calculation method in EPA (2008) based on Jager (1998).

Table 3-4 presents the soil-to-mammals BAFs for COPECs at AP1. Soil-to-mammals BAFs are selected using the following hierarchy or sources:

1. PBOW site-specific BAFs (IT, 2001b)
2. EPA (2008) or Sample, et al. (1998b) selected regressions
3. EPA (2008) referenced BAFs (Note: per EPA [2008], a BAF of zero is used for all PAHs, TNT, and RDX.)
4. Sample, et al. (1998b) median BAFs
5. IAEA (1994) BAFs
6. Baes, et al. (1984) BAFs (these values were often updated in the newer IAEA [1994] publication)
7. EPA (1999b) maximum calculated BAFs/bioconcentration factors for feeding guilds.

Table 3-5 presents the sediment-to-aquatic invertebrates BAFs for COPECs at AP1. Sediment-to-aquatic invertebrates BAFs are selected using the following hierarchy of sources:

1. PBOW site-specific BAFs (IT, 2001b)
2. Ratio BAFs from Bechtel Jacobs Company, LLC (1998)
3. Ratio BAFs from EPA (1999b)
4. Ratio BAFs from other literature sources
5. Conservative default based on median BAF for polychlorinated biphenyls from Bechtel-Jacobs Corporation, LLC (1998).

Table 3-6 presents the surface water-to-fish BAFs for COPECs at AP1. Surface water-to-fish BAFs are selected using the following hierarchy:

1. PBOW site-specific BAFs (IT, 2001b)
2. EPA (1999b) ratio BAFs

3. EPA (1989b) ratio BAFs
4. Risk Assessment Information System database (Oak Ridge National Laboratory, 2008, on-line)
5. Equilibrium partitioning equation (Bintein and Devillers, 1993).

It should be noted that the BAFs presented in EPA (1989a; 1999b) are presented in units of milligrams per kilogram (mg/kg) (wet) per milligrams per liter (mg/L). These BAFs were adjusted to BAFs with dry weight units of mg/kg (dry) per mg/L by dividing by the proportion of solids of a fish (20 percent, as detailed in Table C-5 of EPA [2000]).

Ingestion rates for receptor species are typically developed as a quantity of wet weight material ingested. Soil analytical data results are typically reported on a dry weight basis. Literature-derived BAFs are often a mixture of dry weight to wet weight and dry weight to dry weight values. To avoid underestimating or overestimating food concentrations based on confusion over dry weight versus wet weight, final food concentrations are adjusted in the SLERA to report concentrations on a dry weight basis. Although it was not necessary to convert food intake rates from wet weight to dry weight in this SLERA, the moisture contents of the invertebrate and vegetative material in the receptor species' diets from the EPA's *Wildlife Exposure Factors Handbook* (EPA, 1993) can be used for this conversion, as follows:

- Earthworms - 84 percent
- Fruit - 77 percent
- Roots/young grass - 82 percent
- Seeds - 9.3 percent
- Fruit/young grass - 78 percent.

Exposure to four categories of environmental media are addressed in the SLERA, as discussed in the following subsections.

Soil Exposure Pathway. Soil exposure pathways are potentially important for terrestrial plants and animals at the site. For nonburrowing animals, exposure to soil from a depth of 0 to 1 foot bgs is typically considered appropriate, as this soil depth would represent the depth of regular exposure. However, this exposure depth was extended for a few soil samples at AP1 (AP0001 and AP0017; see Table 2-7) that had sampling intervals primarily in the 0 to 1 foot bgs range, but end depths that approached 2 feet bgs. For burrowing animals such as the shrew, exposure to soil from a depth of 0 to 6 feet bgs was considered. It is noted that although the shrew itself may not actually burrow to a depth of 6 feet, there may be other burrowing mammals that do burrow this deep. For plants and herbivores feeding on deep-rooted plants (e.g., the white-tailed deer, which is assumed to ingest leaves of trees translocating COPECs from

subsoils), exposure to soil from a depth of 0 to 6 feet bgs (or the water table surface) was also evaluated because most feeder roots for vegetation that may be ingested by the white-tailed deer are located within this depth. Thus, the shrew and the white-tailed deer (Figure 2-4) were evaluated for exposure to deeper (0 to 6 feet bgs) soil. All other receptors exposed to soil were evaluated for exposure to concentrations in surface (0 to 1 foot bgs, extended to 2 feet bgs for a few samples, as noted previously) soil.

Environmental conditions such as soil moisture, soil pH, and cation exchange capacities significantly influence whether potential soil contaminants remain chemically bound in the soil matrix or can be chemically mobilized (in a bioavailable form) and released for plant absorption. Generally, neutral to alkaline soils (soil pH of 6.5 or greater) restrict the absorption of toxic metals, making pathway completion to plants difficult.

Sediment Exposure Pathway. Sediment consists of materials precipitated or settled out of suspension in surface water or native soils underlying flowing or standing surface water bodies. Potential contaminant sources for sediment include overground transport from the AP1 area, and contaminated surface water, groundwater, and soil. The release mechanisms include surface water runoff, groundwater discharge, and airborne deposition. Potential receptors of chemicals in contaminated sediment include aquatic flora and fauna. Direct exposure routes for contaminated sediment include contact by benthic-dwelling organisms such as amphipod invertebrates, uptake by aquatic flora, and ingestion by aquatic fauna. Indirect exposure pathways from sediment include consumption of bioaccumulated contaminants by consumers in the food chain. Chemical bioavailability of many nonpolar organic compounds (e.g., polychlorinated biphenyls and pesticides) decreases with increasing concentrations of total organic carbon in the sediment; however, these compounds can still bioaccumulate up the food chain (Landrum and Robbins, 1990).

Surface Water Exposure Pathway. Surface water represents a potential transport medium for COPECs. Potential sources for contaminated surface water include overground transport from the AP1 area, contaminated soil/sediment and groundwater, and deposition of airborne contaminants. The release mechanisms include surface runoff, leaching, and groundwater seepage. Potential receptors of contaminated surface water include terrestrial and aquatic fauna and aquatic flora. Exposure routes for contaminated surface water include ingestion by terrestrial fauna and uptake and absorption by aquatic flora and fauna. Consumption of bioaccumulated contaminants constitutes a potential indirect exposure pathway for faunal receptors. Chemical bioavailability of some metals and other chemicals is controlled by water hardness, pH, and total suspended solids.

Groundwater Exposure Pathway. Groundwater represents a potential transport medium for COPECs. Potential contaminant sources for groundwater include contaminated soil and buried or stored waste. The release mechanism for contaminants into groundwater is direct transfer of contaminants from waste materials to water as water passes through the materials.

Groundwater itself is not an exposure point in ecological risk assessments, although contaminant transport along the shallow groundwater pathway may be considered an exposure route to aquatic life, wetlands, and some wildlife where the groundwater discharges to surface water. In such cases, an evaluation of concentrations present in the surface water medium provides a more realistic and accurate risk scenario, because target receptors are hypothetically exposed to the concentrations they actually experience in their immediate environment and habitat. Therefore, groundwater was not directly evaluated in this SLERA. However, because the surface water samples that were obtained as part of the current environmental investigation were collected at AP1 during the wet season in May 2009 (i.e., during the time of year when groundwater discharge to the surface water features is most likely), it is probable that the data reflect any influence of groundwater discharge that may be occurring at the site. Thus, the surface water evaluation considers potential impact from contaminants that may be present in groundwater under exposure conditions in an aquatic habitat.

3.2 Exposure Characterization Summary

The estimated chemical intakes for each exposed receptor group under each exposure pathway and scenario are presented in the risk characterization spreadsheets in Appendix E. These intake estimates are combined with the COPEC toxicity values, discussed in the following section, to derive estimates and characterize potential ecological risk. The chemical data used in the SLERA are presented in Appendix F. The uncertainties associated with the estimation of chemical intake are discussed in Section 5.2.

4.0 Ecological Effects Characterization

TRVs focusing on the growth, survival, and reproduction of species and/or populations have been developed for the AP1 SLERA. Empirical data are available for the specific receptor-endpoint combinations in some instances. Data on surrogate species and/or on endpoints other than the NOAEL and LOAEL were considered as necessary. The NOAEL is a dose of each COPEC that will produce no known adverse effects in the test species. The NOAEL was judged to be an appropriate toxicological endpoint because it would provide the greatest degree of protection to the receptor species. In addition, the LOAEL was used as a point of comparison for risk management decisions. For assessment receptors that represent a threatened or endangered species, no calculation based on a LOAEL is performed, and recommendations are based solely on the more conservative NOAEL. In instances where data are unavailable for a site-associated COPEC, toxicological information for surrogate chemicals or groups of chemical was used. Safety factors were used to adjust for these differences and extrapolate risks to the site's receptors at the NOAEL and/or LOAEL endpoint. This process is described in the following paragraphs.

Toxicity information pertinent to identified receptors has been gathered for those analytes identified as COPECs. Because the measurement endpoint ranges from the NOAEL to the LOAEL, preference has been given to chronic studies noting concentrations at which no adverse effects were observed and those for which the lowest concentrations associated with adverse effects were observed. As previously noted, where data are unavailable for the exposure of a receptor to a COPEC, data for a surrogate chemical or group of chemicals were considered for use in the SLERA.

Whenever possible, studies that use the site-specific target wildlife receptors were utilized. When studies for these species were not available, alternative species studies were used. TRVs are not applied across classes under any circumstances (e.g., a TRV for a bird species may not be used to estimate hazard for a mammal species). In instances where TRVs for multiple avian or mammalian species are supported, the TRV for the most similar species to the measurement receptor based on feeding strategy and physiological attributes were used in the SLERA. For example, for mercury, which was identified as a COPEC in soil at AP1, mammalian TRVs based on both mink and mouse test species data are available. The mink TRV was used in the food chain model to evaluate the raccoon measurement receptor because both the mink and the raccoon are carnivores/omnivores that forage along stream corridors, whereas the mouse TRV

was used for the other mammalian measurement receptors due to closer taxonomic similarity (e.g., short-tailed shrew) and/or foraging patterns (e.g., cottontail rabbit, white-tailed deer). Avian TRVs based on multiple test organisms were also available for two other COPECs, lead and selenium, and were evaluated for specific measurement receptors as follows:

COPEC	TRV Test Species	Measurement Receptor
Lead	Quail	Marsh Wren
Lead	Kestrel	Red-Tailed Hawk
Selenium	Duck	Marsh Wren
Selenium	Owl	Red-Tailed Hawk

Using the relevant toxicity information, TRVs were calculated for each of the COPECs. TRVs represent NOAELs and LOAELs with the safety factors presented in Wentsel, et al. (1996), applied to toxicity information that was derived from studies other than no-effects or lowest-effects studies (Figure 4-1).

Because NOAELs and LOAELs for the selected wildlife receptor species are based on data from test species that are usually different from the species of concern, a mathematical adjustment to the TRVs has often been performed in the past (e.g., Sample, et al., 1996) using a power function of the ratio of body weights. This practice is often referred to as allometric scaling. Alternately, uncertainty factors have also been used to account for the differences in species' sensitivities to chemicals. However, in recent years, these practices have been discouraged by most scientific and regulatory groups. Recent reviews of these practices (e.g., EPA, 2008; Allard, et al., 2009) have concluded that the use of allometric scaling of TRVs does not reflect a sound application of toxicological or ecological risk practices because supporting data for this practice are limited, and the ratio relationships used for the mathematical conversions were developed based on acute (rather than chronic) toxicity data. These reviews further conclude that uncertainty factors to account for interspecies differences based on an arbitrary multiplier should not be used without a scientific basis for their application (Allard, et al., 2009). Therefore, the use of toxicity data without adjustments as reported in the literature is regarded as the most technically sound approach and is adopted for this SLERA. The TRVs used for this SLERA are summarized in Tables 4-1 and 4-2 for mammals and birds, respectively.

Exposure rate TRVs provide a reference point for the comparison of toxicological effects upon exposure to a contaminant and are compared against calculated receptor doses. TRVs are not used for evaluating community-based receptors such as plants or invertebrates.

5.0 Risk Characterization

The risk characterization phase integrates information on exposure, exposure-effects relationships, and defined or presumed target populations. The result is a determination of the likelihood, severity, and characteristics of adverse effects to environmental stressors present at a site. Qualitative and semiquantitative approaches were used to estimate the likelihood of adverse effects occurring as a result of exposure of the selected site receptors to COPECs. Because potential adverse affects to terrestrial and aquatic plants and invertebrates have been qualitatively assessed during the initial COPEC screening step, the risk characterization focuses on potential impacts to assessment receptors (Section 2.3).

For the semiquantitative predictive assessment, TRVs and exposure rates have been calculated and are used to generate hazard quotients (HQ) (Wentsel, et al., 1996). HQs are calculated by summing intake doses across all exposure pathways for each chemical for a given receptor and dividing by the TRV. HQs for those chemicals that have a similar mode of toxicological action are typically summed to account for cumulative effects; however, no groups of COPECs with similar toxicity mechanisms were identified for this SLERA, and HQs for multiple chemicals were not summed. HQs are a means of estimating the potential for adverse effects to organisms at a contaminated site and for assessing the potential that toxicological effects will occur among site receptors.

5.1 Hazard Estimation for Terrestrial and Aquatic Wildlife

The hazard estimation was performed through a series of quantitative HQ calculations that compare receptor-specific exposure values with TRVs. The HQs are compared to HQ guidelines for assessing the risk posed from contaminants. HQs less than or equal to 1 represent no probable risk, HQs from 1 up to but less than 10 represent a low potential for environmental effects, HQs from 10 up to but less than 100 represent a significant potential that effects could result from greater exposure, and HQs greater than 100 represent the highest potential for expected effects (Wentsel, et al., 1996). It should be noted that OEPA considers HQs greater than 1 to be potentially significant. It should also be noted that HQs are not measures of risk, population-based statistics, or linearly scaled statistics. Therefore, an HQ above 1, even exceedingly so, does not definitively indicate that there is even one individual expressing the toxicological effect associated with a given chemical to which it was exposed (Tannenbaum, 2005; Bartell, 1996).

Table 5-1 summarizes the NOAEL and LOAEL-based HQs for the eight evaluated assessment receptors at AP1. No chemicals had an HQ greater than 1 for any receptor. Therefore, the

potential for adverse effects to ecological receptors appears to be very low at AP1. No chemicals at this site are recommended for further ecological evaluation.

5.2 Uncertainty Analysis

A number of factors contribute to the overall variability and uncertainty inherent in ecological risk assessments. Variability is due primarily to measurement error. Laboratory media analyses and receptor study design are the major sources of this kind of error. Uncertainty, on the other hand, is associated primarily with deficiency or irrelevancy of effects, exposure, or habitat data to actual ecological conditions at the site. Species physiology, feeding patterns, and nesting behavior are poorly predictable; therefore, all toxicity information derived from toxicity testing, field studies, or observation have uncertainties associated with them. Laboratory studies conducted to obtain site-specific, measured information often suffer from poor relevance to the actual exposure and uptake conditions on site (i.e., bioavailability, exposure, assimilation, etc., are generally greater under laboratory conditions than field conditions). Calculating an estimated value based on a large number of assumptions is often the only alternative to the accurate, albeit costly, method of direct field or laboratory observation, measurement, or testing. Finally, habitat- or site-specific species may be misidentified if, for example, the observational assessment results are based on only one or even two brief site reconnaissance surveys. However, the three site reconnaissance visits that were performed at AP1 were considered sufficient to adequately assess the habitat present at each site and select appropriate representative receptors for the type of habitat available.

The uncertainty analysis lists:

- Many of the major assumptions made for the SLERA; the direction of bias caused by each assumption, i.e., whether the uncertainty results in an overestimate or underestimate of risk
- The likely magnitude of impact as high, medium, low, or unknown
- Where possible, a description of recommendations for minimizing the identified uncertainties if the SLERA progresses to higher level assessment phases.

The most important uncertainties associated with this SLERA are discussed in the following subsections.

Assumptions of bioavailability. The assumption that COPECs are 100 percent bioavailable is a worst-case assumption and likely overestimates the potential for adverse effects. The duration that has lapsed since the contaminant release affects bioavailability as the contaminant

becomes sequestered or transformed within the environmental media. Sequestration, transformation, and bioavailability are influenced by medium characteristics including pH, temperature, and organic carbon content.

Use of laboratory-derived or empirically estimated partitioning and transfer factors. The use of laboratory-derived or empirically estimated partitioning and transfer factors to predict COPEC concentrations in plants, invertebrates, prey species, and sediment likely overestimates potential risks. As discussed previously, the incorporation of COPECs into the food chain is influenced by the characteristics of the exposure medium, which likely differs from that used in the laboratory to derive partitioning and transfer factors.

Use of laboratory-derived toxicity reference values. The use of laboratory-derived TRVs may overestimate or underestimate the potential for adverse effects. The method of administration of the contaminant in the laboratory is significantly different than that experienced in the wild by the receptors.

TRVs were not available for beryllium for birds. Beryllium was selected as a COPEC in sediment at AP1 because it lacks an ESV. However, the MDC for beryllium of 1.6 mg/kg only marginally exceeds the soil BSC of 1 mg/kg and is well below the soil ESV of 21 mg/kg, which indicates that highly elevated concentrations of this metal are not present. There is also no known source for beryllium at this site, and beryllium was not identified as a COPEC in soil or surface water at AP1. For these reasons, although the inability to quantify risk to avian assessment receptors associated with beryllium represents an uncertainty in the SLERA, this uncertainty is considered to be minor.

Use of the HQ method to estimate risks to populations or communities. The calculation of HQs also introduces uncertainty. The following limitations associated with HQs (Tannenbaum, et al., 2003) are noted:

- HQs are not measures of risk.
- HQs are not population based.
- HQs are not linearly scaled.
- HQs are often produced that are unrealistically high and toxicologically impossible (e.g., estimated HQs greater than 1,000, although HQs generated for the AP1 and Ash Pit 3 SLERAs do not fall into this category).

- Trace soil concentrations of inorganic chemicals (including concentrations well below background levels) can lead to HQ threshold exceedances.

Sampling and Analytical Limitations. It is not possible to completely characterize the nature and extent of contamination on any site. Uncertainties arise from limits on the number of locations that can be sampled. The sampling protocol used at AP1, however, was designed to optimize efficiency of the sampling effort and reduce uncertainty by providing coverage of the affected area using historical data and site knowledge to focus on the ash layer, which is most likely to be representative of historical PBOW-related contamination. This approach biases potential soil contaminant concentrations higher than if sampling were performed for all soils equally within the entire ash pit and provides a more conservative estimate of potential risk. The sampling and analytical data are considered sufficient to conclude that the potential for adverse impacts associated with chemicals present at the site is very low.

Selection and Quantification of Chemicals of Potential Ecological Concern. Uncertainty associated with the processes used to identify COPECs and estimate EPCs arises from the following:

- Identifying background chemicals. Metals are judged to be present at concentrations comparable to background if the MDC does not exceed the BSC, or if statistical testing demonstrates that the site data and background data are drawn from the same population. Statistical testing of site data versus background was performed for this SLERA. Some organic chemicals, such as PAHs, may be considered to be anthropogenic background. The inclusion of ambient anthropogenic compounds in this SLERA may impart a conservative bias towards the risk assessment. Soil background values were compared with concentrations of metals detected in AP1 sediment in this SLERA. The use of soil background values for comparison to concentrations detected in sediment results in some added uncertainty to the SLERA. Naturally occurring levels of metals can differ in soil and sediment because the presence of metals in the sediment matrix can be affected by factors such as pH of the sediment and overlying water, oxidation/reduction conditions, sediment texture, presence/absence of organic matter, dissolved oxygen levels, etc. Although the concentrations of naturally occurring metals in soil and sediment may differ somewhat, soil background values can provide a reasonable point of reference for determining concentrations in sediment that may be associated with contamination and that warrant further consideration. Because concentrations in "true" background sediment may be higher or lower than their equivalent BSCs in soil, the direction of bias is unknown.

- Estimated EPCs are uncertain. For statistical purposes, if a constituent is positively identified at a site and has at least a single detection, all the samples with nondetects are assumed to have a value equal to half the reporting limit and are included in the data set, although identified for the ProUCL software (EPA, 2010) as nondetects. However, typical laboratory methods are able to detect concentrations of a chemical well below the

reporting limit, or even half the reporting limit. Therefore, although the exact concentration of a nondetect chemical is unknown, the use of half the reporting limit as a surrogate concentration likely overestimates the actual concentration and introduces a conservative bias into the risk assessment. Computed 95 percent UCL values are only estimates of the actual UCLs associated with each data set. Examples of factors affecting the uncertainty of these estimates include the number of samples, proportion of nondetects, conformance with an assumed mathematical distribution, imprecision of laboratory data, elevated detection limits (from dilutions, matrix interference, etc.), and statistical methodology. For some data sets, the MDC was used as the EPC. Uncertainties associated with the statistical determination of EPCs for the COPECs in each medium are as follows:

- A limited number of samples may not completely characterize the site because they provide less information about the population from which they are drawn than do larger sample sets. Accordingly, small sets tend to have a greater variability, which results in the calculation of wide confidence intervals on the mean concentration and high EPCs. In some cases, the 95 percent UCL may be greater than the MDC, which results in the selection of the MDC as the EPC. This did not occur at AP1, however. High confidence limits may introduce a conservative bias into the risk assessment.

- Biased soil sampling is a common practice at contaminated sites for the purposes of identifying nature and extent of contamination and to reduce the potential for Type I errors when performing environmental investigations (i.e., concluding that a site is clean when it really is not). The biased sampling approach likely overestimates chemical concentrations, resulting in greater chemical concentrations and predicted risk. The AP1 sampling strategy was not strongly biased, however, and this uncertainty is considered minor for this SLERA.

- Laboratory analytical techniques have a degree of uncertainty associated with them. These uncertainties are documented by using data qualifiers to reflect the degree of certainty of measurement. For example, some data were estimated (e.g., J-qualified), while other data were rejected (i.e., R-qualified). The direction of bias is unclear.

The use of the 95 percent UCL as the EPC is likely to underestimate the EPC in 5 percent of the cases and overestimate exposure in 95 percent of cases, imparting an overall conservative bias to the risk assessment. It should be noted that some COPEC MDCs measured in sediment and surface water were used as EPCs due to the limited number of samples; if COPECs considered to represent a plausible risk to aquatic populations were identified in these media, an additional sampling effort could potentially reduce the hazard estimate. However, this was not the case at AP1, and no additional sampling is recommended.

6.0 Risk Summary and Conclusions and Recommendations

Chemicals detected in soil, surface water, and sediment were screened against conservative benchmark values and other criteria to identify COPECs in media present at AP1. Six chemicals in soil, nine chemicals in surface water, and seven chemicals in sediment were identified as COPECs for further evaluation. A food chain model was performed at each site to evaluate the potential hazard associated with exposure to these chemicals by representative measurement receptors. The home range size and density characteristics of various ecological species of concern make it unlikely that multiple individuals of a given species (i.e., local populations) would be exposed to the small areas of contaminated soil within the 2-acre AP1 site on a regular basis. In other words, the small size of the site precludes the possibility of population-level impacts at AP1, regardless of whether contamination is present. Nevertheless, hazard estimates were generated for a number of measurement receptors under the conservative assumption that impacts to populations is plausible.

No assessment receptor exceeded an HQ of 1 for any chemical detected at AP1. Therefore, the potential for adverse ecological impacts is considered to be very low at this site, and no chemicals are identified for further evaluation for protection of the environment at AP1.

It is noted that the human health risk assessment recommends no further investigation or other actions at AP1 based on human health concerns. Therefore, no further investigation or other actions are recommended at this site based on either human health or ecological receptors.

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TABLES

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Vegetation observed during early summer (June 2, 2009) site walk	
Acer negundo	Box elder
Achillea millefolium	Yarrow
Agrimonia parviflora	Small-flowered groovebur
Agropyron repens	Quack grass
Agrostis alba	redtop
Alliaria petiolata	Garlic mustard
Ambrosia artemesiifolia	Annual ragweed
Andropogon virginicus	Broom sedge
Anemone virginiana	Thimbleweed
Apios americana	Groundnut
Apocynum cannabinum	Dogbane
Asclepias syriaca	Common milkweed
Bidens frondosa	Devils beggar ticks
Boehmeria cylindrica	Small-spike false nettle
Bromus inermis	Smooth brome
Capsella bursa-pastoris	Shepherd's purse
Carduus nutans	Nodding musk thistle
Carex aggregata	Glomerate sedge
Carex albursina	White bear sedge
Carex amphibola var. turgida	Eastern narrowleaf sedge
Carex blanda	Eastern woodland sedge
Carex frankii	Frank's sedge
Carex granularis	Limestone meadow sedge
Carex scoparia	Broom sedge
Carex sparganoides	Bur-reed sedge
Chenopodium album	Lamb's quarters
Circaea lutetiana	Southern broad-leaved enchanters nightshade
Cirsium arvense	Creeping thistle
Cirsium vulgare	Bull thistle
Clematis virginiana	Virgin's bower
Cornus racemosa	Gray dogwood
Coronilla varia	Crownvetch
Dactylis glomerata	Orchard grass
Daucus carota	Queen Anne's lace
Dichanthelium clandestinum	Deer tongue grass
Dipsacus sylvestris	Teasel
Eleagnus umbellata	Autumn olive
Eleocharis sp.	Spike rush
Epilobium coloratum	Purple-leaved willow herb
Equisetum arvense	Field horsetail
Equisetum hyemale	Scouring rush
Erigeron philadelphicus	Fleabane
Eupatorium rugosum	White snakeroot
Euphorbia maculata	Spotted spurge

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Euthamia graminifolia	Fragrant flat-topped goldenrod
Festuca sp.	Fescue
Fraxinus pennsylvanica	Green ash
Galium aparine	Cleavers
Galium asprellum	Rough bedstraw
Geum laciniatum	Rough avens
Hackelia virginiana	Virginia stickseed
Juncus torreyi	Torrey's rush
Leersia oryzoides	Rice cutgrass
Leersia virginica	White grass
Lemna minor	Lesser duckweed
Lonicera tatarica	Tartarian honeysuckle
Lycopus americana	American bugleweed
Lycopus virginicus	Virginia bugleweed
Lythrum salicaria	Purple loosestrife
Medicago lupulina	Black medick
Melilotus sp.	Sweet clover
Monarda sp.	Bee balm
Morus alba	Mulberry
Nepeta cataria	Catnip
Onoclea sensibilis	Sensitive fern
Panicum dichotomiflorum	Deer tongue grass
Panicum virgatum	Switch grass
Parthenocissus quinquefolia	Virginia creeper
Penstemon digitalis	False foxglove
Phalaris arundinacea	Reed canary grass
Phytolacca americana	Pokeweed
Plantago lanceolata	English plantain
Plantago major	Common plantain
Poa compressa	Canada bluegrass
Poa pratensis	Kentucky bluegrass
Podophyllum peltatum	Mayapple
Polygonum pennsylvanicum	Pennsylvania smartweed
Polygonum virginianum	Virginia knotweed
Prunella vulgaris	Self heal
Pycnanthemum tenuifolium	Slender-leaved mountain mint
Quercus palustris	Pin oak
Ranunculus sceleratus	Cursed crowfoot
Rosa setigera	Prairie rose
Rubus allegheniensis	Allegheny blackberry
Rubus flagellaris	Dewberry
Rubus occidentalis	Black raspberry
Rumex acetosella	Sheep sorrel
Rumex crispus	Curly dock
Salix discolor	Pussy willow

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Salix sp.	Willow
Sambucus canadensis	Common elder
Scirpus atrovirens	Green bulrush
Scirpus cyperinus	Wool grass
Scirpus polyphyllus	Leafy bulrush
Solanum carolinense	Horse nettle
Solidago canadensis	Canada goldenrod
Taraxacum officinale	Dandelion
Teucrium canadense	Germander
Toxicodendron radicans	Poison ivy
Tradescantia ohioensis	Ohio spiderwort
Trifolium pratense	Red clover
Typha angustifolia	Narrow-leaf cattail
Typha latifolia	Broad-leaf cattail
Urtica dioicia	Stinging nettle
Verbena hastata	Blue vervain
Verbena urticifolia	White vervain
Vitis riparia	Riverbank grape

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Vegetation observed during fall (October 16, 2008) site walk	
Acer negundo	Box elder
Achillea millefolium	Yarrow
Agrimonia parviflora	Small-flowered groovebur
Agropyron repens	Quack grass
Agrostis alba	redtop
Alliaria petiolata	Garlic mustard
Ambrosia artemesiifolia	Annual ragweed
Andropogon virginicus	Broom sedge
Apios americana	Groundnut
Apocynum cannabinum	Dogbane
Asclepias syriaca	Common milkweed
Aster lateriflorus	Calico aster
Aster novae-angliae	New England aster
Bidens frondosa	Devils beggar ticks
Boehmeria cylindrica	Small-spike false nettle
Bromus inermis	Smooth brome
Carduus nutans	Nodding musk thistle
Chenopodium album	Lamb's quarters
Circaea lutetiana	Southern broad-leaved enchanters nightshade
Cirsium arvense	Creeping thistle
Cirsium vulgare	Bull thistle
Clematis virginiana	Virgin's bower
Cornus racemosa	Gray dogwood
Coronilla varia	Crownvetch
Dactylis glomerata	Orchard grass
Daucus carota	Queen Anne's lace
Dichanthelium clandestinum	Deer tongue grass
Dipsacus sylvestris	Teasel
Eleagnus angustifolia	Autumn olive
Eleocharis sp.	Spike rush
Epilobium coloratum	Purple-leaved willow herb
Equisetum arvense	Field horsetail
Equisetum hyemale	Scouring rush
Eupatorium rugosum	White snakeroot
Eupatorium sessilifolium	Upland boneset
Euphorbia maculata	Spotted spurge
Euthamia graminifolia	Fragrant flat-topped goldenrod
Festuca sp.	Fescue
Fraxinus pennsylvanica	Green ash
Galium aparine	Cleavers
Geum laciniatum	Rough avens
Gnathalium obtusifolium	Catfoot
Hackelia virginiana	Virginia stickseed
Juncus torreyi	Torrey's rush

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Leersia oryzoides	Rice cutgrass
Leersia virginica	White grass
Lemna minor	Lesser duckweed
Lonicera tatarica	Tartarian honeysuckle
Lycopus americana	American bugleweed
Lycopus virginicus	Virginia bugleweed
Lythrum salicaria	Purple loosestrife
Medicago lupulina	Black medick
Melilotus sp.	Sweet clover
Monarda sp.	Bee balm
Morus alba	Mulberry
Nepeta cataria	Catnip
Onoclea sensibilis	Sensitive fern
Panicum dichotomiflorum	Deer tongue grass
Panicum virgatum	Switch grass
Parthenocissus quinquefolia	Virginia creeper
Phalaris arundinacea	Reed canary grass
Phytolacca americana	Pokeweed
Plantago lanceolata	English plantain
Plantago major	Common plantain
Podophyllum peltatum	Mayapple
Polygonum pennsylvanicum	Pennsylvania smartweed
Polygonum virginianum	Virginia knotweed
Prunella vulgaris	Self heal
Pycnanthemum tenuifolium	Slender-leaved mountain mint
Quercus palustris	Pin oak
Rosa setigera	Prairie rose
Rubus allegheniensis	Allegheny blackberry
Rubus flagellaris	Dewberry
Rubus occidentalis	Black raspberry
Rumex acetosella	Sheep sorrel
Rumex crispus	Curly dock
Salix discolor	Pussy willow
Salix sp.	Willow
Sambucus canadensis	Common elder
Scirpus atrovirens	Green bulrush
Scirpus cyperinus	Wool grass
Scirpus polyphyllus	Leafy bulrush
Setaria glauca	Yellow bristle grass
Solanum carolinense	Horse nettle
Solidago canadensis	Canada goldenrod
Taraxacum officinale	Dandelion
Teucrium canadense	Germander
Toxicodendron radicans	Poison ivy
Tradescantia ohioensis	Ohio spiderwort

Table 2-1

Plant Species Observed at Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Scientific Name	Common Name
Trifolium pratense	Red clover
Typha angustifolia	Narrow-leaf cattail
Typha latifolia	Broad-leaf cattail
Urtica dioicia	Stinging nettle
Verbena hastata	Blue vervain
Verbena urticifolia	White vervain
Vitis riparia	Riverbank grape
Xanthium strumarium	Cockle bur

Table 2-2

Mammals Observed On Site and Likely to Be Found in Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name	Scientific Name	Common Name	Observed On Site [a]
Didelphidae	*Didelphis virginiana*	Virginia opossum	
Talpidae	*Condylura cristata*	star-nosed mole (**T**)	
	Parascalops breweri	hairy-tailed mole	
	Scalopus aquaticus	Eastern mole	
Verspertilionidae	*Myotis keenii*	Keen's bat	
	M. lucifugus	little brown bat	
	M. sodalis	Indiana bat **(E*)**	
	Eptesicus fuscus	big brown bat	
	Lasionycteris noctivagans	silver-haired bat	
	Lasiurus borealis	red bat	
	L. cinereus	hoary bat	
	Nycticeius humeralis	evening bat	
	Pipistrellus subflavus	Eastern pipistrelle	
Leporidae	*Sylvilagus floridanus*	cottontail rabbit	
Sciuridae	*Glaucomys volans*	Southern flying squirrel	
	Marmota monax	woodchuck	
	Sciurus carolinensis	gray squirrel	
	S. niger	fox squirrel	
	Spermophilus tridecemlineatus	thirteen-lined ground squirrel	
	Tamias striatus	Eastern chipmunk	
	Tamiasciurus hudsonicus	red squirrel	
	Blarina brevicauda	short-tailed shrew	

Table 2-2

Mammals Observed On Site and Likely to Be Found in Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name	Scientific Name	Common Name	Observed On Site [a]
	Cryptotis parva	least shrew	
	Sorex cinereus	masked shrew	
Castoridae	*Castor canadensis*	beaver	
Cricetidae	*Microtus pennsylvanicus*	meadow vole	
	Mus musculus	house mouse	
	Ondatra zibethicus	muskrat	
	Peromyscus leucopus	white-footed mouse	
	P. maniculatus	deer mouse	
	Rattus norvegicus	Norway rat	
	Synaptomys cooperi	Southern bog lemming	
	Zapus hudsonius	meadow jumping mouse	
Procyonidae	*Procyon lotor*	raccoon	
Mustelidae	*Mephitis mephitis*	striped skunk	
	Mustela frenata	long-tailed weasel	
	M. nivalis	least weasel	
	M. vison	mink	
	Taxidea taxus	Badger (**T**)	
Canidae	*Canis latrans*	coyote	
	Urocyon cinereoargenteus	gray fox	
	Vulpes vulpes	red fox	
Cervidae	*Odocoileus virginianus*	white-tailed deer	X

Mammals likely to be found in Erie County based on information presented in:

Gottschang, J. L., 1981, *A Guide to the Mammals of Ohio* , Ohio State University Press, 176 pages.

T - Ohio threatened species.; E* - Federally endangered species.

[a] Shaw Site Reconnaissance April 27 and June 2, 2009.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
Ardeidae	*Ardea herodias*	great blue heron	(1) Regular visitor at ponds, streams, and ditches.
	Bublucus ibis	cattle egret (**E**)	(1) Rare visitor in short grass areas
	Butorides striatus	green heron	(1) Confirmed breeder, rare at ponds, streams.
	Casmerodius albus	great egret	(1) Regular visitor at ponds, streams, and ditches.
	Nycticorax nycticorax	black-crowned night heron (**T**)	(1) Regular visitor at ponds, streams, and ditches.
Anserinae	*Branta canadensis*	Canada goose	(1) Confirmed breeder; uncommon around ponds.
Anatinae	*Aix sponsa*	Wood duck	(1) Confirmed breeder, uncommon around ponds.
	Anas discors	blue-winged teal	Confirmed and/or probable breeder in county.
	A. platyrhynchos	mallard	(1) Confirmed breeder, uncommon at ponds, streams.
	A. rubripes	American black duck	(1) Possible breeder, rare at ponds, streams, ditches.
Merginae	*Lophodytes cucullatus*	hooded merganser	Confirmed and/or probable breeder in county.
Accipitrinae	*Accipiter striatus*	sharp-shinned hawk	Confirmed and/or probable breeder in county.
Buteoninae	*Buteo jamaicensis*	red-tailed hawk	Confirmed and/or probable breeder in county.
	B. lineatus	red-shouldered hawk	Confirmed and/or probable breeder in county.
	B. platypterus	broad-winged hawk	Confirmed and/or probable breeder in county.
	Haliaeetus leucocephalus	bald eagle (**T**)	Confirmed and/or probable breeder in county.
Anatidae	*Cygnus buccinator*	Trumpeter swan (**E**)	(1) Rare migrant seen flying toward lake.
Falconinae	*Falco sparverius*	American kestrel	Confirmed and/or probable breeder in county.
Phasianidae	*Colinus virginianus*	Northern bobwhite quail	Confirmed and/or probable breeder in county.
	Phasianus colchicus	ring-necked pheasant	Confirmed and/or probable breeder in county.
Rallidae	*Gallinula chloropus*	common moorhen	Confirmed and/or probable breeder in county.
	Porzana carolina	Sora	Confirmed and/or probable breeder in county.
Cathartidae	*Cathartes aura*	turkey vulture	Possible breeder in county.
Charadriidae	*Charadrius vociferus*	killdeer	(2*) Confirmed and/or probable breeder in county.
Scolopacidae	*Actitis macularia*	spotted sandpiper	Confirmed and/or probable breeder in county.
	Bartramia longicauda	upland sandpiper (**T**)	(1) Confirmed breeder, rare in grassy areas.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
	Gallinago gallinago	common snipe	Confirmed and/or probable breeder in county.
	Scolopax minor	American woodcock	(1) Confirmed breeder, uncommon in moist woodlots.
	Tringa solitaria	solitary sandpiper	(2) Occasional visitor to mud flats.
Larinae	*Larus argentatus*	herring gull	(1) Regular visitor.
	L. delawarensis	ring-billed gull	(1) Regular visitor.
Columbidae	*Columba livia*	rock dove	(1) Confirmed breeder, very common.
	Zenaida macroura	mourning dove	(1) Confirmed breeder, very common.
Cuculidae	*Coccyzus americanus*	yellow-billed cuckoo	(1) Confirmed breeder, uncommon in woodlots, shrubs.
	C. erythropthalmus	black-billed cuckoo	(1) Probable breeder, rare in woodlots & shruby areas.
Tytonidae	*Bubo virginianus*	great horned owl	(1) Confirmed breeder, uncommon in woodlots.
	Otus asio	Eastern screech-owl	(1) Confirmed breeder, common in woodlots, shrubs.
	Strix varia	barred owl	Confirmed and/or probable breeder in county.
Caprimulgidae	*Chordeiles minor*	common nighthawk	(1) Possible breeder, rare.
Apodidae	*Chaetura pelagica*	chimney swift	(1) Confirmed breeder, uncommon.
Trochilidae	*Archilochus colubris*	ruby-throated hummingbird	(1) Confirmed breeder, uncommon in woodlots, shrubs.
Alcedinidae	*Ceryle alcyon*	belted kingfisher	(1) Confirmed breeder, rare around ponds, streams.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
Picidae	*Colaptes auratus*	Northern flicker	(1) Confirmed breeder, common in woodlots.
	Dryocopus pileatus	pileated woodpecker	Confirmed and/or probable breeder in county.
	Melanerpes carolinus	red-bellied woodpecker	(1) Confirmed breeder, common in mature woods.
	M. erythrocephalus	red-headed woodpecker	(1) Confirmed breeder, uncommon in mature woods.
	Picoides pubescens	downy woodpecker	(1) Confirmed breeder, common in woodlots.
	P. villosus	hairy woodpecker	(1) Confirmed breeder, uncommon in large woodlots.
Tyrannidae	*Contopus virens*	Eastern wood-pewee	(1) Confirmed breeder, very common in large woodlots.
	Empidonax alnorum	alder flycatcher	(1) Possible breeder, rare in shrubby wet areas.
	E. minimus	least flycatcher (**T**)	(1) Probable breeder, rare in shrubby areas.
	E. traillii	willow flycatcher	(1) (2*) Confirmed breeder, very common in shrubby areas.
	E. virescens	Acadian flycatcher	(1) Confirmed breeder, uncommon in mature woodlots.
	Myiarchus crinitus	great crested flycatcher	(1) Confirmed breeder, common in large woodlots.
	Sayornis phoebe	Eastern phoebe	(1) Confirmed breeder, common near stream bridges.
	Tyrannus tyrannus	Eastern kingbird	(1) Confirmed breeder, very common - open shrub area.
Alaudidae	*Eremophila alpestris*	horned lark	(1) Probable breeder, rare in grassland, cultiv. fields.
Hirundinidae	*Hirundo pyrrhonota*	cliff swallow	Confirmed and/or probable breeder in county.
	H. rustica	barn swallow	(1) Confirmed breeder, very common near vacant bldgs.
	Progne subis	purple martin	(1) Probable breeder, rare.
	Riparia riparia	bank swallow	(1) Rare migrant or visitor.
	Stelgidopteryx seripennis	Northern rough-winged swallow	(1) Confirmed breeder, rare along streams, ditches.
	Tachycineta bicolor	tree swallow	(1) Confirmed breeder, rare around ponds.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
Corvidae	*Corvus brachyrhynchos*	American crow	(1) Confirmed breeder, very common in woodlots.
	Cyanocitta cristata	blue jay	(1) Confirmed breeder, abundant in woods.
Paridae	*Parus atricapillus*	black-capped chickadee	(1) Confirmed breeder, common in woodlots.
	P. bicolor	tufted titmouse	(1) Confirmed breeder, common in woodlots.
Sittidae	*Sitta carolinensis*	white-breasted nuthatch	(1) Confirmed breeder, uncommon in woodlots.
Troglodytidae	*Cistothorus palustris*	marsh wren	(1) Possible breeder, rare in wetlands with cattails.
	C. platensis	sedge wren	(1) Confirmed breeder, common in old grassy fields.
	Thryothorus ludovicianus	Carolina wren	(1) Probable breeder, rare in shrubby areas & woodlots.
	Troglodytes aedon	house wren	(1) Confirmed breeder, abundant in shrubby areas.
	T. troglodytes	winter wren	(1) Rare migrant.
Mimidae	*Dumetella carolinensis*	gray catbird	(1) (2*) Confirmed breeder, abundant in shrubby areas.
	Mimus polyglottos	northern mockingbird	(1) Confirmed breeder, rare in shrubby areas.
	Toxostoma rufum	brown thrasher	(1) Confirmed breeder, common in shrubby areas.
Turdidae	*Catharus fuscescens*	veery	(1) Confirmed breeder, uncommon in large woodlots.
	Hylocichla mustelina	wood thrush	(1) Confirmed breeder, very common in large woodlots.
	Sialia sialis	Eastern bluebird	(1) Confirmed breeder, common in openfields & edges.
	Turdus migratorius	American robin	(1) Confirmed breeder, abundant everywhere.
Sylviidae	*Polioptila caerulea*	blue-gray gnatcatcher	(1) Confirmed breeder, uncommon in woodlots.
	Regulus calendula	ruby-crowned kinglet	(1) Rare migrant.
Bombycillidae	*Bombycilla cedrorum*	cedar waxwing	(1) Confirmed breeder, very common everywhere.
Sturnidae	*Sturnus vulgaris*	European starling	(1) (2*) Confirmed breeder, abundant everywhere.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
Vireonidae	*Vireo bellii*	Bell's vireo	Confirmed and/or probable breeder in county.
	V. flavifrons	yellow-throated vireo	(1) Confirmed breeder, uncommon in mature woodlots.
	V. gilvus	warbling vireo	(1) Confirmed breeder, common in large woodlots.
	V. griseus	white-eyed vireo	(1) Confirmed breeder, uncommon in shrubby areas.
	V. olivaceus	red-eyed vireo	(1) Confirmed breeder, very common in woodlots.
Parulidae	*Dendroica cerulea*	cerulean warbler	(1) Possible breeder, rare in mature woodlots.
	D. dominica	yellow-throated warbler	(1) Confirmed and/or probable breeder in county.
	D. pensylvanica	chestnut-sided warbler	(1) Probable breeder, uncommon in shrubby areas.
	D. petechia	yellow warbler	(1) (2*) Confirmed breeder, abundant in shrubby areas.
	D. virens	*black-throated green warbler*	(1) Possible breeder, rare in mature woodlots.
	Geothylpis trichas	common yellowthroat	(1) Confirmed breeder, abundant in shrub areas, fields.
	Icteria virens	yellow-breasted chat	(1) Confirmed breeder, uncommon in shrubby areas.
	Mniotilta varia	black and white warbler	(1) Possible breeder, rare in mature woodlots.
	Oporornis formosus	Kentucky warbler	(1) Possible breeder, rare in mature woodlots.
	Protonotaria citrea	prothonotary warbler	Confirmed and/or probable breeder in county.
	Seiurus aurocapillus	overbird	(1) Probable breeder, rare in mature woodlots.
	S. motacilla	Louisiana waterthrush	Confirmed and/or probable breeder in county.
	Setophaga ruticilla	American redstart	(1) Probable breeder, rare in shrubby areas & woodlots.
	Vermivora leucobronchialis	Brewster's warbler	(1) Possible breeder, rare in shrubby areas and edges.
	V. pinus	blue-winged warbler	(1) Confirmed breeder, common in shrubby areas.
	Wilsonia citrina	hooded warbler	Confirmed and/or probable breeder in county.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
Icteridae	*Agelaius phoeniceus*	red-winged blackbird	(1) (2*) Confirmed breeder, abund. in grasslands, streams.
	Dolichonyx oryzivorus	bobolink	(1) Confirmed breeder, uncommon in grasslands.
	Icterus galbula	Northern oriole	(1) Confirmed breeder, uncommon in open woods.
	I. spurius	orchard oriole	(1) Confirmed breeder, common in open woods & edges.
	Molothrus ater	brown-headed cowbird	(1) (2) Confirmed breeder, abundant everywhere.
	Quiscalus quiscula	common grackle	(1) Confirmed breeder, abundant everywhere.
	Sturnella magna	Eastern meadowlark	(1) Confirmed breeder, common in grasslands.
Ploceidae	*Passer domesticus*	house sparrow	(1) Confirmed breeder, uncommon near buildings.
Thraupidae	*Piranga olivacea*	scarlet tanager	(1) Possible breeder, rare on open woods.
	P. ruba ruba	summer tanager	(1) Confirmed breeder, common in mature woodlots.
Fringillidae	*Ammodramus henslowii*	Henslow's sparrow	(1) Probable breeder, rare in old fields.
	A. savannarum	grasshopper sparrow	(1) Confirmed breeder, common in grasslands.
	Cardinalis cardinalis	Northern cardinal	(1) (2*) Confirmed breeder, abundant everywhere.
	Carduelis tristis	American goldfinch	(1) Confirmed breeder, abundant in shrubby areas.
	Carpodacus mexicanus	house finch	(1) Confirmed breeder, uncommon around buildings.
	Melospiza georgiana	swamp sparrow	(1) Confirmed breeder, rare in wet fields and ditches.
	M. melodia	song sparrow	(1) (2*) Confirmed breeder, abundant everywhere.
	Passerculus sandwichensis	Savannah sparrow	(1) Confirmed breeder, common in grasslands.
	Passerina cyanea	indigo bunting	(1) (2*) Confirmed breeder, abundant everywhere.
	Pheucticus ludovicianus	rose-breasted grosbeak	(1) Confirmed breeder, common in woodlots & edges.
	Pipilo erythrophthalmus	Eastern towhee	(1) Confirmed breeder, very common in woodlots, edges.

Table 2-3

Birds Observed On Site and/or Likely to Be Breeding
In Erie County, Ohio
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name[a]	Scientific Name[b]	Common Name[c]	Status and Frequency
	Pooecetes gramineus	vesper sparrow	(1) Confirmed breeder, uncommon in grassland & fields.
	Spiza amercana	dickcissel	Confirmed and/or probable breeder in county.
	Spizella passerina	chipping sparrow	(1) Confirmed breeder, common in open woods & lawns.
	S. pusilla	field sparrow	(1) Confirmed breeder, abundant in grasslands, shrubs.
	Zonotrichia albicollis	white-throated sparrow	(1) Late migrant, rare.

[a] Family names from Peterson, R.T., 1947, *A Field Guide to the Birds* , Sponsored by the National Audubon Society, Houghton Mifflin Company, Boston, Massachusetts.

[b] Peterjohn, B.G. and D.L. Rice, 1991, *The Ohio Breeding Bird Atlas* , The Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Columbus, Ohio, 416 pages.

[c] E - Ohio Endangered species; T - Ohio Threatened species.

Observation References:

(1) *Biological Inventory of Plum Brook Station* (Ohio Department of Natural Resources, 1994).

(2) Observed during Shaw Site Reconnaissance at Ash Pit 1 on April 27, or June 2, 2009.

An asterisk (*) indicates the species was detected during the June site visit, and is likely using the site for breeding.

Table 2-4

Reptiles Observed On Site and Likely to Be Found at Plum Brook Ordnance Works, Sandusky, Ohio

Family Name	Scientific Name	Common Name	Observed On Site
Chelydridae	*Chelydra serpentina*	snapping turtle	(1)
Kinosternidae	*Sternotherus odoratus*	musk turtle	
Emydidae	*Chrysemys picta*	painted turtle	(1)
	Emys blandingii	Blanding's turtle	(1)
	Terrapene carolina	box turtle	(1)
Colubridae	*Elaphe vulpina*	fox snake	(1)
	Heterodon platyrhinos	hog-nosed snake	
	Nerodia septemvittata	queen snake	
	N. sipedon sipedon	water snake	(1)
	Opheodrys vernalis	green snake	(1)
	Storeria dekayi	Dekay's brown snake	(1)
	Thamnophis butleri	Butler's garter snake	(1)
	T. sauritus	ribbon snake	
	T. sirtalis	common garter snake	(1)

References:

Conant, R. and J.T. Collins, 1991, *Reptiles and Amphibians, Eastern/Central North America* , Peterson Field Guide, Third Edition, Houghton Mifflin Company, Boston.

Pfingsten, R.A. and F.L. Downs (eds.), 1989, *Salamanders of Ohio* , Ohio Biological Survey Bulletin, New Series, Vol. 7, No. 2, 315 pages, 29 pls.

Wright, A.H. and A.A. Wright, 1957, *Handbook of Snakes of the United States and Canada* , Volumes I and II, Comstock Publishing Associates, Ithaca and London, 1105 pages.

Reference for on-site observation:

(1) *Biological Inventory of Plum Brook Station* (Ohio Department of Natural Resources, 1995).

Table 2-5

Amphibians Observed On Site and Likely to Be Found at Plum Brook Ordnance Works, Sandusky, Ohio

Family Name	Scientific Name	Common Name	Observed On Site
Ambystomatidae	*Ambystoma texanum*	smallmouth salamander	(1)
	Plethodon cinereus	redback salamander	(1)
Bufonidae	*Bufo americanus*	American toad	(1)
Hylidae	*Acris gryllus*	cricket frog	(1)
	Hyla versicolor	gray treefrog	(1)
	Pseudacris crucifer	spring peeper	(1)
	P. triseriata	chorus frog	(1)
Ranidae	*Rana catesbeiana*	bullfrog	(1)
	R. clamitans	green frog	(1)
	R. pipiens	Northern leopard frog	(1)

References:

Conant, R. and J.T. Collins, 1991, *Reptiles and Amphibians, Eastern/Central North America* , Peterson Field Guide, Third Edition, Houghton Mifflin Company, Boston.

Pfingsten, R.A. and F.L. Downs (eds.), 1989, *Salamanders of Ohio* , Ohio Biological Survey Bulletin, New Series, Vol. 7, No. 2, 315 pages, 29 pls.

Reference for on-site observation:

(1) *Biological Inventory of Plum Brook Station* (Ohio Department of Natural Resources, 1995).

Table 2-6

Fish Species Observed at
Plum Brook Ordnance Works, Sandusky, Ohio

Family Name	Scientific Name	Common Name	Observed On Site	Habitat[a]
Catostomidae	*Catostomus commersoni*	white sucker	(1)	lotic
Centrarchidae	*Lepomis cyanellus*	green sunfish	(1)	lentic, lotic
	Lepomis species	green sunfish hybrid	(1)	lentic
	L. gibbosus	pumpkinseed sunfish	(1)	lentic
	L. macrochirus	bluegill	(1)	lentic
	Micropterus salmoides	largemouth bass	(1)	lentic
Cyprinidae	*Campostoma anomalum*	central stoneroller	(1)	lotic
	Carassius auratus	goldfish	(1)	lentic
	Luxilus chrysocephalus	striped shiner	(1)	lotic
	Pimephales notatus	bluntnose minnow	(1)	lotic
	P. promelas	fathead minnow	(1)	lotic
	Semotilus atromaculatus	creek chub	(1)	lotic
Gasterosteidae	*Culaea inconstans*	brook stickleback	(1)	lotic
Ichtaluridae	*Ameiurus melas*	black bullhead	(1)	lentic

[a] Lotic - Flowing water such as brooks, ditches, and creeks.
Lentic - Still waters such as ponds and lakes.

Reference for on-site observation:
(1) *Biological Inventory of Plum Brook Station* (Ohio Department of Natural Resources, 1994).

Table 2-7

Summary of Samples Evaluated in the Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

Location	Sample Number	Sample Purpose	Sample Date	Depth (ft)	Analyses
Soil Samples					
PBOW99-SBA102A	PBOW99SBA102A	REG	10-Jun-99	0 - 1	Metals, SVOC
PBOW99-SBA103A	PBOW99SBA103A	REG	10-Jun-99	0 - 1	Metals, SVOC
PBOW99-SBA103B	PBOW99SBA103B	REG	10-Jun-99	1 - 4	Metals, SVOC
PBOW99-SBA104B	PBOW99SBA104B	REG	10-Jun-99	0 - 1	Metals, SVOC
PBOW99-SSA101	PBOW99SSA101	REG	10-Jun-99	0 - 0	Metals, SVOC
PBOW99-SBA101A	PBOW99SBA101A	REG	11-Jun-99	0 - 0.5	Metals, SVOC
PBOW99-SBA101A	PBOW99SBA101A-DUP	FD	11-Jun-99	0 - 0.5	Metals, SVOC
ASH PIT 1-SB01	AP0001	REG	8-Dec-08	0.5 - 1.5	Exp, Metals, PCBs SVOC
ASH PIT 1-SB01	AP0002	REG	8-Dec-08	3.5 - 5.5	Exp, Metals, PCBs SVOC
ASH PIT 1-SB02	AP0004	REG	8-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB02	AP0005	REG	8-Dec-08	3 - 3.8	Exp, Metals, SVOC
ASH PIT 1-SB06	AP0017	REG	8-Dec-08	0.8 - 1.8	Exp, Metals, PCBs SVOC
ASH PIT 1-SB06	AP0018	REG	8-Dec-08	5 - 5.8	Exp, Metals, PCBs SVOC
ASH PIT 1-SB09	AP0026	REG	8-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB09	AP0027	REG	8-Dec-08	3 - 4	Exp, Metals, PCBs SVOC
ASH PIT 1-SB03	AP0007	REG	9-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB03	AP0008	REG	9-Dec-08	3 - 5	Exp, Metals, PCBs SVOC
ASH PIT 1-SB04	AP0010	REG	9-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB04	AP0011	REG	9-Dec-08	3 - 4	Exp, Metals, Pest, PCB, SVOC
ASH PIT 1-SB04	AP0012	FD	9-Dec-08	3 - 4	Exp, Metals, Pest, PCB, SVOC
ASH PIT 1-SB05	AP0014	REG	9-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB05	AP0015	REG	9-Dec-08	3 - 3.7	Exp, Metals, PCBs SVOC
ASH PIT 1-SB08	AP0023	REG	9-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB08	AP0063	FD	9-Dec-08	0 - 1	Exp, Metals, PCBs SVOC
ASH PIT 1-SB08	AP0024	REG	9-Dec-08	3 - 5	Exp, Metals, PCBs SVOC
Sediment Samples					
AP1-SD01	AP1007	REG	19-May-09	0 - 0.5	Exp, Metals, PCB, SVOC
AP1-SD02	AP1008	REG	19-May-09	0 - 0.5	Exp, Metals, PCB, SVOC
AP1-SD03	AP1012	REG	19-May-09	0 - 0.5	Exp, Metals, PCB, SVOC
AP1-SD04	AP1013	REG	20-May-09	0 - 0.5	Exp, Metals, PCB, SVOC
Surface Water Samples					
AP1-SW01	AP2007	REG	19-May-09	NA	Exp, Metals, PCB, SVOC
AP1-SW02	AP2008	REG	19-May-09	NA	Exp, Metals, PCB, SVOC
AP1-SW03	AP2012	REG	19-May-09	NA	Exp, Metals, PCB, SVOC
AP1-SW04	AP2013	REG	20-May-09	NA	Exp, Metals, PCB, SVOC

FD - Field duplicate.
Exp - Explosives.
NA - Not applicable.
Pest - Organochlorine pesticide.
PCB - Polychlorinated biphenyl.
SVOC - Semivolatile organic compound.
VOC - Volatile organic compound.

Table 2-8

Statistical Summary and COPEC Selection for Chemicals Detected in Soil (0 to 6 feet bgs)
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	Detection Frequency	Percent Detection	Range of Values, mg/kg: Detected Concentrations Minimum	VQ	Maximum	VQ	Reporting Limits Minimum	Maximum	Mean (mg/kg)	BSC [a] (mg/kg)	ESV [b] (mg/kg)	COPEC? [c,d]	Distribution [e]	95% UCL [e] (mg/kg)	EPC [f] (mg/kg)	UCL 0-1' soil depth [g] (mg/kg)	MDC 0-1' soil depth [g] (mg/kg)	EPC 0-1' soil depth [g] (mg/kg)
Inorganics																		
Aluminum	22 / 22	100	2.77E+03		1.66E+04		3.31E+00	4.89E+01	9.19E+03	1.55E+04	pH Dependent	N (d)			---			---
Antimony	7 / 22	32	2.58E-01	J	8.38E-01		4.23E-01	2.60E+00	4.76E-01	9.30E+00	0.27	N (b)			---			---
Arsenic	22 / 22	100	3.57E+00		3.12E+01		8.46E-01	2.60E+00	1.07E+01	3.65E+01	18	N (b)			---			---
Barium	22 / 22	100	1.30E+01		1.68E+02		1.65E-01	4.89E+01	8.32E+01	8.26E+02	330	N (a)			---			---
Beryllium	17 / 22	77	1.50E+00		1.65E+01	J	1.65E-01	1.20E+00	7.00E+00	1.00E+00	21	N (a)			---			---
Cadmium	4 / 22	18	2.60E-01	J/U	3.45E-01	J	2.50E-01	6.10E-01	2.43E-01		0.36	N (a)			---			---
Calcium	22 / 22	100	2.68E+03		5.91E+04		4.72E+00	1.22E+03	1.83E+04	5.23E+04	Nutrient	N (c)			---			---
Chromium	22 / 22	100	5.51E+00		2.07E+01		4.13E-01	1.30E+00	1.31E+01	2.90E+01	26	N (a)			---			---
Cobalt	21 / 22	95	3.23E+00		2.79E+01		1.65E-01	1.22E+01	1.01E+01	1.16E+02	13	N (b)			---			---
Copper	22 / 22	100	7.71E+00		5.00E+01		4.13E-01	6.10E+00	2.52E+01	5.62E+01	28	N (b)			---			---
Iron	22 / 22	100	1.06E+04		9.51E+04		3.31E+00	2.62E+01	4.29E+04	2.34E+05	pH Dependent	N (b)			---			---
Lead	22 / 22	100	4.90E+00		2.71E+01		3.80E-01	7.90E-01	9.70E+00	4.86E+01	11	N (b)			---			---
Magnesium	21 / 22	95	6.51E+02		1.65E+04		1.65E+00	1.22E+03	4.76E+03	1.04E+04	Nutrient	N (c)			---			---
Manganese	22 / 22	100	1.25E+02		2.81E+03		1.65E-01	3.90E+00	5.71E+02	3.51E+03	220	N (b)			---			---
Mercury	12 / 22	55	1.24E-02	J	3.83E-01		2.12E-02	2.40E-01	6.76E-02	8.50E-02	0.00051	Y	Gamma	9.35E-02	9.35E-02	1.39E-01	3.83E-01	1.39E-01
Nickel	13 / 22	59	1.71E+00		7.92E+01		2.48E-01	9.80E+00	1.34E+01	5.51E+01	38	N (d)			---			---
Potassium	20 / 22	91	1.64E+02		1.72E+03		2.07E+01	1.22E+03	8.84E+02	3.39E+03	Nutrient	N (c)			---			---
Selenium	11 / 22	50	4.97E-01	J/U	2.70E+00		6.30E-01	1.30E+00	7.79E-01	2.00E+00	0.52	Y	Nonparametric	1.06E+00	1.06E+00	1.36E+00	2.70E+00	1.36E+00
Sodium	16 / 22	73	2.50E+01		1.65E+02		8.26E+00	1.22E+03	1.77E+02		Nutrient	N (c)			---			---
Thallium	8 / 22	36	2.39E-01	J	5.63E-01		4.23E-01	2.60E+00	4.59E-01	1.30E+00	1	N (a)			---			---
Vanadium	22 / 22	100	1.44E+01		3.92E+01		1.65E-01	1.31E+01	2.40E+01	4.09E+01	7.8	N (b)			---			---
Zinc	20 / 22	91	2.31E+01		9.58E+01		2.07E+00	5.20E+00	5.56E+01	3.22E+02	46	N (b)			---			---
Polychlorinated biphenyls (PCB)																		
Aroclor 1260	1 / 13	8	1.03E-01	/U	1.03E-01	/U	4.00E-02	2.69E-01	1.04E-01		0.371	N (a)			---			---
Semivolatile Organic Compounds																		---
Acenaphthylene	1 / 22	4.5	2.79E-01	JJ	2.79E-01	JJ	3.86E-01	2.37E+00	2.76E-01		29	N (a)			---			---
Anthracene	1 / 22	4.5	2.16E-01	JJ	2.16E-01	JJ	3.86E-01	2.37E+00	2.73E-01		29	N (a)			---			---
Benzo(a)anthracene	2 / 22	9	6.42E-02	J	8.56E-01	JJ	3.86E-01	2.37E+00	2.94E-01		1.1	N (a)			---			---
Benzo(a)pyrene	2 / 22	9	5.34E-02	J	7.21E-01	JJ	3.86E-01	2.37E+00	2.88E-01		1.1	N (a)			---			---
Benzo(b)fluoranthene	2 / 22	9	8.29E-02	J	1.21E+00	JJ	3.86E-01	2.37E+00	3.11E-01		1.1	Y	Nonparametric	4.58E-01	4.58E-01	8.29E-01	1.21E+00	8.29E-01
Chrysene	2 / 22	9	6.75E-02	J	8.50E-01	JJ	3.86E-01	2.37E+00	2.94E-01		1.1	N (a)			---			---
Dibenzofuran	1 / 22	4.5	7.57E-02	QJ	7.57E-02	QJ	3.86E-01	2.37E+00	3.02E-01		NSV	N (e)			---			---
Fluoranthene	3 / 22	14	4.77E-02	QJ	1.88E+00	JJ	3.86E-01	2.37E+00	3.36E-01		1.1	Y	Normal	3.56E-01	3.56E-01	1.10E+00	1.88E+00	1.10E+00
Indeno(1,2,3-cd)pyrene	2 / 22	9	3.12E-01	J	1.82E+00	JJ	3.86E-01	2.37E+00	3.49E-01		1.1	Y	Nonparametric	7.10E-01	7.10E-01	1.03E+00	1.82E+00	1.03E+00
Methylnaphthalene, 2-	2 / 22	9	3.63E-01	QJ	9.42E-01	J	3.86E-01	2.37E+00	3.04E-01		3.24	N (a)			---			---
Naphthalene	5 / 22	23	5.53E-02	J	7.64E-01	J	3.86E-01	2.37E+00	2.58E-01		29	N (a)			---			---
Phenanthrene	5 / 22	23	5.50E-02	J	8.31E-01	JJ	3.86E-01	2.37E+00	2.39E-01		29	N (a)			---			---
Pyrene	3 / 22	14	3.78E-02	QJ	1.32E+00	JJ	3.86E-01	2.37E+00	3.10E-01		1.1	Y	Normal	2.60E-01	2.60E-01	7.75E-01	1.32E+00	7.75E-01

bgs - Below ground surface.
BSC - Background screening concentration.
COPEC - Chemical of potential ecological concern.
EPC - Exposure point concentration.
ESV - Ecological screening value.
mg/kg - Milligrams per kilogram.
VQ - Validation qualifier (a "/" indicates combined VQs for a regular and field duplicate sample pair):
J - The compound/analyte was positively identified; the reported result is the estimated concentration of the compound/analyte detected in the sample analyzed.
Q - Data is biased high due to a calibration error.
U - Not detected.
NSV - No screening value.
UCL - Upper confidence limit.

[a] IT Corporation (IT), 1998, ***Site Investigation of Acid Areas*** , Plum Brook Ordnance Works, Sandusky, Ohio, August.
[b] ESVs and their sources are in Appendix B.
[c] N - Chemical is not chosen as a COPEC:
(a) - Maximum detected concentration is less than the ESV.
(b) - Maximum detected concentration is less than the BSC.
(c) - Essential nutrient.
(d) - Statistical test shows background and site data to be the same; see Appendix C.
(e) - Infrequently detected (fewer than 5 percent of all samples)
[d] Y - Chemical is chosen as COPEC.
[e] 95% UCL (Upper confidence limit) determined using ProUCL Version 4.00.05 (U.S. Environmental Protection Agency (EPA), 2010, ProUCL Version 4.00.05, Office of Research and Development, Las Vegas, Nevada, and Technology Support Center, Atlanta, GA, May, on line at http://www.epa.gov/esd/tsc/software.htm.
[f] Concentration used in risk assessment equal to 95% UCL or maximum detected concentration, whichever is lower.
[g] The EPC for the COPEC at the 0-1 feet soil depth range is used as the exposure concentration for some ecological receptors. Two samples (AP0001 and AP0017) with an end depth slightly greater than 1 foot were also used. See text for details.

Table 2-9

Statistical Summary and COPEC Selection for Chemicals Detected in Surface Water
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	Detection Frequency	Percent Detection	Range of values, µg/L: Detected Conc Minimum	VQ	Detected Conc Maximum	VQ	Reporting Limits Minimum	Reporting Limits Maximum	Arithmetic Mean µg/L	ESV [a] µg/L	COPEC? [b,c]	EPC [d] µg/L
Metals												
Aluminum	4 / 4	100	31.8	J	8770		200	200	2.23E+03	8.70E+01	Y	8.77E+03
Arsenic	1 / 4	25	8.3	J	8.3	J	10	10	5.83E+00	3.10E+00	Y	8.30E+00
Barium	4 / 4	100	31.9	J	80	J	200	200	4.56E+01	4.00E+00	Y	8.00E+01
Calcium	4 / 4	100	139000		222000		1000	1000	1.62E+05	Nutrient	N (b)	---
Chromium	1 / 4	25	13.9		13.9		10	10	7.23E+00	4.20E+01	N (a)	---
Cobalt	1 / 4	25	6.9	J	6.9	J	50	50	2.05E+01	2.30E+01	N (a)	---
Copper	1 / 4	25	19.2	J	19.2	J	25	25	1.42E+01	1.58E+00	Y	1.92E+01
Iron	3 / 4	75	26.6	J	15100		300	300	3.83E+03	1000/Nutrient	N (b)	---
Lead	3 / 4	75	2	J	15		10	10	6.03E+00	1.17E+00	Y	1.50E+01
Magnesium	4 / 4	100	26200		36900		5000	5000	2.90E+04	Nutrient	N (b)	---
Manganese	4 / 4	100	247		836		15	15	4.92E+02	1.20E+02	Y	8.36E+02
Nickel	1 / 4	25	26.2	J	26.2	J	40	40	2.16E+01	2.89E+01	N (a)	---
Potassium	4 / 4	100	2030	J	11800		10000	10000	4.51E+03	Nutrient	N (b)	---
Sodium	4 / 4	100	6400	J	9140	J	10000	10000	7.36E+03	Nutrient	N (b)	---
Vanadium	1 / 4	25	20	J	20	J	50	50	2.38E+01	1.20E+01	Y	2.00E+01
Zinc	4 / 4	100	9.6	J	93.2		20	20	3.17E+01	6.57E+01	Y	9.32E+01

ESV - Ecological screening value
EPC - Exposure point concentration
COPEC - Chemical of potential ecological concern
µg/L - Micrograms per liter.
VQ - Validation qualifier.
J - The compound/analyte was positively identified; the reported result is the estimated concentration of the compound/analyte detected in the sample analyzed.

[a] ESVs and their sources are in Appendix B.
[b] N - Chemical is not chosen as a COPEC:
(a) - Maximum detected concentration is less than the ESV.
(b) - Essential nutrient.
[c] Y - Chemical is chosen as COPEC.
[d] Due to the small sample size (i.e., < 5 samples), the maximum detected concentration is selected as the EPC.

Table 2-10

Statistical Summary and COPEC Selection for Chemicals Detected in Sediment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	Detection Frequency	Percent Detection	Range of Values, mg/kg: Detected Concentrations Minimum	VQ	Detected Concentrations Maximum	VQ	Reporting Limits Minimum	Reporting Limits Maximum	Mean mg/kg	BSC [a] mg/kg	ESV [b] mg/kg	COPEC? [c,d]	EPC [e] mg/kg
Inorganics													
Aluminum	4 / 4	100	4.49E+03		9.88E+03		1.30E+01	2.40E+01	7.84E+03	1.55E+04	NSV	N (b)	---
Antimony	3 / 4	75	5.00E-01	J	1.30E+00	J	3.80E+00	7.30E+00	1.19E+00	9.30E+00	NSV	N (b)	---
Arsenic	4 / 4	100	4.00E+00		1.59E+01		5.10E-01	9.70E-01	9.20E+00	3.65E+01	9.79E+00	N (b)	---
Barium	4 / 4	100	3.13E+01		1.10E+02		1.30E+01	2.40E+01	5.86E+01	8.26E+02	NSV	N (b)	---
Beryllium	4 / 4	100	3.00E-01	J	1.60E+00		3.20E-01	6.10E-01	7.55E-01	1.00E+00	NSV	Y	1.60E+00
Cadmium	4 / 4	100	2.30E-01	J	5.90E-01		2.50E-01	4.80E-01	4.23E-01	NA	9.90E-01	N (a)	---
Calcium	4 / 4	100	1.04E+04		2.99E+04		3.20E+02	6.10E+02	1.77E+04	5.23E+04	Nutrient	N (c)	---
Chromium	4 / 4	100	7.80E+00		1.69E+01		6.40E-01	1.20E+00	1.30E+01	2.90E+01	4.34E+01	N (a)	---
Cobalt	4 / 4	100	4.40E+00		9.90E+00		3.20E+00	6.10E+00	8.08E+00	1.16E+02	5.00E+01	N (a)	---
Copper	4 / 4	100	1.05E+01		3.85E+01		1.60E+00	3.00E+00	2.27E+01	5.62E+01	3.16E+01	N (b)	---
Iron	4 / 4	100	9.27E+03		2.17E+04		6.40E+00	1.20E+01	1.79E+04	2.34E+05	Nutrient	N (c)	---
Lead	4 / 4	100	7.00E+00	J	2.37E+01		6.40E+00	1.20E+01	1.67E+01	4.86E+01	3.58E+01	N (a)	---
Magnesium	4 / 4	100	1.81E+03		9.37E+03		3.20E+02	6.10E+02	5.13E+03	1.04E+04	Nutrient	N (c)	---
Manganese	4 / 4	100	1.65E+02		1.67E+03		1.10E+00	9.10E+00	6.55E+02	3.51E+03	4.60E+02	N (b)	---
Mercury	4 / 4	100	2.10E-02	J	1.40E-01		1.00E-01	2.00E-01	7.38E-02	8.50E-02	1.80E-01	N (a)	---
Nickel	4 / 4	100	1.20E+01		2.67E+01		2.50E+00	4.80E+00	2.14E+01	5.51E+01	2.27E+01	N (b)	---
Potassium	4 / 4	100	7.25E+02	J	1.74E+03		6.40E+02	1.20E+03	1.24E+03	3.39E+03	Nutrient	N (c)	---
Selenium	3 / 4	75	3.20E-01	J	1.30E+00	J	6.40E+00	1.20E+01	1.44E+00	2.00E+00	NSV	N (b)	---
Silver	1 / 4	25	9.90E-02	J	9.90E-02	J	6.40E-01	1.20E+00	3.49E-01	1.11E+01	5.00E-01	N (a)	---
Sodium	2 / 4	50	8.31E+01	J	1.12E+02	J	6.40E+02	1.20E+03	2.79E+02	NA	Nutrient	N (c)	---
Vanadium	4 / 4	100	1.24E+01		2.55E+01		3.20E+00	6.10E+00	1.98E+01	4.09E+01	NSV	N (b)	---
Zinc	4 / 4	100	3.33E+01		1.37E+02		1.30E+00	2.40E+00	7.86E+01	3.22E+02	1.21E+02	N (b)	---
Polychlorinated Biphenyls													
Aroclor 1254	2 / 4	50	2.50E-02	J	3.52E-02	J	2.20E-02	4.10E-02	2.11E-02		5.98E-02	N (a)	---
Aroclor 1260	2 / 4	50	2.07E-02	J	1.13E-01	J	2.20E-02	4.10E-02	3.94E-02		5.98E-02	Y	1.13E-01
Semivolatiles Organic Compounds													
Benzo(a)anthracene	1 / 4	25	1.21E-01	J	1.21E-01	J	2.20E-01	1.10E+00	2.28E-01		1.08E-01	Y	1.21E-01
Benzo(a)pyrene	1 / 4	25	1.12E-01	J	1.12E-01	J	2.20E-01	1.10E+00	2.26E-01		1.50E-01	N (a)	---
Benzo(b)fluoranthene	1 / 4	25	1.75E-01	J	1.75E-01	J	2.20E-01	1.10E+00	2.41E-01		1.04E+01	N (a)	---
Chrysene	1 / 4	25	1.49E-01	J	1.49E-01	J	2.20E-01	1.10E+00	2.35E-01		1.66E-01	N (a)	---
Dibenzofuran	1 / 4	25	1.50E-01	J	1.50E-01	J	2.20E-01	1.10E+00	2.35E-01		4.49E-01	N (a)	---
Di-n-butyl phthalate	1 / 4	25	1.80E-01	J	1.80E-01	J	4.30E-01	2.20E+00	4.90E-01		1.11E+00	N (a)	---
Fluoranthene	1 / 4	25	1.91E-01	J	1.91E-01	J	2.20E-01	1.10E+00	2.45E-01		4.23E-01	N (a)	---
Methylnaphthalene, 2-	1 / 4	25	6.16E-01		6.16E-01		2.20E-01	1.10E+00	3.52E-01		2.02E-02	Y	6.16E-01
Naphthalene	1 / 4	25	3.37E-01	J	3.37E-01	J	2.20E-01	1.10E+00	2.82E-01		1.76E-01	Y	3.37E-01
Phenanthrene	1 / 4	25	3.06E-01	J	3.06E-01	J	2.20E-01	1.10E+00	2.74E-01		2.04E-01	Y	3.06E-01
Pyrene	1 / 4	25	1.95E-01	J	1.95E-01	J	2.20E-01	1.10E+00	2.46E-01		1.95E-01	Y	1.95E-01

BSC - Background screening concentration.
COPEC - Chemical of potential ecological concern.
EPC - Exposure point concentration.
ESV - Ecological screening value.

Table 2-10

Statistical Summary and COPEC Selection for Chemicals Detected in Sediment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

J - The compound/analyte was positively identified; the reported result is the estimated concentration of the compound/analyte detected in the sample analyzed.
mg/kg - Milligrams per kilogram.
NA - Not available.
NSV - No screening value available.
VQ - Validation qualifier.

[a] Soil background screening concentrations are used for sediment. See text for details.
[b] ESVs and their sources are in Appendix B.
[c] N - Chemical is not chosen as a COPEC:
(a) - Maximum detected concentration is less than the ESV.
(b) - Maximum detected concentration is less than the BSC.
(c) - Essential nutrient.
[d] Y - Chemical is chosen as COPEC.
[e] Due to the small sample size (i.e., < 5 samples), the maximum detected concentration is selected as the EPC.

Table 3-1

Data Used to Model Exposure in the Indicator Wildlife Species
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

Indicator Species	Class/ Order	Average Body Weight[a] (kg)	Average Home Range[a] (ha)	Dietary Intake[a] (kg[dw]/day)	Soil/Sed. Intake (kg[dw]/day)	Water Intake (L/day)[b]	Trophic Level	Dietary Composition[a] (percent)
Deer mouse (*Peromyscus maniculatus*)	Mammalia/ Rodentia	0.0148	0.062	0.0028[d]	0.000056 (2%)	0.0022	Omnivore	Terr. Inverts. : 39 Plants: 61
Eastern cottontail (*Sylvilagus floridanus)*	Mammalia/ Lagomorpha	1.132	3.1	0.096[d]	0.006 (6.3%)	0.11	Herbivore	Plants: 100
Short-tailed shrew (*Blarina brevicauda)*	Mammalia/ Insectivora	0.015	0.39	0.0022[d]	0.00023 (10.4%)	0.0023	Insectivore	Terr. Inverts.: 100
White-tailed deer (*Odocoileus virginianus*)	Mammalia/ Artiodactyla	61[c]	518[c]	2.0[d]	0.04 (2%)	4	Herbivore	Plants: 100
Marsh wren (*Cistothorus palustris*)	Aves/ Passeriformes	0.01	0.054	0.0029[d]	0.000058 (2%)	0.0027	Insectivore	Terr. Inverts.: 100
Red-tailed hawk (*Buteo jamaicensis*)	Aves/ Falconiformes	0.957	842	0.057[d]	0.00114 (2%)	0.057	Carnivore	Rabbits: 25.3 Shrews: 25.3 Mice: 25.3 Birds: 24
Muskrat [e] (*Ondata zibethicus*)	Mammalia/ Rodentia	1.174	0.13	0.352	negligible	0.11	Herbivore	Aquatic plants: 100
Raccoon (*Procyon lotor*)	Mammalia/ Carnivora	5.1	156	0.26 [d]	0.024 (9.4%) (assumed 50% soil and 50% sediment)	0.43	Omnivore	Aq. Inverts.: 21 Terr. Inverts.: 30 Mice: 5 Plants: 42 (50% terrestrial, 50% aquatic) Fish: 2

[a] From EPA (1993), except as noted.

[b] Allometric equations for mammals and birds from EPA (1993), as follows:

Mammals: WI (water ingestion; L/day) = 0.099 $Wt^{0.90}$ (kg), where Wt = body weight.

Birds: WI (L/day) = 0.059 $Wt^{0.67}$ (kg).

[c] Information is from *A Guide to the Mammals of Ohio* (Gottschang, 1981).

[d] Allometric equation for mammals: FI (kg/day) = 0.0687 $Wt^{0.822}$ for shrew, deer, and raccoon; FI (g/day) = 0.621 $Wt^{0.564}$ for rodents (deer mouse); and FI (g/day) = 0.577 $Wt^{0.727}$ for small herbivores (cottontail).
Allometric equation for birds: FI (kg/day) = 0.0582 Wt0.651 (EPA, 1993), where FI = food ingestion (dry weight) and Wt = body weight. Allometric equations from EPA (1993).

[e] Exposure parameters obtained from OEPA-DERR (2008) Ecological Risk Assessment Guidance Document, Revised April 2008, On line: http://www.epa.ohio.gov/portals/30/rules/RR-031.pdf.

References

U.S. Environmental Protection Agency (EPA), 1993, *Wildlife Exposure Factors Handbook* , Vols. I and II, Office of Research and Development, Washington, D.C., EPA/600/R-93/187a.

Table 3-2

Bioaccumulation Factors or Regression
Equations Utilized for the Soil-to-Plant and Sediment-to-Aquatic Plant Pathways
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

COPEC in Soil or Sediment	EPA, 2008	Efroymson et al., 2001				Other BAF/BCF (1)		Regression Equation (2)	Recommended BAF/BCF (3)	Source
		Minimum BAF/BCF	Median BAF/BCF	90th Percentile BAF/BCF[b]	Maximum BAF/BCF					
Inorganics										
Beryllium	ln (AGP)=0.7345(ln[soil])-0.5361	--	--	--	--	--		--	Eco-SSL Regression	EPA (2008), Table 4a
Mercury	--	0.0015	0.65	5.0	12	0.55	a	ln (AGP)=0.54(ln[soil])-1.00	Regression Equation	Efroymson et al. (2001)
Selenium	ln (AGP)=1.104(ln[soil])-0.677	0.02	0.67	3.0	77	0.025	a	ln (AGP)=0.56(ln[soil])+1.58	Eco-SSL Regression	EPA (2008), Table 4a
PCBs										
Aroclor 1260	--	--	--	--	--	--		Log (BCF)=-0.578(Log[Kow])+1.588	0.00064	Travis & Arms Kow Regression Eq.
SVOCs										
2-Methylnaphthalene	--	--	--	--	--	--		Log (BCF)=-0.578(Log[Kow])+1.588	0.27	Travis & Arms Kow Regression Eq.
Benzo(a)anthracene	ln (AGP)=0.5944(ln[soil])-2.7078	--	--	--	--	--		--	Eco-SSL Regression	EPA (2008), Table 4b
Benzo(b)fluoranthene	0.31	--	--	--	--	0.31	b	--	0.31	EPA (2008), Table 4b
Fluoranthene	0.5	--	--	--	--	0.5	b	--	0.5	EPA (2008), Table 4b
Indeno(123-cd)pyrene	0.11	--	--	--	--	0.11	b	--	0.11	EPA (2008), Table 4b
Naphthalene	12.2	--	--	--	--	12.2	b	--	12.2	EPA (2008), Table 4b
Phenanthrene	ln (AGP)=0.6203(ln[soil])-0.1665	--	--	--	--	--		--	Eco-SSL Regression	EPA (2008), Table 4b
Pyrene	0.72	--	--	--	--	0.72	b	--	0.72	EPA (2008), Table 4b

Notes:

1. For inorganic chemicals without BAF/BCF data, BAF/BCFs were derived from the Baes, et al. (1984) and IAEA (1994) data.
2. Efroymson, R.A., et. al., 2001, *Uptake of Inorganic Chemicals from Soil by Plant Leaves: Regressions of Field Data* , Environ. Tox. Chem., 20:2561-2571 for above ground plant tissue concentration and Travis and Arms (1988) for BCF.
3. For the values estimated using Travis and Arms (1988) K_{ow} regression equation, K_{ow} values were obtained using the K_{ow} WIN application in EPA's EPI Suite software (http://www.epa.gov/oppt/exposure/pubs/episuite.htm).

-- indicates that a BAF/BCF or regression equation is not available.

[a] Average of the vegetative and reproductive transfer factors presented in Baes, et al. (1984); note: value from this reference used if no appropriate value available from IAEA (1994).

[b] From USEPA (2008).

BAF - Bioaccumulation factor.
BCF - Bioconcentratioin factor.
EPA - U.S. Environmental Protection Agency.
IAEA - International Atomic Energy Agency.

References:

Baes, C. F., R.D. Sharp, A.L. Sjoreen and R. W. Shor (1984). *A review and analysis of parameters for assessing transport of environmentally released radionuclides through agriculture* . ORNL-5786, September 1984.
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Table 3-3

Bioaccumulation Factors or Regression Equations Utilized for the Soil-to-Earthworm Pathway Ash Pit 1 Plum Brook Ordnance Works, Sandusky, Ohio

Constituent	PBOW Site-Specific BCF [a]	Sample, et al. 1998			Beyer, 1990 BAF/BCF	Regression Equation	Recommended BAF/BCF	Source of BAF/BCF	Rationale for BAF/BCF
		Median BAF/BCF	90th Percentile BAF/BCF	Maximum BAF/BCF					
Inorganics									
Mercury	--	1.693	20.625	33	--	ln (EW)=0.33(ln[soil])+0.078	Regression Equation	Sample et al. 1998	Chemical-specific regression equation
Selenium	--	0.985	1.34	13.733	--	ln (EW)=0.733(ln[soil])-0.075	Regression Equation	EPA 2008, Table 4a	Chemical-specific regression equation
Semivolatile Organics									
Benzo(b)fluoranthene	0.21	--	--	--	0.32	--	0.21	Site field study	Plum Brook site-specific BAF (IT, 2001)
Fluoranthene	0.21	--	--	--	0.079	--	0.21	Site field study	Plum Brook site-specific BAF (IT, 2001)
Indeno(123-cd)pyrene	0.51	--	--	--	0.42	--	0.51	Site field study	Plum Brook site-specific BAF (IT, 2001)
Pyrene	0.45	--	--	--	0.092	--	0.45	Site field study	Plum Brook site-specific BAF (IT, 2001)

-- indicates that a BAF/BCF or regression equation is not available.
BAF - Bioaccumulation factor.
BCF - Bioconcentration factor.

[a] IT Corporation (IT), 2001, *Redwater Pond Areas Baseline Ecological Risk Assessment, Plum Brook Ordnance Works, Sandusky, Ohio* , prepared for U.S. Army Corps of Engineers, Nashville District, April.

K_{ow} values obtained from U.S. Environmental Protection Agency (EPA) EPI Suite Version 4.0, http://www.epa.gov/oppt/exposure/pubs/episuitedl.htm

References:

Beyer, W.N., 1990, *Evaluating Soil Contamination, Biological Report 90(2)* , U.S. Department of the Interior, U.S. Fish and Wildlife Service.
EPA, 2008, *Guidance for Developing Ecological Soil Screening Levels (Eco-SSL)* , Office of Solid Waste and Emergency Response, Directive 92857.7-55, Washington, D.C.
IT Corporation (IT), 2001, *Redwater Pond Areas Baseline Ecological Risk Assessment, Plum Brook Ordnance Works, Sandusky, Ohio* , prepared for U.S. Army Corps of Engineers, Nashville District, April.
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Table 3-4

Bioaccumulation Factors or Regression Equations Utilized for the
Soil-to-Mammal/Bird[a] Pathway
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

Constituent	Sample et al., (1998)						EPA (1999)	Other BAF		Regression Equation	Recommended BAF	Rationale for Recommended BAF
	Insectivore Median BAF	Herbivore Median BAF	Omnivore Median BAF	General[b] Median BAF	General[b] Maximum BAF	General[b] 90th percentile BAF	Maximum BAF Avian or Mammal					
Inorganics												
Mercury	1.046	0.0239[c]	0.0543	0.0543	1.046	0.192	--	--	--	--	0.192	"General: 90th Percentile" used because of uncertainties regarding the type of mammalian prey items.
Selenium	0.7241	0.0221[d]	0.2062	0.1619	1.754	1.1867	--	--	--	ln (M)=0.3764(ln[soil]) -0.4158	Regression	EPA (2008)-Attach 4-1, Table 4a
Semivolatile Organics												
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	0	EPA (2008) recommendation for PAHs
Fluoranthene	--	--	--	--	--	--	--	--	--	--	0	EPA (2008) recommendation for PAHs
Indeno(123-cd)pyrene	--	--	--	--	--	--	--	--	--	--	0	EPA (2008) recommendation for PAHs
Pyrene	--	--	--	--	--	--	--	--	--	--	0	EPA (2008) recommendation for PAHs

-- indicates that a BAF is not available.
BAF - Bioaccumulation factor.
PAH - Polycyclic aromatic hydrocarbon.
EPA - U.S. Environmental Protection Agency.
[a] Bird BAF values were based on the recommended small mammal BAF values, as bird uptake values are not readily available.
[b] "General" indicates that the combination dataset used for insectivore, herbivore, and omnivore receptors was used to estimate a "general" receptor BAF value.
[c] Only one BAF value available for exposure to mercury in soil (median is also 90th percentile value and maximum value).
[d] Mean value presented, as median value not given in Sample, et al. (1998).

References:

EPA, 2008, *Guidance for Developing Ecological Soil Screening Levels (Eco-SSL)* , Office of Solid Waste and Emergency Response, Directive 92857.7-55, Washington, D.C.
EPA, 1999, *Screening level ecological risk assessment protocol for hazardous waste combustion facilities* , August, EPA530-D-99-001A.
Sample et al., 1998, *Development and Validation of Bioaccumulation Models for Small Mammals,* ES/ER/TM-219.

Table 3-5

Bioaccumulation Factors Utilized
for the Sediment-to-Benthic Invertebrate Pathway
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

Constituent	PBOW Site-Specific BCFs [a]	Bechtel Jacobs (1998) Median BAF/BCF (dry weight)	Bechtel Jacobs (1998) 90th Percentile BAF/BCF (dry weight)	Bechtel Jacobs (1998) Maximum BAF/BCF (dry weight)	EPA (1999) BAF/BCF (dry weight)	Other BAF/BCF (dry weight)	Recommended BAF/BCF (dry weight)	Rationale for Recommended BAF/BCF
Inorganics								
Beryllium	--	--	--	--	5.39 [b]	--	5.39	EPA, 1999
PCBs								
Aroclor 1260	--	4.67	21.89	51.31	3.2	--	3.2	EPA (1999) BAF based on empirical data; based on Aroclor 1254
Semivolatile Organics								
2-Methylnaphthalene	--	--	--	--	--	4.3/4.9 [d]	4.3/4.9	Based on naphthalene
Benzo(a)anthracene	--	--	--	--	1.45	1.07/1.23 [d]	1.45	EPA (1999) BAF based on empirical data; based on benzo(a)pyrene
Naphthalene	--	--	--	--	--	4.3/4.9 [d]	4.3/4.9	Maruya et al. (1997) BAF based on empirical data
Phenanthrene	--	--	--	--	--	0.88/1 [d]	0.88/1	Maruya et al. (1997) BAF based on empirical data
Pyrene	--	--	--	--	--	1.3/1.49 [d]	1.3/1.49	Maruya et al. (1997) BAF based on empirical data

-- indicates that a BAF/BCF or regression equation is not available.
BAF - Bioaccumulation factor.
BCF - Bioconcentration factor.
EPA - U.S. Environmental Protection Agency.

[a] IT Corporation (IT), 2001, *Redwater Pond Areas Baseline Ecological Risk Assessment, Plum Brook Ordnance Works, Sandusky, Ohio* , prepared for U.S. Army Corps of Engineers, Nashville District, April.

[b] Empirical data not available in EPA, 1999. Value presented is based on the mean of 6 recommended values for metals with empirical data as presented in Table C-6 (EPA, 1999).

[d] Maruya, K.A., R.W. Risebrough, and A.J. Horne, 1997, *The bioaccumulation of polynuclear aromatic hydrocarbons by benthic invertebrates in an intertidal marsh* , Environmental Toxicology and Chemistry, 16: 1087 - 1097. The polycyclic aromatic hydrocarbon (PAH) biota-sediment accumulation factors (BSAF) for polychaetes or clams (naphthalene only) were averaged. The averaged values were then adjusted using the average percent lipid content in the study (polychaetes = 1.6%, clams = 1.1%) and site-specific organic carbon contents of 3.2% for Ash Pit 1 (average of two samples; first BAF) and 2.8% (one sample; second BAF) for Ash Pit 3. An adjustment was also made for converting the BSAFs from wet weight to dry weight (DW), assuming 83.3% moisture content. The final dry weight BAFs were calculated using the following equation:
$BSAF_{DW}$ = Avg BSAF x (Flipid/Foc) x 1/(1- % moisture/100)

References:

Bechtel Jacobs Company LLC, 1998, *Biota Sediment Accumulation Factors for Invertebrates: Review and Recommendations for the Oak Ridge Reservation* , BJC/OR-112. (Depurated and nondepurated results used).

EPA, 2000, *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment* , USEPA Bioaccumulation Analysis Workgroup, February.

EPA, 1999, *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities* , EPA530-D-99-001A (Peer Review Draft). **Note:** Only values based on empirical studies were used. Values were reported on a wet weight basis. Values were multiplied by 5.99 to convert to a dry-weight basis (see EPA, 1999).

Table 3-6

Bioaccumulation Factors and Regression Equations Utilized for the Surface Water-to-Fish Pathway Ash Pit 1 Plum Brook Ordnance Works, Sandusky, Ohio

Constituent	PBOW Site-Specific BCFs [a]	EPA (1999) BAF/BCF [b] (dry weight)	EPA (1989) BAF/BCF [c] (dry weight)	RAIS Database [d] (dry weight)	Regression Equation	Recommended BCF	Rationale for Recommended BAF/BCF
Inorganic Chemicals							
Aluminum	780	13.5	--	2,500	--	780	Site specific BCF (IT, 2001)
Arsenic	174	570	1,750	1,500	--	174	Site specific BCF (IT, 2001)
Barium	146	3165	--	20	--	146	Site specific BCF (IT, 2001)
Copper	1211.5	3,550	5,915	1,000	--	1211.5	Site specific BCF (IT, 2001)
Lead	63.8	0.45	895	1,500	--	63.8	Site specific BCF (IT, 2001)
Manganese	247	--	--	2,000		247	Site specific BCF (IT, 2001)
Vanadium	445.5	--	--	--		445.5	Site specific BCF (IT, 2001)
Zinc	1217	10,295	2,890	5,000	--	1217	Site specific BCF (IT, 2001)

-- indicates that a BAF/BCF or regression equation is not available.

BAF - Bioaccumulation factor.

BCF - Bioconcentration factor.

EPA - U.S. Environmental Protection Agency.

IT - IT Corporation.

[a] Values are from IT, 2001. The listed BCF is the average of the West Area Red Water Pond reasonable maximum exposure value, and the average of the BCFs for the three aquatic organisms evaluated for the Pentolite Road area.

[b] Values are from EPA, 1999, adjusted to dry weight by multiplying by a factor of 5.

[c] Values are from EPA, 1989, and assumed to be in wet weight; adjusted to dry weight by multiplying by a factor of 5.

[d] Values are from Risk Assessment Information System (RAIS), current as of June 2010. Values were assumed to be in wet weight and were adjusted to dry weight by multiplying by a factor of 5.

References:

Bintein, S., and J. Devillers, 1992, *Nonlinear Dependence of Fish Bioconcentration on n-Octanol/Water Partition Coefficient* , CTIS.

EPA, 1999, *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities* , EPA530-D-99-001A (Peer Review Draft).

EPA, 1989, *Assessing Human Health Risks from Chemically Contaminated Fish and Shellfish* , EPA503-8-89-002.

IT Corporation (IT), 2001, *Redwater Pond Areas Baseline Ecological Risk Assessment, Plum Brook Ordnance Works, Sandusky, Ohio* , prepared for U.S. Army Corps of Engineers, Nashville District, April.

Risk Assessment Information System (RAIS), on-line database, current as of June 2007, http://rais.ornl.gov

Table 4-1

Toxicity Reference Values for Mammals
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

	Toxicity Value	NOAEL (mg/kg/d)	Test Species	Reference	Toxicity Value	LOAEL (mg/kg/d)	Test Species	Reference
Inorganics								
Aluminum	--	1.93	mouse	Sample, et al. (1996)	--	19.3	mouse	Sample, et al. (1996)
Arsenic	--	0.126	mouse	Sample, et al. (1996)	--	1.26	mouse	Sample, et al. (1996)
Barium	--	5.1	rat	Sample, et al. (1996)	--	19.8	rat	Sample, et al. (1996)
Beryllium	--	0.66	rat	Sample, et al. (1996)	0.66 (NOAEL)	3.3	rat	Sample, et al. (1996)
Copper	--	11.7	mink	Sample, et al. (1996)	--	15.14	mink	Sample, et al. (1996)
Lead	--	8	rat	Sample, et al. (1996)	--	80	rat	Sample, et al. (1996)
Manganese	--	88	rat	Sample, et al. (1996)	--	284	rat	Sample, et al. (1996)
Mercury (mink)	--	1	mink	Sample, et al. (1996)	1.0 (NOAEL)	5	mink	Sample, et al. (1996)
Mercury (mouse)	--	13	mouse	Sample, et al. (1996)	--	132	mouse	Sample, et al. (1996)
Selenium	--	0.2	rat	Sample, et al. (1996)	--	0.33	rat	Sample, et al. (1996)
Vanadium	--	0.21	rat	Sample, et al. (1996)	--	2.1	rat	Sample, et al. (1996)
Zinc	--	160	rat	Sample, et al. (1996)	--	320	rat	Sample, et al. (1996)
PCBs								
Aroclor-1260 (Aroclor-1254)	--	0.068	mouse	Sample, et al. (1996)	--	0.68	mouse	Sample, et al. (1996)
Semivolatile Organics								
2-Methylnaphthalene	--	2.45	rat	LANL (2010)	--	12.25	rat	LANL (2010)
Benzo(a)anthracene	--	1	mouse	Sample et al, (1996) B(a)P as surrogate	--	10	mouse	B(a)P as surrogate
Benzo(b)fluoranthene	40 (chronic LOAEL)	4	rodent	LANL (2010)	--	20	rodent	LANL (2010)
Fluoranthene	--	1	mouse	B(a)P as surrogate	--	10	mouse	B(a)P as surrogate
Indeno(1,2,3-cd)pyrene	72 (chronic LOAEL)	7.2	rodent	LANL (2010)	--	36	rodent	LANL (2010)
Naphthalene	--	14.3	multiple sp.	LANL (2010)	--	71.5	multiple sp.	LANL (2010)
Phenanthrene	514 (acute NOAEL)	5.14	rat	LANL (2010)	--	25.7	rat	LANL (2010)
Pyrene	75 (subchronic NOAEL)	7.5	mouse	LANL (2010)	--	37.5	mouse	LANL (2010)

LOAEL - Lowest-observed-adverse-effects level.

mg/kg/d - Milligrams per kilogram per day.

NOAEL - No-observed-adverse-effect level.

REFERENCES

Los Alamos National Laboratory (LANL), 2010, ECORISK Database (Release 2.5), Environmental Restoration Project, Los Alamos National Laboratory, Los Alamos, NM, October.

Sample, B.E., D.M. Opresko, and G.W. Suter II. 1996, Toxicological Benchmarks for Wildlife, 1996 Revision, Risk Assessment Program, Health Sciences Research Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Table 4-2

Toxicity Reference Values for Birds
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

COPEC	Toxicity Value	NOAEL (mg/kg/d)	Test Species	Reference	Toxicity Value	LOAEL (mg/kg/d)	Test Species	Reference
Inorganics								
Aluminum	--	110	ringed dove	Sample, et al. (1996)	--	1100	ringed dove	Sample, et al. (1996)
Arsenic	--	5.14	mallard duck	Sample, et al. (1996)	--	12.84	mallard duck	Sample, et al. (1996)
Barium	--	20.8	chicks	Sample, et al. (1996)	--	41.7	chicks	Sample, et al. (1996)
Beryllium	NA							
Copper	--	47	chicks	Sample, et al. (1996)	--	61.7	chicks	Sample, et al. (1996)
Lead (quail)	--	1.13	Japanese quail	Sample, et al. (1996)	--	11.3	Japanese quail	Sample, et al. (1996)
Lead (kestrel)	--	3.85	Am. Kestrel	Sample, et al. (1996)	--	38.5	Am. Kestrel	Sample, et al. (1996)
Manganese	--	977	Japanese quail	Sample, et al. (1996)	--	9770	Japanese quail	Sample, et al. (1996)
Mercury	--	0.45	Japanese quail	Sample, et al. (1996)	--	0.9	Japanese quail	Sample, et al. (1996)
Selenium (duck)	--	0.5	mallard duck	Sample, et al. (1996)	--	1	mallard duck	Sample, et al. (1996)
Selenium (owl)	--	0.44	screech owl	Sample, et al. (1996)	--	1.5	screech owl	Sample, et al. (1996)
Vanadium	--	11.38	mallard duck	Sample, et al. (1996)	--	113.8	mallard duck	Sample, et al. (1996)
Zinc	--	14.5	hens	Sample, et al. (1996)	--	131	hens	Sample, et al. (1996)
PCBs								
Aroclor-1260 (Aroclor-1254)	--	0.2	ring neck pheasant	Sample, et al. (1996)	--	1.8	ring neck pheasant	Sample, et al. (1996)
Semivolatile Organics								
2-Methylnaphthalene	--	22.8	Mallard	Naphthalene as surrogate; Patton and Dieter (1980)	--	228	Mallard	Naphthalene as surrogate; Patton and Dieter (1980)
Benzo(a)anthracene	7 (subchronic NOAEL)	0.7	Bobwhite quail	LANL (2010)	--	3.5	Bobwhite quail	LANL (2010)
Benzo(b)fluoranthene	--	0.14	chicken	EPA (1999)	--	0.7	chicken	EPA (1999)
Fluoranthene	--	39.5	chicken	Rigdon and Neal (1963)	--	395	chicken	Rigdon and Neal (1963)
Indeno(1,2,3-cd)pyrene	--	1	chicken	EPA (1999)	--	5	chicken	EPA (1999)
Napthalene	1500 (acute NOAEL)	15	Bobwhite quail	LANL (2010)	--	75	Bobwhite quail	LANL (2010)
Phenanthrene	--	1	chicken	Based on Benzo(a)pyrene	--	5	chicken	Based on Benzo(a)pyrene
Pyrene	--	39.5	chicken	Rigdon and Neal (1963)	--	395	chicken	Rigdon and Neal (1963)

LOAEL - Lowest-observed-adverse-effect level.
mg/kg/d - Milligrams per kilogram per day.
NA - No toxicity value available
NOAEL - No-observed-adverse-effect level.

REFERENCES

Los Alamos National Laboratory (LANL), 2010, ECORISK Database (Release 2.5), Environmental Restoration Project, Los Alamos National Laboratory, Los Alamos, NM, October.
EPA, 1999, *Screening level ecological risk assessment protocol for hazardous waste combustion facilities* , August, EPA530-D-99-001A.
Patton, J.F. and M.P. Dieter, 1980, "Effects of petroleum hydrocarbons on heptic function in the duck", *Comp. Biochem. Physiol.,* 65C:33-36.
Sample, B.E., D.M. Opresko, and G.W. Suter II, 1996, *Toxicological Benchmarks for Wildlife, 1996 Revision,* Risk Assessment Program, Health Sciences Research Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
Rigdon, R.H. and J. Neal, 1963, *Absorption and Excretion of Benzo(a)pyrene, Observation in the Duck, Chicken, Mouse, and Dog* . Texas Rep. Biol. And Med. 21(2):247-261.

Table 5-1

Wildlife Hazard Quotients for all Assessment Receptors
Ash Pit 1
Plum Brook Ordnance Works,
Sandusky, Ohio

COPEC	Deer Mouse		Short-tailed Shrew		Cottontail Rabbit		Marsh Wren		White-tailed Deer		Raccoon		Red-tailed Hawk		Muskrat	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Metals																
Aluminum	6.75E-01	6.75E-02	6.97E-01	6.97E-02	1.15E-01	1.15E-02	2.15E-02	2.15E-03	4.66E-04	4.66E-05	2.08E-02	2.08E-03	4.57E-06	4.57E-07	4.26E-01	4.26E-02
Arsenic	9.79E-03	9.79E-04	1.01E-02	1.01E-03	1.67E-03	1.67E-04	4.36E-04	1.75E-04	6.75E-06	6.75E-07	8.96E-05	8.96E-06	9.25E-08	3.70E-08	6.17E-03	6.17E-04
Barium	2.33E-03	6.01E-04	2.41E-03	6.20E-04	3.98E-04	1.03E-04	1.04E-03	5.18E-04	1.61E-06	4.14E-07	1.90E-05	4.89E-06	2.20E-07	1.10E-07	1.47E-03	3.79E-04
Beryllium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	0.00E+00	0.00E+00	8.26E-04	1.65E-04	NA	NA	3.75E-01	7.51E-02
Copper	2.44E-04	1.89E-04	2.52E-04	1.94E-04	4.16E-05	3.22E-05	1.10E-04	8.40E-05	1.68E-07	1.30E-07	1.12E-05	8.69E-06	2.34E-08	1.78E-08	1.54E-04	1.19E-04
Lead	2.79E-04	2.79E-05	2.88E-04	2.88E-05	4.76E-05	4.76E-06	3.58E-03	3.58E-04	1.92E-07	1.92E-08	1.45E-06	1.45E-07	2.23E-07	2.23E-08	1.76E-04	1.76E-05
Manganese	1.41E-03	4.38E-04	1.46E-03	4.51E-04	2.41E-04	7.47E-05	2.31E-04	2.31E-05	9.73E-07	3.02E-07	1.66E-05	5.14E-06	4.90E-08	4.90E-09	8.90E-04	2.76E-04
Mercury	4.37E-03	4.30E-04	5.69E-03	5.60E-04	2.31E-04	2.27E-05	3.65E-01	1.83E-01	4.11E-07	4.04E-08	5.39E-05	1.08E-05	3.75E-06	1.88E-06	0.00E+00	0.00E+00
Selenium	8.64E-01	5.24E-01	7.90E-01	4.79E-01	8.82E-02	5.35E-02	6.88E-01	3.44E-01	1.44E-04	8.73E-05	7.92E-04	4.80E-04	9.98E-05	2.93E-05	0.00E+00	0.00E+00
Vanadium	1.42E-02	1.42E-03	1.46E-02	1.46E-03	2.42E-03	2.42E-04	4.75E-04	4.75E-05	9.76E-06	9.76E-07	2.66E-04	2.66E-05	1.01E-07	1.01E-08	8.92E-03	8.92E-04
Zinc	8.66E-05	4.33E-05	8.93E-05	4.47E-05	1.48E-05	7.39E-06	1.74E-03	1.92E-04	5.97E-08	2.98E-08	4.01E-06	2.00E-06	3.68E-07	4.07E-08	5.46E-05	2.73E-05
PCBs																
Aroclor 1260	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-04	3.16E-05	0.00E+00	0.00E+00	3.19E-04	3.19E-05
Semivolatile Organics																
2-Methylnaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.70E-05	1.34E-05	0.00E+00	0.00E+00	2.04E-02	4.07E-03
Benzo(a)anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-05	1.23E-06	0.00E+00	0.00E+00	5.70E-03	5.70E-04
Benzo(b)fluoranthene	1.14E-02	2.28E-03	5.27E-03	1.05E-03	1.71E-03	3.42E-04	3.95E-01	7.90E-02	1.94E-06	3.87E-07	9.61E-06	1.92E-06	6.78E-06	1.36E-06	0.00E+00	0.00E+00
Fluoranthene	8.46E-02	8.46E-03	1.64E-02	1.64E-03	1.37E-02	1.37E-03	1.86E-03	1.86E-04	9.48E-06	9.48E-07	6.26E-05	6.26E-06	3.19E-08	3.19E-09	0.00E+00	0.00E+00
Indeno(1,2,3-cd)pyrene	7.77E-03	1.55E-03	8.88E-03	1.78E-03	5.50E-04	1.10E-04	1.59E-01	3.18E-02	6.57E-07	1.31E-07	8.49E-06	1.70E-06	1.18E-06	2.37E-07	0.00E+00	0.00E+00
Napthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-05	4.38E-06	0.00E+00	0.00E+00	8.62E-02	1.72E-02
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.05E-06	1.61E-06	0.00E+00	0.00E+00	2.37E-02	4.74E-03
Pyrene	1.24E-02	2.48E-03	2.82E-03	5.63E-04	1.79E-03	3.58E-04	2.67E-03	2.67E-04	1.31E-06	2.63E-07	1.24E-05	2.47E-06	2.25E-08	2.25E-09	5.61E-03	1.12E-03

COPEC - Chemical of potential ecological concern.
LOAEL - Lowest-observed-adverse-effect level.
NA - No toxicity data available; hazard quotients not calculated.
NOAEL - No-observed-adverse-effect level.

Shaded cells indicate a hazard quotient greater than 1, when rounded. All hazard quotients at Ash Pit 1 were below 1 when rounded to one significant figure.

FIGURES

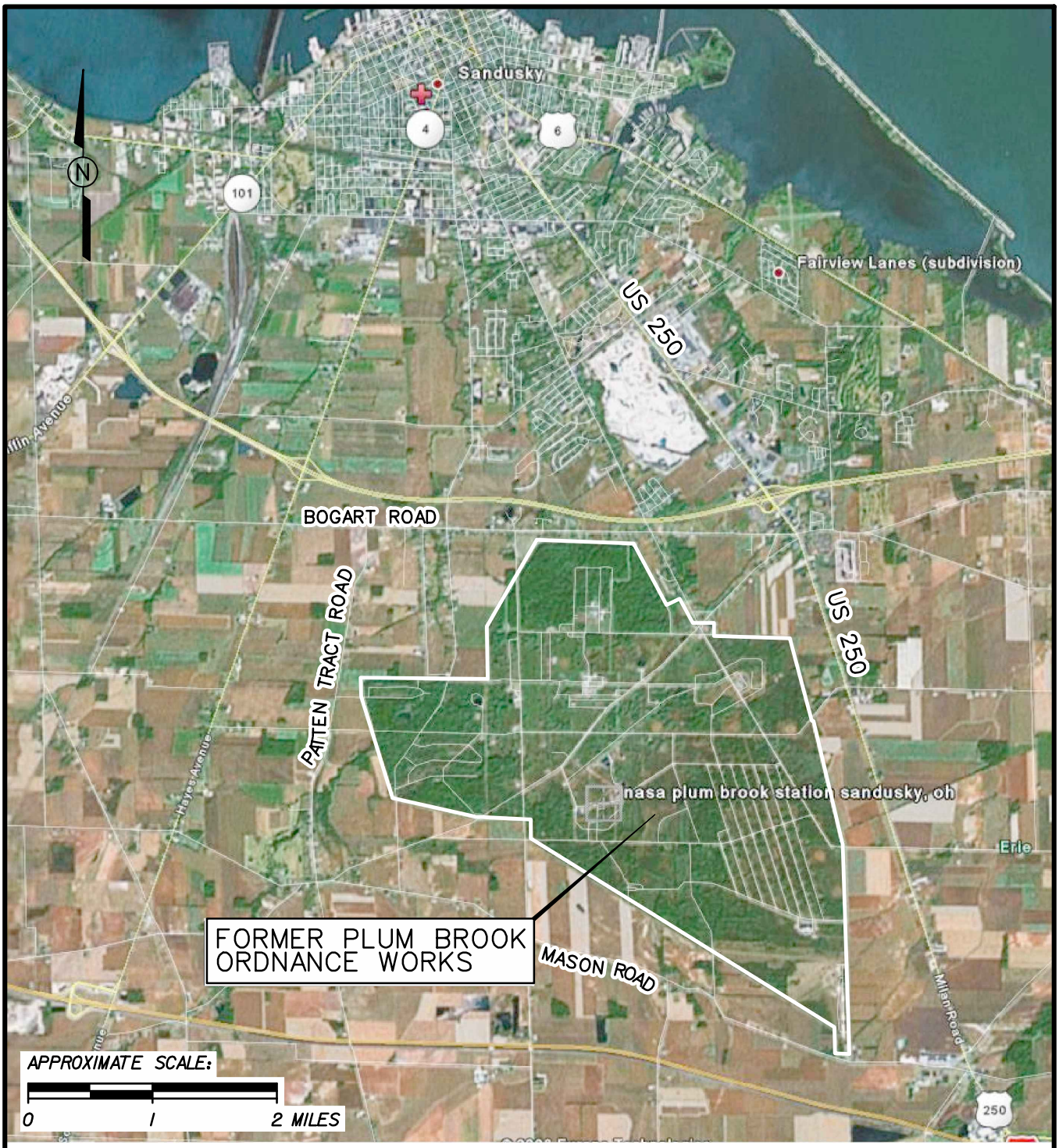

FIGURE 1-1
PBOW VICINITY MAP

ASH PIT 1 SLERA
FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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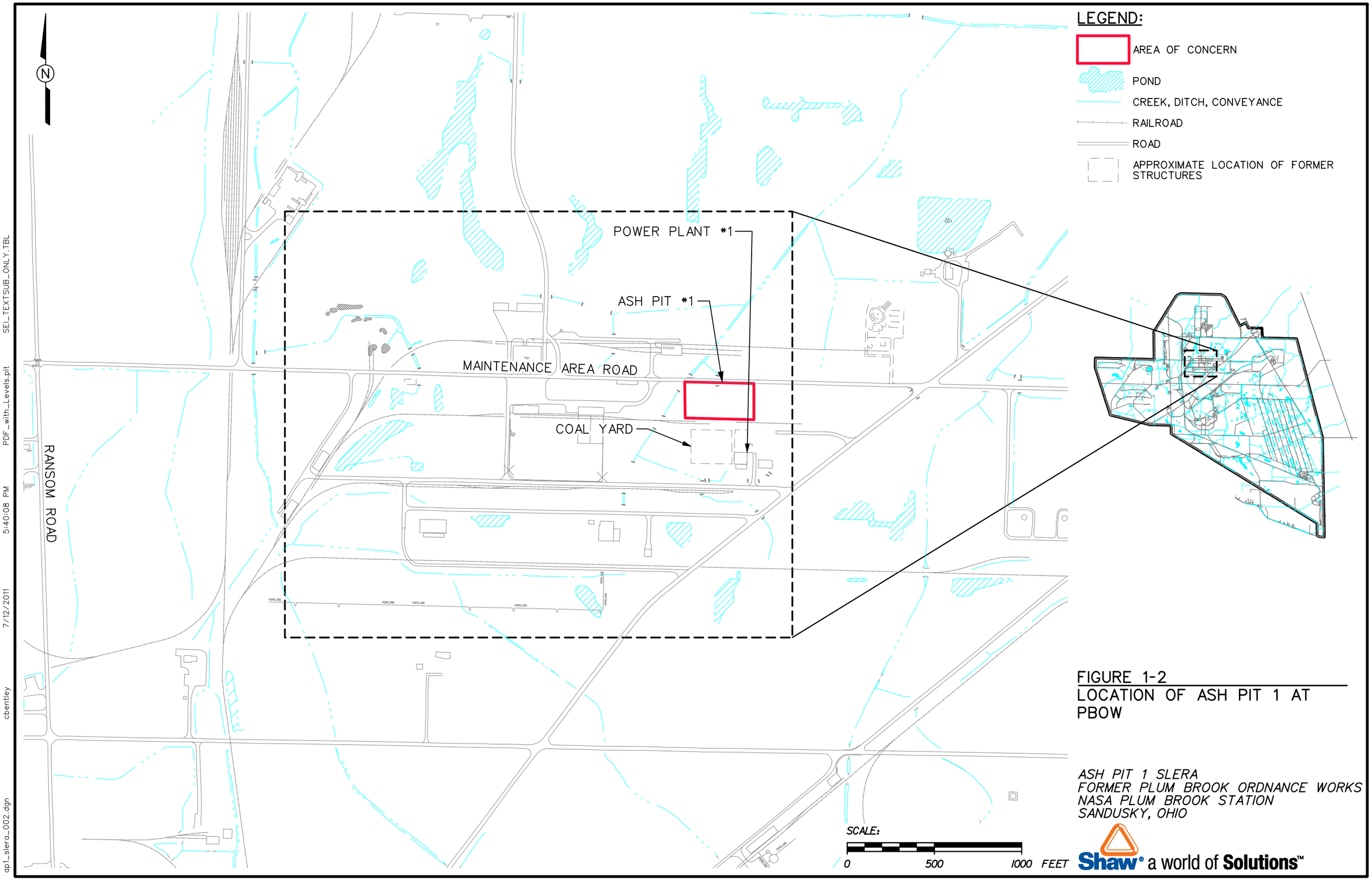

FIGURE 1-2
LOCATION OF ASH PIT 1 AT PBOW

ASH PIT 1 SLERA
FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

Shaw® a world of Solutions™

Figure 2-1

Photographic Log for Ash Pit 1

Photograph 1. Ash Pit 1. Edge of dogwood thicket (October, 2008).

Photograph 2. Ash Pit 1. Shrubs and dogwood thicket (October, 2008).

Figure 2-1

Photographic Log for Ash Pit 1

Photograph 3. Ash Pit 1. Unnamed ditch near northwest corner of site (October, 2008).

Photograph 4. Ash Pit 1. Power plant and mowed lawn south of the site (October, 2008).

Figure 2-1

Photographic Log for Ash Pit 1

Photograph 5. Ash Pit 1. Cleared vegetation from sampling activities (June, 2009).

Photograph 6. Ash Pit 1. Dogwood thicket and tire ruts (June, 2009).

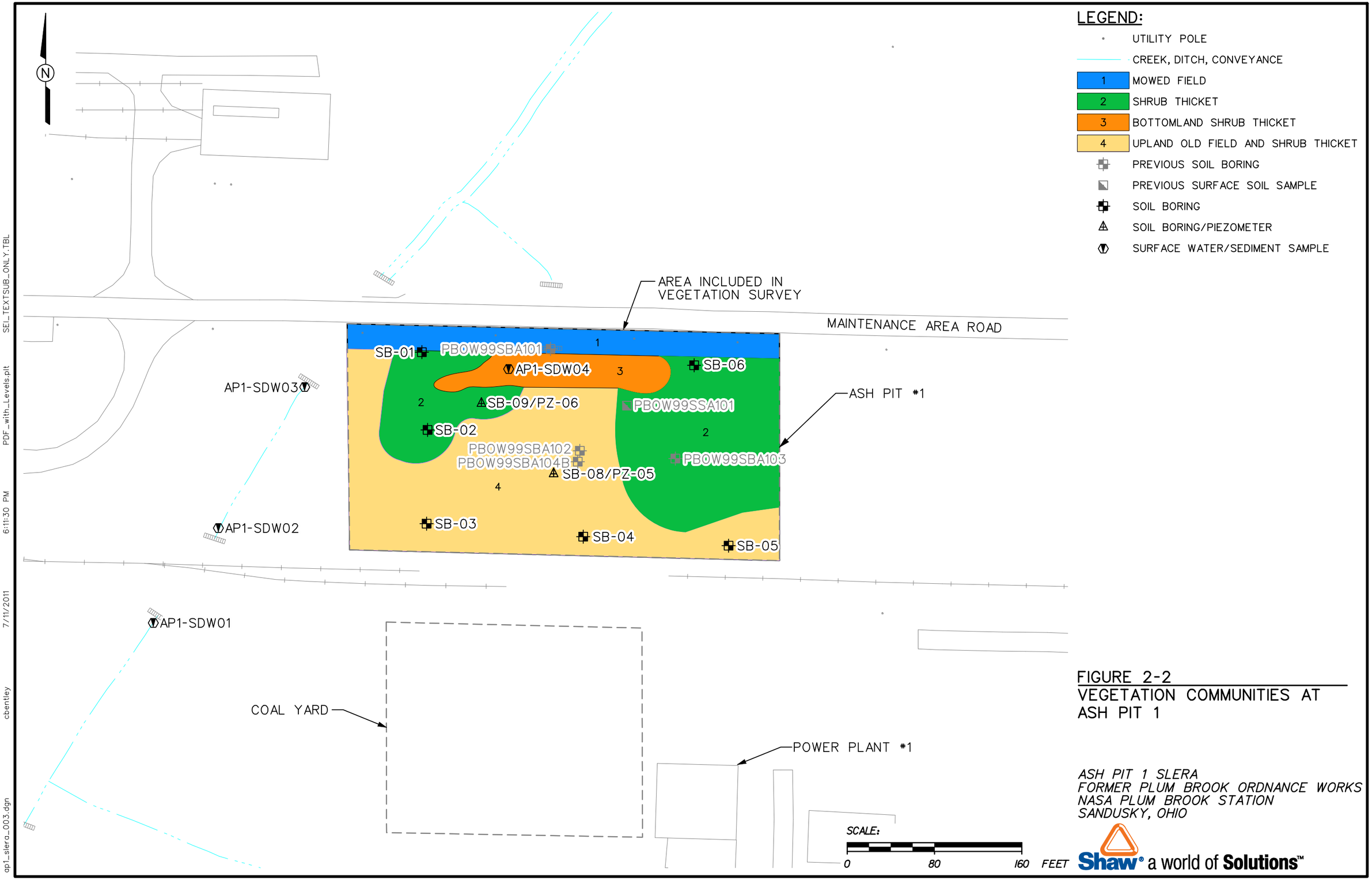

FIGURE 2-2
VEGETATION COMMUNITIES AT
ASH PIT 1

ASH PIT 1 SLERA
FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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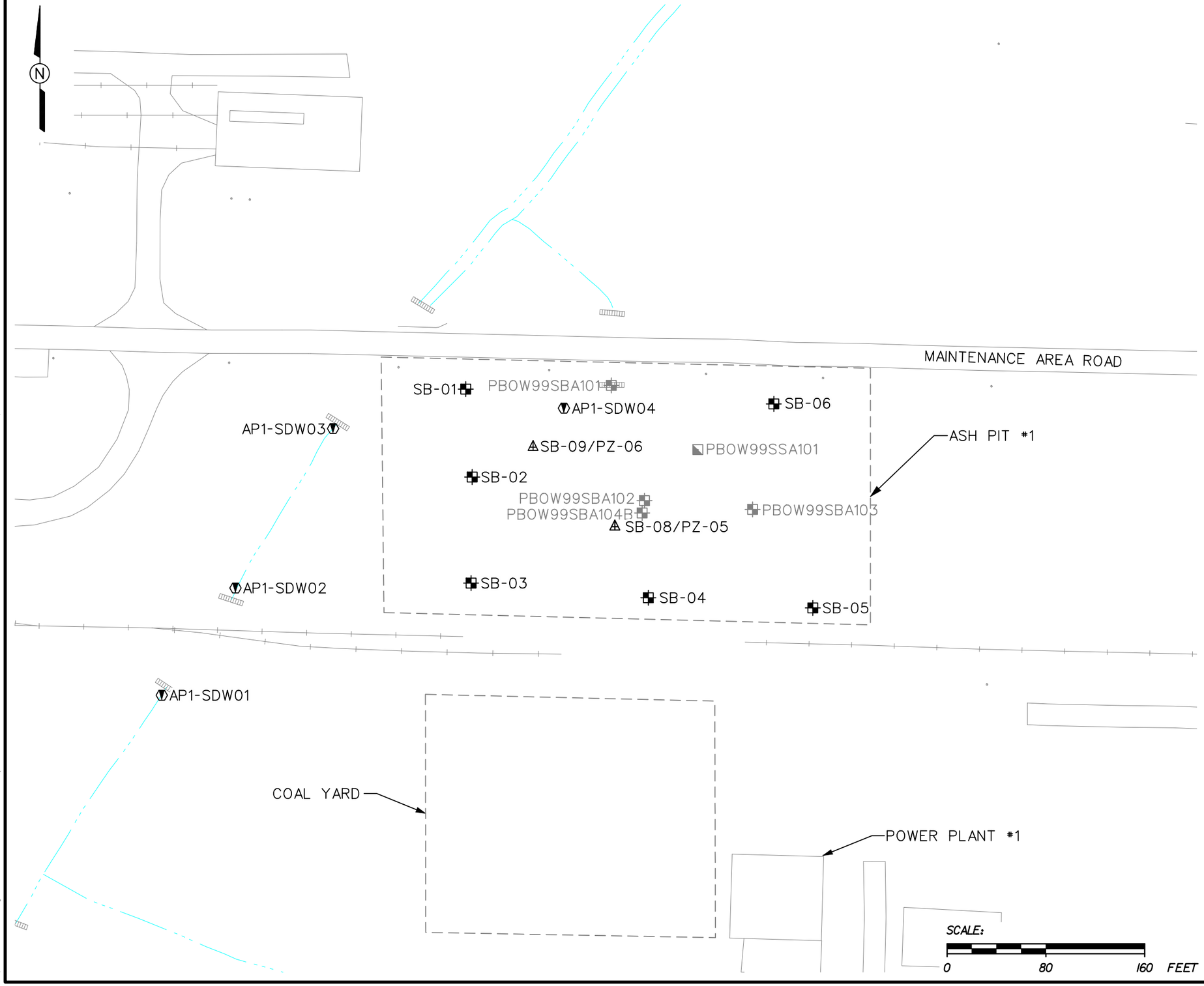

LEGEND:

- PREVIOUS SOIL BORING
- PREVIOUS SURFACE SOIL SAMPLE
- SOIL BORING
- SOIL BORING/PIEZOMETER
- SURFACE WATER/SEDIMENT SAMPLE
- UTILITY POLE
- CREEK, DITCH, CONVEYANCE

NOTES:

1. NO BORING LABELED SB-07 WAS DRILLED.

FIGURE 2-3
ASH PIT 1 SITE MAP WITH SAMPLE LOCATIONS

ASH PIT 1 SLERA
FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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Figure 2-4

Simplified Terrestrial Food Web Conceptual Site Model
Ash Pit 1, Plum Brook Ordnance Works
Sandusky, Ohio

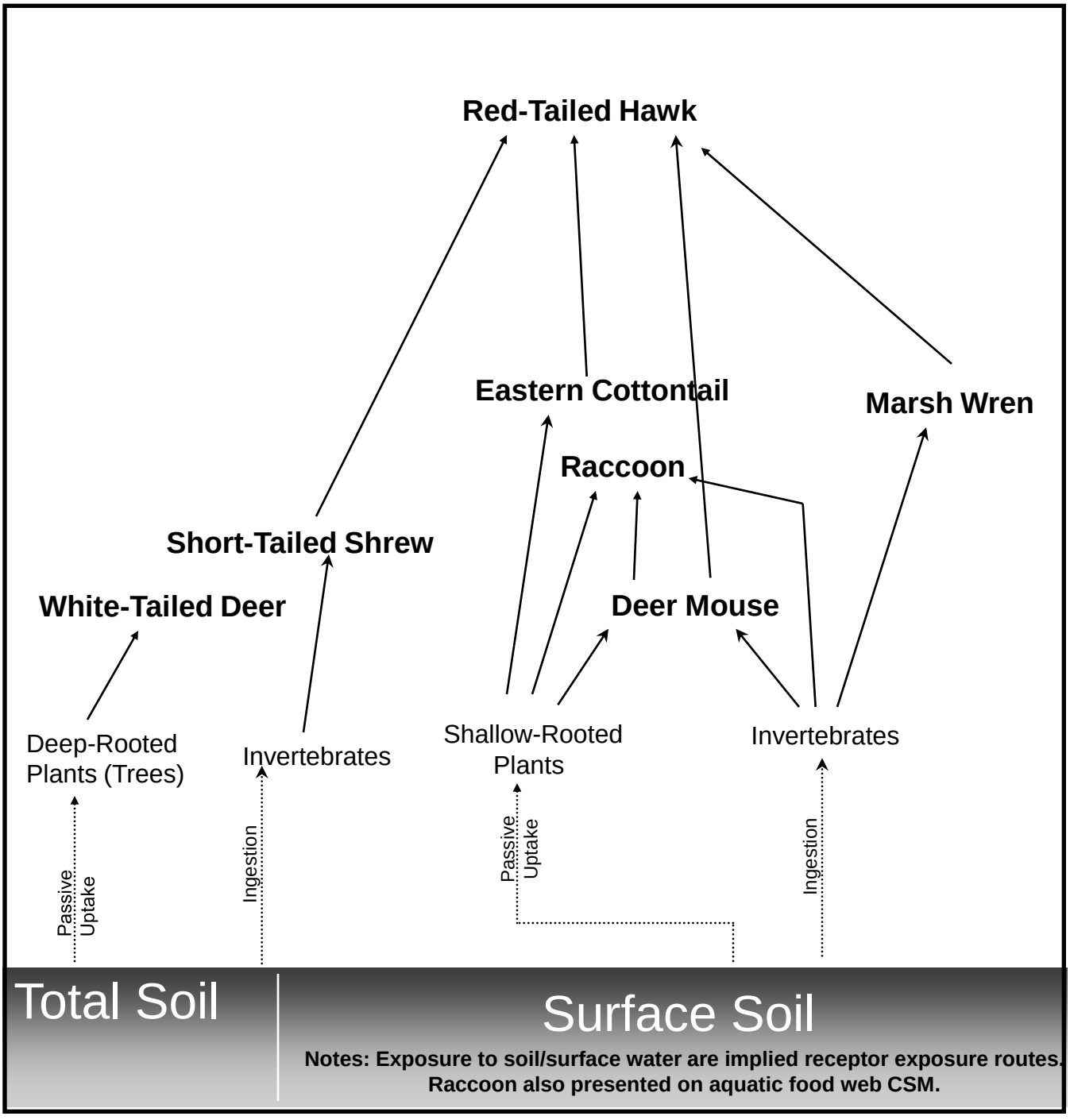
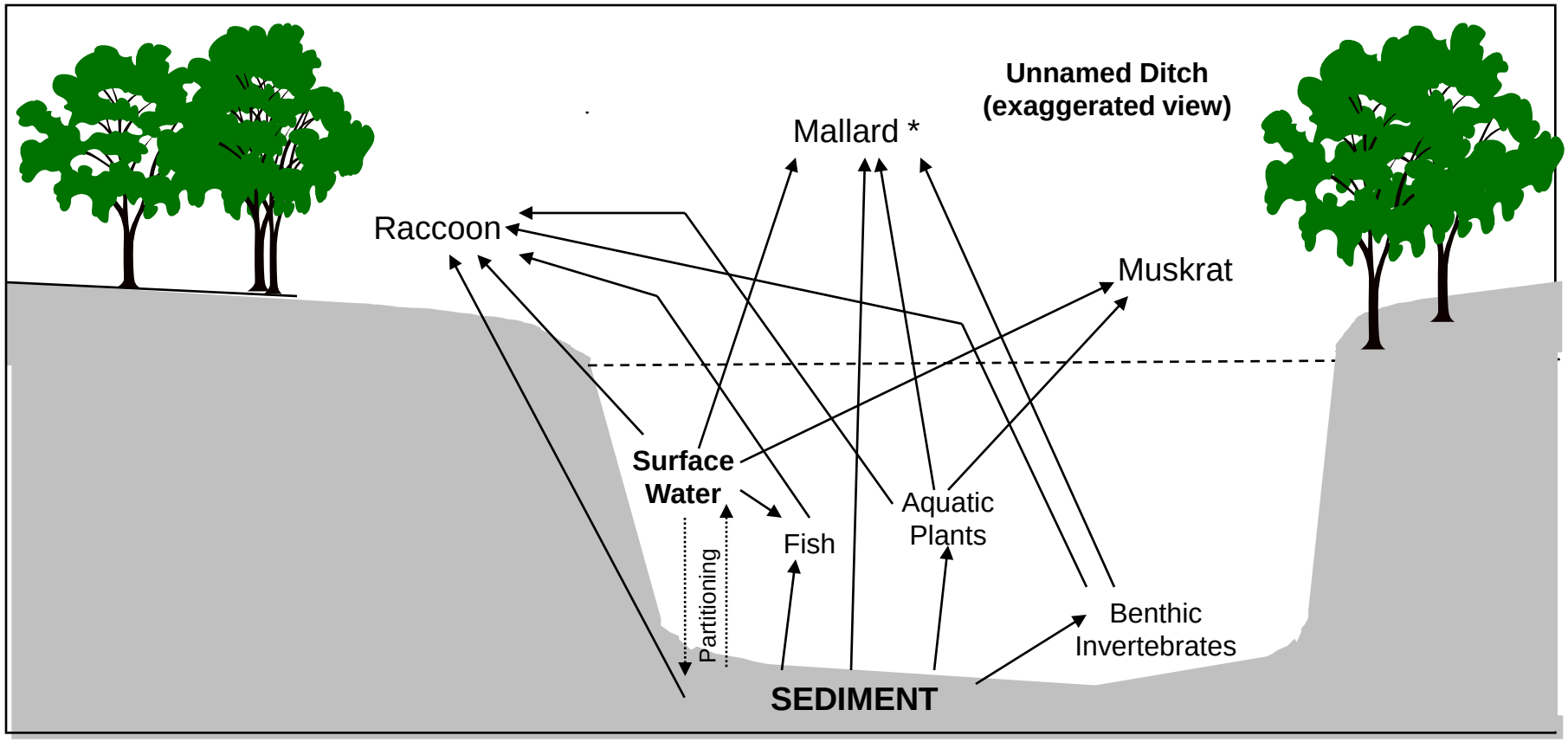


Figure 2-5

Simplified Aquatic Food Web Conceptual Site Model
Ash Pit 1, Plum Brook Ordnance Works
Sandusky, Ohio

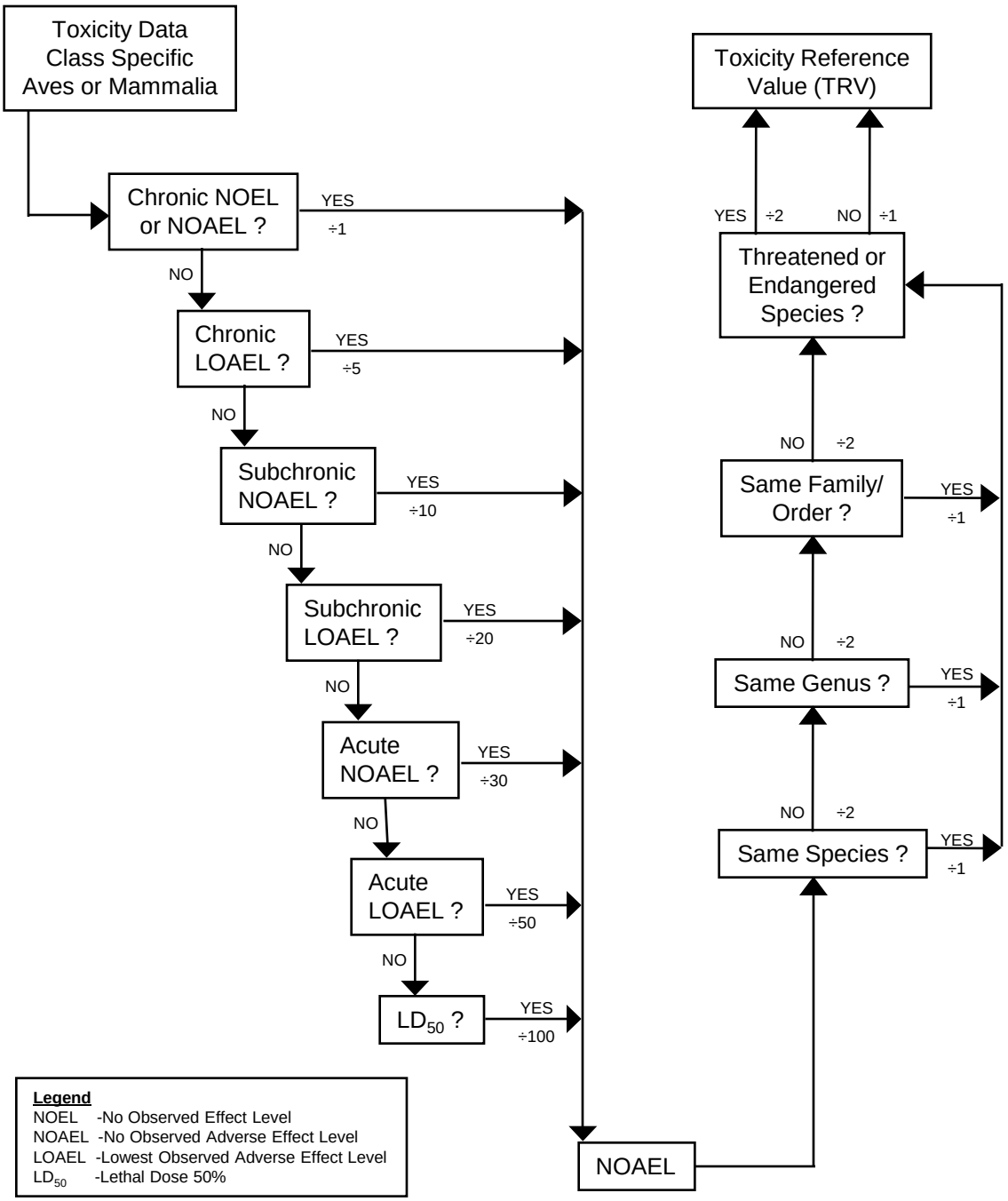


Note: The raccoon is also presented on terrestrial food web CSM.

*** = The mallard is not evaluated in the risk assessment.**

Figure 4-1

Procedural Flow Chart for Deriving Toxicity Reference Values from Class-Specific Toxicity Data Plum Brook Ordnance Works, Sandusky, Ohio



Credit: Adapted from Ford et al. (1992) in *Tri-Service Procedural Guidelines for Ecological Risk Assessments*, 1996

APPENDIX A

VASCULAR PLANT SPECIES DOCUMENTED ON SITE

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
**Acer platanoides*	Norway maple	Occasional		Disturbed woods	1
**Achillea millefolium*	Yarrow	Frequent		Dry fields, roadsides, and about buildings	1,2
**Agropyron repens*	Quack grass	Frequent		Old fields and roadsides	2
**Agrostis gigantea*	Redtop	Common		Moist fields, ditches, and roadsides	1,2
**Alliaria petiolata*	garlic mustard	Frequent		Dry to moist wood lots	1,2
**Andropogon virginicus*	broom-sedge	Occasional, frequent		Dry fields and roadsides	1,2
**Anthoxanthum odoratum*	vernal-grass	Occasional		Dry fields and openings, especially on shale	1
**Arabidopsis thaliana*	mouse-ear cress	Occasional		Road berms and about buildings	1
**Arctium minus*	Burdock	Occasional		Disturbed fields and about buildings	1
**Artemisia ludoviciana var. gnaphaloides*	white sage	Occasional		Grassy roadsides	1
**Berberis thunbergii*	Japanese barberry	Occasional, rare		Woodland borders	1
**Brassica nigra*	black mustard	Occasional		Roadsides	1
**Bromus inermis*	smooth brome	Frequent		Dry to moist fields and roadsides	1,2
**Bromus tectorum*	downy chess	Occasional		Dry openings and roadsides on shale	1
**Campsis radicans*	trumpet-vine	Occasional		Disturbed openings and roadsides	1
**Capsella bursa-pastoris*	shepherd's-purse	Occasional		Roadsides and about buildings	1,2
**Cardamine hirsuta*	bitter-cress	Occasional		Roadsides and about buildings	1
**Carduus nutans*	musk-thistle	Occasional, frequent		Dry fields and roadsides	1
**Cerastium fontanum*	mouse-ear chickweed	Frequent		Road berms and about buildings	1
**Cerastium semidecandrum*	NA	Occasional		Road berms and about buildings	1
**Chaenorrhinum minus*	dwarf snapdragon	Occasional		Road berms and about buildings	1
**Chrysanthemum leucanthemum*	ox-eye daisy	Frequent		Dry to moist fields and roadsides	1
**Cichorium intybus*	Chicory	Occasional		Roadsides	1,3
**Cirsium arvense*	Canada thistle	Common		Disturbed fields and roadsides	1,3
**Cirsium vulgare*	bull thistle	Frequent		Disturbed fields and roadsides	1,2
**Confolvulus arvensis*	field bindweed	Occasional		Disturbed fields and roadsides	1,3
**Convallaria majalis*	lilly-of-the-valley	Rare		Grassy field along Columbus Avenue	1
**Coronilla varia*	crown-vetch	Occasional, common		Grassy fields and roadsides	1,2
**Cyperus esculentus*	yellow nutgrass	Occasional, frequent		Moist, disturbed openings	1
**Dactylis glomerata*	orchard-grass	Occasional		Dry to moist fields and roadsides	1,2
**Daucus carota*	wild carrot	Frequent		Dry fields and roadsides	1
**Dianthus armeria*	Deptford pink	Occasional, rare		Dry openings and roadsides on shale	1
**Dipsacus fullonum*	common teasel	Frequent		Dry, disturbed openings and roadsides	1
**Draba verna*	early whitlow-wort	Occasional		Dry roadsides and about buildings	1
**Eleagnus umbellata*	autumn-olive	Occasional		Roadsides and woodland borders	1,2
**Elytrigia repens*	quack-grass	Frequent		Dry fields and roadsides	1
**Festuca elatior*	tall fescue	Occasional		Roadsides and grassy fields	1
**Festuca obtusa*	Fescue	Common		Old fields	2
**Glecoma hederacea*	ground-ivy	Frequent		Moist openings, roadsides, and about buildings	1,3
**Hieracium piloselloides*	king-devil	Frequent		Dry openings on shale, fields	1
**Hypericum perforatum*	dotted St. John's-wort	Frequent		Disturbed fields and roadsides	1
**Inula helenium*	Elecampane	Rare		Moist roadside along Taft Road	1
**Lamium purpureum*	dead-nettle	Frequent		Disturbed fields, roadsides, and about buildings	1
**Lepidium campestre*	field-cress	Occasional		Roadsides and about buildings	1
**Linaria vulgaris*	butter-and-eggs	Occasional		Roadsides and about buildings	1
**Lonicera maackii*	Amur honeysuckle	Rare		Roadsides and thickets along Columbus Avenue near Scheid Ditch	1
**Lonicera morrowii*	Asiatic honeysuckle	Frequent		Thickets, borders, and roadsides	1
**Lonicera tatarica*	Tatarian honeysuckle	Frequent, common		Thickets, borders, and roadsides	1,2
**Lotus corniculatus*	bird's-foot trefoil	Occasional		Grassy fields and road berms	1
**Matricaria matricarioides*	pineapple-weed	Occasional		Roadsides and about buildings	1
**Medicago lupulina*	Black medic	Occasional		Old fields and disturbed areas	2
**Melilotus alba*	white sweet-clover	Occasional, frequent		Disturbed fields and roadsides	1,3
**Melilotus officinalis*	yellow sweet-clover	Occasional		Disturbed fields and roadsides	1,3
**Najas minor*	Eurasian naiad	Frequent		Artificial ponds	1
**Nepeta cataria*	catnip	Occasional, frequent		Roadsides and weedy openings	1,2
**Oxalis europea*	Sorrel	Common		Old fields and disturbed areas	3
**Pastinaca sativa*	wild parsnip	Occasional		Roadsides	1
**Phleum pratense*	timothy	Frequent		Disturbed fields and roadsides	1
**Plantago lanceolata*	English plantain	Frequent		Disturbed openings and about buildings	1,2

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
**Plantago major*	broad-leaved plantain	Frequent		Road berms and about buildings (1) disturbed areas and old fields (2a)	1
**Poa annua*	early bluegrass	Common		Road berms and about buildings	1
**Poa compressa*	Canada bluegrass	Frequent		Dry openings, especially on shale, and roadsides	1,2
**Polygonum caespitosum*	NA	Rare		Moist, shaded ground in bunker area	1
**Polygonum hydropiper*	water-pepper	Occasional		Margins of ponds	1,3
**Rosa multiflora*	multiflora rose	Occasional		Disturbed openings, borders, and thickets	1
**Rumex acetosella*	red sorrel	Occasional		Dry openings over shale	1
**Rumex crispus*	curly dock	Occasional		Roadsides and about buildings	1,2
**Saponaria officinalis*	soapwort	Frequent, occasional		Dry fields, roadsides, and about buildings	1
**Setaria faberi*	nodding foxtail-grass	Occasional, common		Grassy roadsides in the bunker area	1,3
**Setaria viridis*	green foxtail-grass	Frequent, common		Dry roadsides and about buildings	1
**Solanum caroliniense*	horse-nettle	Occasional, common		Dry openings and roadsides	1,2
**Solanum dulcamara*	bittersweet-nightshade	Occasional		Roadsides, ditches, thickets, and about buildings	1
**Stellaria media*	chickweed	Common		Road berms and about buildings	1
**Taraxacum officinalis*	dandelion	Frequent, occasional		Roadsides and about buildings	1,2
**Tragopogon pratensis*	Yellow goatsbeard	Rare		Old fields	3
**Trifolium pratense*	red clover	Occasional		Grassy fields and roadsides	1,2
**Trifolium repens*	common white clover	Common		Grassy roadsides and about buildings	1,3
**Verbascum blattaria*	moth-mullein	Occasional, rare		Disturbed fields and roadsides	1,3
**Verbascum thapsus*	common mullein	Frequent, occasional		Disturbed fields	1
**Veronica officinalis*	common speedwell	Occasional		Dry openings on shale	1
**Veronica serpyllifolia*	thyme-leaved speedwell	Occasional		Roadsides and about buildings	1
Acalypha rhomboidea	Three-seeded mercury	NA		NA	3
Acer negundo	box-elder maple	Frequent		Stream banks, ditches, and moist woods	1,2
Acer rubrum	red maple	Common		Dry to moist woods	1
Acer saccharinum	Silver maple	Rare		Dry to moist woods	3
Acer saccharum	Sugar maple	Occasional		Dry to moist woods	3
Acorus calamus	Sweet flag	Rare		Wet ditches	3
Agalinis purpurea	purple false-foxglove	Frequent		Moist openings and ditches	1
Agrimonia parviflora	southern agrimony	Frequent		Moist fields and ditches	1,2
Agrostis hyemalis	Ticklegrass	Occasional		Dry, grassy fields and shaley openings	1
Agrostis perennans	autumn bent-grass	Frequent		Dry woods and borders on shale	1
Ailanthus altissima	tree of heaven	NA		NA	3
Alisma plantago-aquatica	Water plantain	NA		NA	3
Alisma subcordatum	water-plantain	Occasional		Ponds and ditches	1,3
Allium canadense	Field garlic	NA		NA	3
Allium canadense	Wild garlic	Occasional		Successional woods	3
Ambrosia artemisiifolia	common ragweed	Frequent, occasional		Dry fields and roadsides	1,2
Ambrosia trifida	giant ragweed	Occasional		Dry fields and roadsides	1
Andropogon gerardii	big bluestem	Frequent, 0ccasional		Dry to moist fields and roadsides	1,3
Anemone virginiana	Thimbleweed	NA		NA	2
Antennaria parlinii	pussy-toes	Occasional		Dry fields and openings, especially on shale	1
Apios americana	Groundnut	NA		NA	2
Apocynum cannabinum	Dogbane	Frequent		Dry to moist fields and roadsides	1,2
Arctium minus	lesser burdock	NA		NA	3
Arenaria lateriflora	grove sandwort	Rare	T	Woods along Ransom Brook north of reactor	1
Arisaema triphyllum	Jack-in-the-pulpit	Rare		Moist to dry woods	3
Aristida dichotoma	Churchmouse grass	Occasional		Dry fields and openings	1
Aristida longespica	slimspike triple-awned grass	Common		Dry fields and openings	1
Aristida oligantha	prairie triple-awned grass	Occasional		Dry openings and roadsides	1
Asclepias hirtella	prairie milkweed	Common		Dry to moist openings	1
Asclepias incarnata	Swamp milkweed	Occasional		Wet ditches	3
Asclepias sullivantii	Sullivant's milkweed	Rare		Moist field along Patrol Road south of Scheid Road	1
Asclepias syriaca	common milkweed	Frequent		Dry to moist fields and roadsides	1,2
Asclepias tuberosa	butterfly-weed	Occasional		Dry openings and roadsides	1
Asparagus officinalis	asparagus	NA		NA	3
Aster ericoides	white heath aster	Rare, frequent		Grassy strip along Patrol Road southeast of Taft Road	1
Aster laevis	smooth aster	Rare		White oak grove on Taft Road	1
Aster lateriflorus	calico aster	Common, frequent		Moist woods and thickets	1,2
Aster novae-angliae	New England aster	Occasional		Dry fields and roadsides	1,2

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Aster pilosus	common white aster	Common		Dry fields, roadsides, and about buildings	1
Aster sagittifolius	Arrow-leaved aster	Frequent		Woods and fields	3
Aster umbellatus	flat-top aster	Frequent, rare		Dry to moist fields and roadsides	1
Baptisia lactea	prairie false indigo	Occasional	P	Dry openings in bunker area	1
Baptisia tinctoria	yellow false indigo	Occasional		Dry openings in bunker area	1
Berberis thunbergii	Barberry	NA		NA	3
Bidens coronata	northern tickseed-sunflower	Common		Moist fields and ditches	1
Bidens frondosa	Beggar ticks	Rare		Ditches	2
Boehmeria cylindrica	false nettle	Occasional		Ponds and ditches	1,2
Botrychium sp.	Grape fern	NA		NA	3
Botrychium virginianum	Rattlesnake fern	Occasional		Successional woods	3
Brassica nigra	mustard	NA		NA	3
Bromus pubescens	Brome	Occasional		Dry fields	3
Cacalia atriplicifolia	pale Indian-plantain	Occasional		Dry fields and roadsides; woods	1
Calamagrostis canadensis	blue-joint	Occasional		Moist fields and ditches	1
Callitriche heterophylla	water-starwort	Occasional		Pond margins and seasonally-moist depressions	1
Calystegia sepium	Hedge bindweed	Occasional		Fields	3
Carex aggregata	Glomerate sedge	NA		NA	3
Carex aggregata	sedge	Occasional		Moist woods	2
Carex alata	broad-winged sedge	Rare	P	Grassy field along Patrol Road south of Scheid Road, also in grassy strip between Patrol Road and artificial pond southeast of Taft Road	1
Carex albursina	White bear sedge	NA		NA	2
Carex amphibola	Eastern narrowleaf sedge	Occasional		Thickets and woods borders	2
Carex annectens var. annectens	NA	Occasional		Moist, grassy fields	1
Carex annectens var. xanthocarpa	yellow-fruited sedge	Occasional		Moist, grassy fields	1
Carex blanda	eastern woodland sedge	Frequent		Moist woods	1,2
Carex bromoides	Brome-like sedge	NA		NA	3
Carex cephaloidea	thin-leaf sedge	Rare	E	Woods border along Pentolite Road west of reactor	1
Carex complanata var. hirsutella	NA	Frequent		Dry fields and woods borders	1
Carex conoidea	field sedge	Rare	T	Grassy depression along Taft Road south of North Magazine Road	1
Carex cristatella	NA	Occasional		Moist fields and ditches	1
Carex festucacea	fescue sedge	Occasional		Moist, grassy fields	1
Carex frankii	Frank's sedge	NA		NA	2
Carex gracillima	NA	Occasional		Moist woods	1
Carex granularis	meadow sedge	Common		Moist, grassy fields and ditches	2
Carex hirtifolia	NA	Rare		Disturbed oak woods along angling road	1
Carex hystericina	Bottlebrush sedge	Rare		Moist depression along Taft Road	1
Carex pensylvanica	Pennsylvania sedge	Common		Dry woods	1
Carex radiata	Eastern star sedge	NA		NA	3
Carex rosea	NA	Frequent		Dry to moist woods	1
Carex scoparia	NA	Frequent		Moist, grassy fields	1
Carex sp.	sedges	NA		NA	3
Carex sparganoides	Bur-reed sedge	NA		NA	2
Carex stipata	NA	Frequent		Moist fields and ditches	1
Carex stricta	tussock sedge	Occasional		Moist fields and ditches	1
Carex swanii	Swan's sedge	Occasional		Dry, grassy fields	1
Carex tribuloides	Blunt broom sedge	Occasional		Moist, grassy fields and ditches	1
Carex umbellata	NA	Occasional		Well-drained, grassy fields on sandy soil	1
Carex vulpinoidea	fox sedge	Common		Moist fields, ditches, and about ponds	1
Carya cordiformis	Bitternut hickory	NA		NA	3
Carya ovata	shagbark hickory	Rare		Sandy soil along fence at far southeast boundary	1,3
Catalpa speciosa	Catalpa	NA		NA	3
Celastrus orbiculatus	Bittersweet	Occasional		Thickets and woods borders	3
Celtis occidentalis	Hackberry	Occasional		dry to moist woods and borders	1
Cephalanthus occidentalis	Buttonbush	Occasional		Moist depressions and ditches	1,3
Cerastium arvense	field chickweed	Rare		White oak grove along Taft Road	1
Chamaecrista fasciculata	partridge-pea	Occasional		Dry openings on shale	1
Chenopodium album	lamb's quarters	NA			2

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Cinna arundinacea	Wood reed grass	Occasional		Woods	3
Circaea lutetiana	Southern broad-leaved enchanter's nightshade	Frequent		Woods	2
Cirsium arvense	creeping thistle	NA		NA	2
Cirsium discolor	prairie thistle	Frequent, occasional		Grassy fields and roadsides	1
Clematis virginiana	Virgin's bower	NA		NA	2
Clinopodium vulgaris	wild basil	Occasional		Dry roadsides and openings	1
Conyza canadensis	Horseweed	Frequent		Dry fields and roadsides	1,3
Cornus amomum	swamp dogwood	Frequent, occasional		Moist fields and thickets	1
Cornus drummondii	rough-leaved dogwood	Frequent		Moist borders, thickets, and roadsides	1.2
Cornus florida	flowering dogwood	Occasional		Woodland borders and roadsides	1
Cornus racemosa	gray dogwood	Frequent		Dry fields and roadsides	1,2
Crataegus mollis	downy hawthorn	Frequent		Thickets and woodland borders	1
Crataegus punctata	dotted hawthorn	Frequent		Thickets and woodland borders	1
Cryptotaenia canadensis	honewort	Occasional, rare		Dry to moist woods	1
Cuscuta gronovii	dodder	Frequent		Moist fields and ditches	1
Cyperus esculentus	Chufa	NA		NA	3
Cyperus flavescens	Umbrella sedge	occasional		Old fields and waste places	3
Cyperus strigosus	umbrella-sedge	Frequent		Moist openings, ponds, and ditches	1,3
Danthonia spicata	poverty-grass	Occasional		Dry openings over shale	1
Datura stramonium	jimson-weed	Occasional		Disturbed openings and roadsides	1
Daucus carota	Queen Anne's lace	NA		NA	2
Desmodium canescens	Tick trefoil	Occasional		Fields	3
Dichanthelium dichotomum	cypress panic grass	NA		NA	3
Digitaria cognatum (Leptoloma cognatum)	NA	Occasional		Old fields	3
Digitaria ischaemum	smooth crabgrass	NA		NA	3
Diodia teres	buttonweed	Occasional		Dry openings over shale	1
Dioscorea villosa	Yam root	NA		NA	3
Dipsacus sylvestris	teasel	NA			2
Dryopteris carthusiana	spinulose woodfern	Frequent		Moist woods and shaded borders	1
Eleocharis acicularis	needle spikerush	Frequent		Margins of artificial pond	1
Eleocharis erythropoda	red-footed spikerush	Occasional		Moist openings and ditches	1
Eleocharis obtusa	NA	Common		Moist openings and ditches	1
Eleocharis smallii	Small's spikerush	Frequent		Margins of artificial pond	1
Eleocharis sp.	Spike rush				2
Eleocharis tenuis	NA	Frequent		Moist openings and ditches	1
Elymus sp.	Rye grass	NA		NA	3
Elymus virginica	Wild rye	Occasional		Moist to dry woods	3
Epilobium coloratum	purple-leaved willow herb	NA		NA	2
Equisetum arvense	horsetail	Frequent		Moist openings, roadsides, and ditches	1,2
Equisetum hyemale	scouring-rush	Occasional		Moist roadsides and ditches	1,2
Eragrostis frankii	NA	Occasional		Moist openings and ditches	1
Eragrostis spectabilis	showy lovegrass	Occasional		Dry to moist fields	1
Erechtites hieracifolia	Pilewort	Common		Disturbed woods, borders, and roadsides	1
Erigeron anuus	Fleabane	NA		NA	2
Erigeron philadelphicus	Philadelphia fleabane	Frequent, occasional		Roadsides and borders	1
Erigeron strigosus	smooth fleabane	Occasional		Dry openings and roadsides	1
Eupatorium perfoliatum	Boneset	Occasional, frequent		Moist fields, ponds, and ditches	1
Eupatorium purpureum	purple joe-pye-weed	Occasional		Borders of moist woods, fields	1,3
Eupatorium rugosum	White snake root	Common		Woods and fields	2
Eupatorium sessilifolium	Upland boneset				2
Euphorbia corollata	Flowering spurge	Occasional		Dry fields	1
Euphorbia maculata	Prostrate spurge	Occasional		Dry openings, road berms, and about buildings	1,2
Euphorbia supina	Milk purslane	NA		NA	3
Euthamia graminifolia	grass-leaved goldenrod	Common		Dry to moist fields and roadsides	1,2
Fragaria virginiana	wild strawberry	Frequent		Dry to moist fields and roadsides	1
Fraxinus americana	white ash	Frequent		Dry to moist woods and borders	1
Fraxinus pensylvanica	green ash	Frequent, common		Moist woods and stream banks	1,2
Galine aparine	Cleavers	Occasional		Moist woods and borders	1,2
Galium asperellum	Rough bedstraw	NA		NA	2
Galium circaezans	wild licorice	Rare		Dry woods	1

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Galium tinctorium	Southern bedstraw	Rare		Moist depression along Taft Road	1
Gentianopsis crinita	Fringed gentian	Occasional	P	Old fields along ditch banks, small groups and scattered individuals in northeast portion of TNT area A	3
Geranium maculatum	Wild geranium	Occasional		Successional woods	3
Gerardia tenuifolia	Slender gerardia	Frequent		Disturbed fields	3
Geum laciniatum	Rough avens				2
Geum vernum	spring avens	Occasional		Moist woods and borders	1
Geum virginianum	white avens	Occasional		Woods borders and roadsides	1
Gleditsia triacanthos	honey-locust	Occasional, rare		Dry to moist woods and borders	1
Glyceria striata	manna-grass	Occasional		Moist woods and about ponds	1,3
Gnaphalium obtusifolium	Cudweed	Frequent, occasional		Dry openings on shale, fields	1,2
Gratiola virginiana	round-fruited hedge-hyssop	Rare	P	ca 20 plants; moist, shaded ground by pond west of Snake Road	1
Hackelia virginiana	Virginia stickseed	Rare		Woods	2
Hedyotis caerula	Bluets	Occasional		Dry openings and roadsides on shale	1
Helenium autumnale	Sneezeweed	Occasional		Disturbed fields	3
Helenium flexuosum	Southern sneezeweed	Occasional		Moist, open ground and ditches	1
Helianthus mollis	ashy sunflower	Rare	T	ca 200 plants in grassy field south and southwest of junction of Fox and Patrol Roads; the exact number of individuals in this population is uncertain since excessive browsing by deer has reduced the plants to leafy tufts.	1
Helianthus tuberosus	Jerusalem artichoke	Occasional		Old fields	3
Hemerocallus fulva	Daylily	NA		NA	3
Hesperis matronalis	Dame's rocket	NA		NA	3
Hibiscus moscheutos	rose-mallow	Rare		Moist swale along Ransom Road	1
Hypericum gentianoides	orange-grass	Frequent		Dry openings	1
Hypericum gymnanthum	least St. John's-wort	Rare	E	ca 50 plants; moist, open ground along Patrol Road south of Fox Road	1
Hypericum majus	tall St. John's-wort	Rare	P	Moist, shaded ground by pond west of Snake Road	1
Hypericum mutilum	little St. John's-wort	Frequent		Moist openings, ponds, and ditches	1
Hypericum perforatum	common St. John's wort	NA			3
Hypericum punctatum	St. Johns wort	Rare		Fields	3
Hypoxis hirsuta	yellow-eyed-grass	Occasional		Grassy fields	1
Hystrix patula	Bottlebrush grass	Occasional		Woods	3
Impatiens capensis	Jewelweed	NA		NA	3
Ipomoea pandurata	wild sweet-potato	Occasional		Dry openings over shale	1
Ipomoea purpurea	common morning glory	NA		NA	3
Iris versicolor	Northern blue flag	Occasional		Moist woods and ditches	1
Isanthus brachiatus	false pennyroyal	Rare		Moist opening on limestone, west of Snake Road and south of North Magazine Road	1
Juglans nigra	black walnut	Rare		A few young trees at edge of grassy field southwest of junction of Fox and Patrol Roads, woods (2b)	1
Juncus acuminatus	NA	Common		Moist openings and ditches	1
Juncus biflorus	NA	Occasional		Moist openings and ditches	1
Juncus brachycarpus	NA	Occasional		Moist openings	1
Juncus canadensis	Canada rush	Frequent		Moist openings	1
Juncus dudleyi	Dudley's rush	Frequent		Moist openings	1
Juncus effusus	Common rush	Frequent		Moist openings, ponds, and ditches	1
Juncus marginatus	NA	Occasional		Moist openings	1
Juncus nodosus	rush	Occasional		Old fields and ditches	3
Juncus tenuis	path rush	Frequent, occasional		Dry openings, road berms, and about buildings	1
Juncus torreyi	Torrey's rush	Occasional		Moist fields	2
Juniperus virginiana	Red cedar	NA		NA	3
Laportea Canadensis	Wood nettle	NA		NA	3
*Lathyrus latifolius**	Everlasting pea	Occasional		Old fields	3
Leersia oryzoides	rice cutgrass	Occasional		Moist fields and ditches	1,2
Leersia virginica	White grass	NA		NA	2
Lemna minor	Lesser duckweed	Occasional		Ponds and standing water	1,2
Lepidium campestre	field peppergrass	NA		NA	3
Lepidium virginicum	poor man's pepper	Frequent		Roadsides, disturbed openings, and about buildings	1

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Leptoloma cognatum	fall witch grass	NA		NA	3
Lespedeza capitata	bush-clover	Occasional		Dry fields	1
Leucospora multifida	NA	Rare		Moist opening on limestone, west of Snake Road and south of North Magazine Road	1
Liatris scariosa var. novae-angliae	northern blazing-star	Rare		Dry ground along Patrol Road at Olemacher Ditch	1
Liatris spicata	spiked blazing-star	Occasional		Moist openings	1
Lindernia dubia	false pimpernel	Occasional		Moist openings, ditches, and pond margins	1
Linum medium	wild flax	Frequent		Dry to moist openings	1
Linum virginianum	Virginia flax	Rare		About pond in northern bunker area	1
Lobelia siphilitica	Great lobelia	Frequent		Moist fields	3
Lonicera japonica	Japanese honeysuckle	Occasional		Fields and disturbed areas	3
Ludwigia alternifolia	rattlebox	Occasional		Ponds and ditches	1
Ludwigia palustris	water-purslane	Frequent, occasional		Ponds and ditches	1
Ludwigia polycarpa	NA	Rare		Moist, shaded ground by pond on Snake Road	1
Lycopus americana	American bugleweed				2
Lycopus americanus	American water-horehound	Frequent		Ponds and ditches	1,3
Lycopus uniflorus	northern water-horehound	Frequent		Moist woods and shaded borders	1
Lycopus virginicus	Virginia bugleweed				2
Lysimachia terrestris	swamp loosestrife	Occasional		Moist openings	1,3
Lythrum alatum	prairie loosestrife	Occasional		Moist openings	1
Lythrum salicaria	Purple loosestrife				2
Maclura pomifera	osage-orange	Occasional		Disturbed woods and borders	1,3
Melilotus sp.	Sweet clover				2
Mentha piperita	peppermint	NA		NA	3
Mentha spicata	Spearmint	Occasional		Moist fields	3
Mimulus ringens	monkey-flower	Occasional, rare		Moist openings and ditches	1
Monarda fistulosa	bergamont	Occasional		Grassy fields	1
Monarda sp.	bee balm	NA		NA	2
Morus alba	Mulberry	Occasional		Fields and thickets	2
Muhlenbergia frondosa	muhly grass	Frequent		Moist fields and ditches	1
Myrica pensylvanica	Bayberry	Rare	E	One individual in old field in northern portion of area	3
Najas flexilis	northern naiad	Occasional		Artificial ponds	1
Nyssa sylvatica	blackgum	Occasional		Thickets and woods borders	1
Oenothera biennis	evening-primrose	Frequent		Dry fields, roadsides, and about buildings	1
Oenothera tetragona	northern sundrops	Frequent		Moist, grassy fields	1
Onoclea sensibilis	Sensitive fern	frequent		Wet areas	2
Osmunda cinnamomea	cinnamon fern	Rare		Depressions in moist woods along angling road	1
Osmunda regalis	royal fern	Occasional		Depressions in moist woods	1
Oxalis stricta	sorrel	NA		NA	3
Oxalis violacea	purple wood-sorrel	Occasional		Drier oak woods and borders on shale	1
Panicum capillare	witchgrass	NA		NA	3
Panicum clandestinum	deer tongue grass	NA		NA	2
Panicum dichotomiflorum	Panic grass	Frequent		Fields	3
Panicum flexile	wiry witch-grass	Rare		Moist opening on limestone, west of Snake Road and south of North Magazine Road	1
Panicum lanuginosum	hairy panic-grass	common		Dry, grassy fields and roadsides	1
Panicum oligosanthes	sand panic-grass	Occasional		Dry, grassy fields	1
Panicum rigidulum	stiff panic-grass	Frequent		Moist openings and ditches	1
Panicum virgatum	switch-grass	Occasional		Dry fields	1,2
Parietaria pensylvanica	pellitory	Occasional		Dry, disturbed wood lots and borders	1
Paronychia fastigata	forked chickweed	Occasional		Dry woods and borders on shale	1
Parthenocissus quinquefolia	Virginia-creeper	Occasional		Dry to moist woods borders and thickets	1,2
Parthenocissus vitacea	grape-woodbine	Rare		Dry opening north of Center Magazine Road	1
Penstemon digitalis	tall white beard-tongue	Frequent		Grassy fields and roadsides	1,2
Phalaris arundinacea	reed canary-grass	Common		Moist fields and ditches	1,2
Phragmites australis	reed-grass	Occasional, rare		Moist openings and ditches	1
Phryma leptostachya	lopseed	Rare		Edge of woods along Scheid Ditch near Columbus Avenue; successional woods	1
Phytolacca americana	pokeberry	Occasional, rare		Moist woods and borders	1,2
Pilea pumila	clearweed	NA		NA	3
Plantago major	common plantain	NA		NA	2

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Platanthera lacera	ragged fringe-orchid	Rare		Ditch along south Patrol Road	1
Platanus occidentalis	sycamore	Occasional, frequent		Moist woods and stream banks, fields and waste areas	1,3
Poa pratensis	Kentucky bluegrass	NA		NA	2
Podophyllum peltatum	may-apple	Occasional		Dry to moist woods	1,2
Polygala sanguinea	blood milkwort	Frequent		Moist openings	1
Polygala verticillata	whorled milkwort	Occasional		Moist openings	1
Polygonum hydropiper	Smartweed	NA		NA	3
Polygonum hydropiperoides	false water-pepper	Occasional		Wet ditches and pond margins	1
Polygonum pennsylvanicum	Pennsylvania smartweed	NA		NA	2
Polygonum sagittatum	arrow-leaved tearthumb	Occasional		Moist thickets and ditches	1
Polygonum scandens	climbing false buckwheat	Occasional		Thickets and roadsides	1
Polygonum sp.	Smartweed	NA		NA	3
Polygonum virginianum	Virginia knotweed	Common		Moist to dry woods	2
Populus deltoides	cottonwood	Frequent, common		Moist woods, borders, and stream banks	1
Potamogeton diversifolius	snailseed pondweed	Frequent		Artificial ponds	1
Potamogeton foliosus	leafy pondweed	Occasional		Artificial ponds	1
Potamogeton nodosus	longleaf pondweed	Occasional		Artificial ponds	1
Potamogeton pectinatus	Sago pondweed	NA		NA	3
Potentilla simplex	cinquefoil	Frequent		Dry openings and roadsides on shale	1
Prunella vulgaris	self-heal	Occasional, frequent		Roadsides and about buildings	1,2
Prunus americana	wild plum	Occasional		Thickets and roadsides	1
Prunus serotina	wild black cherry	Frequent, common		Dry to moist woods and borders	1
Pycnanthemum tenuifolium	narrow-leaved mountain-mint	Frequent, common		Moist openings, especially on shale, old fields	1,2
Pycnanthemum virginianum	Virginia mountain-mint	Occasional		Moist openings and ditches	1
Pyrus coronaria	crab-apple	Frequent		Thickets and borders	1,3
Quercus alba	white oak	Occasional		Dry woods and sandy ridges; a small grove on Taft Road has an unusually pure stand of this species	1
Quercus bicolor	swamp white oak	Frequent		Moist woodlands	1
Quercus imbricaria	shingle oak	Frequent, occasional		Moist to dry woodlands	1,3
Quercus macrocarpa	bur oak	Rare		ca 5 trees on sandy ridge in bunker area south of North Magazine Road; a few trees in area 2a	1
Quercus palustris	pin oak	Common, frequent		Moist woods	1,2
Ranunculus acris	Field buttercup	NA		NA	3
Ranunculus sceleratus	cursed crowfoot	NA		NA	2
Ratibida pinnata	green-headed coneflower	Occasional, frequent		Roadsides and dry fields	1
Rhexia virginica	Virginia meadow-beauty	Occasional	P	Moist openings and pond margins, south of North Magazine Road and along the angling road	1
Ribes americanum	American currant	NA		NA	3
Ribes cynosbati	Gooseberry	Rare		Woods	3
Riccia sp.	liverwort	NA		NA	3
Robinia pseudoacacia	Black locust	Rare		Old fields and thickets	3
Rosa carolina	pasture rose	Occasional		Dry fields	1
Rosa setigera	prairie rose	Rare		Grassy roadside and thickets along Patrol Road at Olemacher Ditch	1,2
Rotala ramosior	toothcup	Occasional		Moist openings and about ponds	1
Rubus allegheniensis	blackberry	Common		Woods, fields, and borders	2
Rubus flagellaris	dewberry	Frequent, common		Dry openings and roadsides on shale, old fields	1,2
Rubus occidentalis	Black raspberry	common		Dry woods, and borders	2
Rudbeckia hirta	black-eyed susan	Frequent		Dry fields and roadsides	1
Rumex acetosella	sheep sorrel	NA		NA	2
Rumex verticillatus	Swamp dock	Rare		Ditches	3
Sagittaria latifolia	broad-leaved arrowhead	Occasional		Ponds and ditches	1
Salix amygdaloides	peachleaf willow	Occasional		Ditches and about ponds	1
Salix discolor	pussy willow	Occasional		Moist openings, ponds, and ditches	1,2
Salix exigua	sandbar willow	Frequent		Moist openings, stream banks, and ditches	1,3
Salix nigra	black willow	Common		Moist woods, stream banks, and ditches	1
Salix sp.	Willow				2
Sambucus canadensis	elder-berry	Frequent, occasional		Moist openings, stream banks, and ditches	1,2
Sassafras albidum	sassafras	Occasional		Dry woods and borders	1
Schizachyrium scoparium	little bluestem	Frequent		Dry fields and roadsides	1
Scirpus acutus	hardstem bulrush	Rare		Moist depression west of Taft Road	1
Scirpus americanus	Three square	rare		Ditches	3

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Scirpus atrovirens	dark green bulrush	Common, occasional		Moist openings, roadsides, and ditches	1,2
Scirpus cyperinus	woolgrass	Occasional		About artificial ponds	1,2
Scirpus fluviatilis	river bulrush	Rare		Moist depression west of Taft Road	1
Scirpus pendulus	NA	Occasional		Moist openings	1
Scirpus polyphyllus	Leafy bulrush				2
Scirpus validus	softstem bulrush	Occasional		Moist openings, ponds, and ditches	1
Scleria triglomerata	tall nut-rush	Rare	P	Moist swale in northern bunker area	1
Scutellaria lateriflora	mad-dog skullcap	Occasional		Moist depressions and ditches	1
Senecio aureus	golden ragwort	Occasional		Moist woods borders	1
Setaria faberi	foxtail	NA		NA	3
Setaria glauca	Yellow foxtail-grass	NA		NA	2
Silphium terebinthinaceum	prairie-dock	Rare		Dry openings at crossing of Patrol Road and Olemacher Ditch	1
Sisyrinchium albidum	prairie blue-eyed-grass	Frequent		Grassy fields	1
Sisyrinchium angustifolium	common blue-eyed-grass	Frequent		Grassy fields	1
Solanum nigrum	Black nightshade	Occasional		Fields and waste areas	3
Solidago canadensis	Canada goldenrod	Common		Grassy fields	1,2
Solidago juncea	early goldenrod	Frequent		Dry to moist fields and roadsides	1
Solidago nemoralis	gray goldenrod	Common		Dry fields and roadsides	1
Solidago riddellii	Riddell's goldenrod	Rare		Moist opening over limestone, west of Snake Road and south of North Magazine Road	1
Sparganium eurycarpum	giant bur-reed	Rare		Wet ditch along Ransom Road	1
Spartina pectinata	prairie cord-grass	Frequent, occasional		Moist depressions, fields, and ditches	1
Spenopholis intermedia	slender wedgescale	NA		NA	3
Spiranthes ochroleuca	creamy ladies'-tresses	Occasional, rare		Ditches and moist openings	1
Sporobolus asper	tall dropseed	Rare		A single stand in dry opening along angling road	1
Sporobolus neglectus	NA	Frequent		Dry openings and road berms	1
Stachys tenuifolia	Hedge nettle	Occasional		Fields	3
Stellaria longifolia	long-leaved stitchwort	Occasional		Moist, grassy fields	1
Symphoricarpos orbiculatus	coralberry	Occasional		Thickets, woods borders, and roadsides	1
Teucrium canadense	American germander	Occasional		Moist openings	1,2
Thelypteris palustris	marsh fern	Occasional, frequent		Moist depressions and roadsides	1
Toxicodendron radicans	Poison ivy	Frequent		Upland and facultative woods, old fields	2
Tradescantia ohioensis	Ohio spiderwort	Occasional		Old fields	2
Triadenum virgnianum	pink St. John's-wort	Rare		Moist swale in northern bunker area	1
Tridens flavus	purpletop	Occasional		Moist fields and roadsides	1
Trifolium hybridum	Alsike clover	Occasional		Fields	3
Triosteum perfoliatum	Wild coffee	Rare		Fields	3
Tussilago farfara	coltsfoot	NA		NA	3
Typha angustifolia	Narrow-leaved cattail	frequent		Ditches	2
Typha latifolia	broad-leaved cattail	Frequent		Moist openings, ponds, and ditches	1,2
Ulmus americana	American elm	Occasional		Moist woods and stream banks	1
Ulmus rubra	slippery elm	Occasional		Moist woods and stream banks	1
Urtica dioica var. procera	American stinging nettle	Occasional, common		Moist fields and openings	1
Urtica dioicia	stinging nettle	NA		NA	2
Verbascum thapsus	woolly mullein	NA		NA	2
Verbena hastata	purple vervain	Frequent		Moist fields, stream banks, and ditches	1,2
Verbena simplex	prairie vervain	Rare		A single stand in dry opening along angling road	1
Verbena stricta	Vervain	Occasional		Fields	3
Verbena urticifolia	white vervain	Occasional, frequent		Moist woods borders and roadsides	1,2
Verbesina alternifolia	wingstem	Frequent, occasional		Moist woods borders, stream banks, and ditches	1
Vernonia gigantea	tall ironweed	Occasional, frequent		Dry to moist fields	1
Viburnum lentago	nannyberry	Frequent		Moist thickets and borders	1
Vicia americana	American vetch	Rare		Old field	3
Viola canadensis	Canada violet	NA		NA	3
Viola cucullata	violet	NA		NA	3
Viola lanceolata	lance-leaved violet	Frequent	P	Ditches and moist openings	1
Viola sagittata	arrow-leaved violet	Frequent		Grassy fields and dry banks	1
Viola sororia	common blue violet	Common, occasional		Grassy fields, roadsides, and about buildings	1
Vitis aestivalis	summer grape	NA		NA	3
Vitis riparia	riverbank grape	Frequent		Woods borders, thickets, and stream banks	1,2
Vitis vulpina	fox grape	Occasional		Woods borders and thickets	1

Appendix A

Vascular Plant Species Documented On Site
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Scientific Name	Common Name	Relative Frequency[(a)]	Rank[(b)]	Habitat	Observed On Site[(c)]
Wolffia columbiana	Columbian water meal	NA		NA	3
Xanthium strumarium	Cockle bur	NA		NA	2
Zanichellia palustris	horned pondweed	Rare		Artificial pond west of Snake Road	1
Zizia aurea	Golden alexanders	Rare		Old fields	3

[(a)] Common - Species which occur in large numbers throughout.
Frequent - Species regularly encountered, but occurring in lesser numbers than common ones.
Occasional - Species found in several places, but never present in large numbers.
Rare - Species found in few places and in low numbers.

[(b)] T - Ohio Threatened Species. P = Ohio Potentially Threatened Species. E = Ohio Endangered Species.

[(c)] 1 - Biological Inventory of Plum Brook Station (Ohio Department of Natural Resources, 1994).
2 - Observed at Ash Pit 1 during site reconnaissance October, 2008 and/or June, 2009.
3 - Observed during a site reconnaissance at another Plum Brook site.

NA – Not available

* Non-native species.

APPENDIX B

ECOLOGICAL SCREENING VALUES

Table B-1

Ecological Screening Values for Soil
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	CAS No.	EPA Eco-SSLs [a] (mg/kg)	Eco Endpoints PRGs [b] (mg/kg)	EPA Region V ESL [c] (mg/kg)	Tox. Benchmark [d] (earthworm only) (mg/kg)	Tox Benchmarks [e] Terrestrial Plants (mg/kg)	Selected ESV (mg/kg)	Reference
Inorganic Analytes								
Aluminum	7429-90-5	pH Dependent	NSV	NSV	NSV	50	pH Dependent	a
Antimony	7440-36-0	0.27	5	0.142	NSV	5	0.27	a
Arsenic	7440-38-2	18	9.9	5.7	60	10	18	a
Barium	7440-39-3	330	283	1.04	NSV	500	330	a
Beryllium	7440-41-7	21	10	1.06	NSV	10	21	a
Cadmium	7440-43-9	0.36	4	0.00222	20	4	0.36	a
Calcium	7440-70-2	NSV	NSV	NSV	NSV	NSV	Nutrient	
Chromium	7440-47-3	26	0.4	0.4	0.4	1	26	a
Chromium, hexavalent	18540-29-9	81	NSV	NSV	NSV	NSV	81	a
Cobalt	7440-48-4	13	20	0.14	NSV	20	13	a
Copper	7440-50-8	28	60	5.4	50	100	28	a
Iron	7439-89-6	pH Dependent	NSV	NSV	NSV	NSV	pH Dependent	a
Lead	7439-92-1	11	40.5	0.0537	500	50	11	a
Magnesium	7439-95-4	NSV	NSV	NSV	NSV	NSV	Nutrient	
Manganese	7439-96-5	220	NSV	NSV	NSV	500	220	a
Mercury	7439-97-6	NSV	0.00051	0.1	0.1	0.3	0.00051	b
Nickel	7440-02-0	38	30	13.6	200	30	38	a
Potassium	7440-09-7	NSV	NSV	NSV	NSV	NSV	Nutrient	
Selenium	7782-49-2	0.52	0.21	0.0276	70	1	0.52	a
Silver	7440-22-4	4.2	2	4.04	NSV	2	4.2	a
Sodium	7440-23-5	NSV	NSV	NSV	NSV	NSV	Nutrient	
Thallium	7440-28-0	NSV	1	0.0569	NSV	1	1	b
Vanadium	7440-62-2	7.8	2	1.59	NSV	2	7.8	a
Zinc	7440-66-6	46	8.5	6.62	200	50	46	a
Cyanide								
Cyanide, Total	57-12-5	NSV	NSV	1.33	NSV	NSV	1.33	c
Polychlorinated Biphenyls								
Aroclor 1016	12674-11-2	NSV	0.371 [f]	0.000332 [f]	NSV	40 [f]	0.371	b
Aroclor 1221	11104-28-2	NSV	0.371 [f]	0.000332 [f]	NSV	40 [f]	0.371	b
Aroclor 1260	11096-82-5	NSV	0.371 [f]	0.000332 [f]	NSV	40 [f]	0.371	b
Organochlorine Pesticides								
4,4'-DDE	72-55-9	0.021 [g]	NSV	0.596	NSV	NSV	0.021	a
4,4'-DDT	50-29-3	0.021 [g]	NSV	0.0035	NSV	NSV	0.021	a
Methoxychlor	72-43-5	NSV	NSV	0.0199	NSV	NSV	0.0199	c
Nitroaromatics								
Amino-2,6-dinitrotoluene, 4-	19406-51-0	NSV	NSV	0.0328 [i]	NSV	NSV	0.0328	c
Amino-4,6-dinitrotoluene, 2-	35572-78-2	NSV	NSV	0.0328 [i]	NSV	NSV	0.0328	c
Dinitrotoluene, 2,4-	121-14-2	NSV	NSV	1.28	NSV	NSV	1.28	c
Dinitrotoluene, 2,6-	606-20-2	NSV	NSV	0.0328	NSV	NSV	0.0328	c
Semivolatile Organic Compounds								
Acenaphthylene	208-96-8	29	NSV	682	NSV	NSV	29	a
Anthracene	120-12-7	29	NSV	1480	NSV	NSV	29	a
Benzo(a)anthracene	56-55-3	1.1	NSV	5.21	NSV	NSV	1.1	a
Benzo(a)pyrene	50-32-8	1.1	NSV	1.52	NSV	NSV	1.1	a
Benzo(b)fluoranthene	205-99-2	1.1	NSV	59.8	NSV	NSV	1.1	a
Benzo(ghi)perylene	191-24-2	1.1	NSV	119	NSV	NSV	1.1	a
Benzo(k)fluoranthene	207-08-9	1.1	NSV	148	NSV	NSV	1.1	a
Benzoic acid	65-85-0	NSV	NSV	NSV	NSV	NSV	NSV	
bis(2-Ethylhexyl)phthalate	117-81-7	NSV	NSV	0.925	NSV	NSV	0.925	c
Chrysene	218-01-9	1.1	NSV	4.73	NSV	NSV	1.1	a

Table B-1

Ecological Screening Values for Soil
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	CAS No.	EPA Eco-SSLs [a] (mg/kg)	Eco Endpoints PRGs [b] (mg/kg)	EPA Region V ESL [c] (mg/kg)	Tox. Benchmark [d] (earthworm only) (mg/kg)	Tox Benchmarks [e] Terrestrial Plants (mg/kg)	Selected ESV (mg/kg)	Reference
Dibenzofuran	132-64-9	NSV	NSV	NSV	NSV	NSV	NSV	
Di-n-butyl phthalate	84-74-2	NSV	200	0.15	NSV	200	200	b
Fluoranthene	206-44-0	1.1	NSV	122	NSV	NSV	1.1	a
Indeno(1,2,3-cd)pyrene	193-39-5	1.1	NSV	109	NSV	NSV	1.1	a
Methylnaphthalene, 2-	91-57-6	29	NSV	3.24	NSV	NSV	3.24	c
Naphthalene	91-20-3	29	NSV	0.0994	NSV	NSV	29	a
Phenanthrene	85-01-8	29	NSV	45.7	NSV	NSV	29	a
Pyrene	129-00-0	1.1	NSV	78.5	NSV	NSV	1.1	a
Volatile Organic Compounds								
Acetone	67-64-1	NSV	NSV	2.5	NSV	NSV	2.5	c
Benzene	71-43-2	NSV	NSV	0.255	NSV	NSV	0.255	c
Bromomethane	74-83-9	NSV	NSV	0.235	NSV	NSV	0.235	c
Butanone, 2-	78-93-3	NSV	NSV	89.6	NSV	NSV	89.6	c
Carbon disulfide	75-15-0	NSV	NSV	0.0941	NSV	NSV	0.0941	c
Dichloroethane, 1,1-	75-34-3	NSV	NSV	20.1	NSV	NSV	20.1	c
Dichloroethene, 1,1-	75-35-4	NSV	NSV	8.28	NSV	NSV	8.28	c
Dichloroethene, cis-1,2-	156-59-2	NSV	NSV	0.784 [h]	NSV	NSV	0.784	c
Methylene chloride	75-09-2	NSV	NSV	4.05	NSV	NSV	4.05	c
Toluene	108-88-3	NSV	200	5.45	NSV	200	200	b
Trichloroethane, 1,1,1-	79-00-5	NSV	NSV	29.8	NSV	NSV	29.8	c
Trichloroethene	79-01-6	NSV	NSV	12.4	NSV	NSV	12.4	c
Trimethylbenzene, 1,2,4-	95-63-6	NSV	NSV	NSV	NSV	NSV	NSV	
Xylene, Total	1330-20-7	NSV	NSV	10	NSV	NSV	10	c

EPA - U.S. Environmental Protection Agency.
ESV - Ecological screening value.
NSV - No screening value available.
mg/kg - Milligrams per kilogram.

Priority for Selection of ESVs:

1) EPA Eco-SSL
2) PRG for Eco Endpoints, (Efroymson, et.al, 1997a)
3) EPA Region 5 Ecological Screening Levels
4) Efroymson, 1997b
5) Efroymson, 1997c

[a] EPA, 2008, Ecological Soil Screening Level (SSL) guidance. On-line at: http://www.epa.gov/ecotox/ecossl/index.html

[b] Efroymson, 1997a, *Preliminary Remediation Goals for Ecological Endpoints* . www.esd.ornl.gov/programs/ecorisk/documents/tm162r2.pdf .

[c] Screening value based on: EPA , 2003, *Region 5 Ecological Screening Level (ESL)* , Website version last updated August 22, 2003: http://www.epa.gov/Region5/rcraca/edql.htm.

[d] Efroymson, R.A., M.E. Will, G.W. Suter, 1997b, Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision, ES/ER/TM-126/R2 (microbial screening values are not included). http://www.esd.ornl.gov/programs/ecorisk/documents/tm126r21.pdf.

[e] Efroymson, R.A., M.E. Will, G.W. Suter, 1997c, Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision, ES/ER/TM-85/R3. http://www.esd.ornl.gov/programs/ecorisk/documents/tm85r3.pdf

[f] Based on the screening value for total PCBs.

[g] Based on the screening value for DDT and metabolites.

[h] Based on the screening value for dichloroethylene [trans-1,2].

Table B-2

Ecological Screening Values for Surface Water
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	CAS No.	Ohio Water Quality Criteria [a] µg/L		Eco PRG [b] µg/L	EPA Region 5 ESV [c] µg/L	Selected Surface Water ESV [d] µg/L
Inorganic Analytes						
Aluminum	7429-90-5	NSV		87	NSV	87
Arsenic	7440-38-2	150	f	3.1	148	3.1
Barium	7440-39-3	220		4	220	4
Beryllium	7440-41-7	100	e	0.66	3.6	0.66
Calcium	7440-70-2	NSV		NSV	NSV	Nutrient
Chromium	7440-47-3	270	e,f	210	42	42
Cobalt	7440-48-4	24		23	24	23
Copper	7440-50-8	30	e,f	12	1.58	1.58
Iron	7439-89-6	NSV		1000	NSV	1000
Lead	7439-92-1	37	e,f	3.2	1.17	1.17
Magnesium	7439-95-4	NSV		NSV	NSV	Nutrient
Manganese	7439-96-5	NSV		120	NSV	120
Nickel	7440-02-0	170	e,f	160	28.9	28.9
Potassium	7440-09-7	NSV		NSV	NSV	Nutrient
Selenium	7782-49-2	5	f	0.39	5	0.39
Sodium	7440-23-5	NSV		NSV	NSV	Nutrient
Vanadium	7440-62-2	44		20	12	12
Zinc	7440-66-6	390	e,f	110	65.7	65.7
Semivolatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	117-81-7	8.4		0.12	0.3	0.12
Volatile Organic Compounds						
Dichloroethane, 1,1-	75-34-3	410		47	47	47
Dichloroethene, cis-1,2-	156-59-2	970		590	970	590
Trichloroethane, 1,1,1-	71-55-6	76		11	76	11

COPEC - Chemical of potential ecological concern.
ESV - Ecological screening value.
µg/L - Microgram per liter.
NSV - No screening value available.

[a] Ohio Environmental Protection Agency (OEPA, 2002), Division of Surface Water, Water Quality Standards, Chapter 3745-1 of the Ohio Administrative Code, Dec 30. http://www.epa.state.oh.us/dsw/rules/3745-1.html. Value is the Outside Mixing Zone Average value.

[b] *Preliminary Remediation Goals (PRG) for Ecological Endpoints* , (Efroymson et. al., 1997).

[c] Screening value based on: EPA , 2003, *Region 5 Ecological Screening Level* , Website version last updated August 22, 2003: http://www.epa.gov/Region5/rcraca/edql.htm.

[d] Surface water ESVs are selected by choosing the minimum screening value based on the three sources provided.

[e] Hardness dependent value (see Table 7-9 in the OAC Chapters 3741-1 and 3791-2). Screening values using a hardness of 400 mg/L $CaCO_3$ were selected, based on a site-specific water hardness of 464 mg/L $CaCO_3$.

[f] Total Recoverable (TR) value is used, per Ohio Administrative Code Chapter 3745-2-04.

Table B-3

Ecological Screening Values for Sediment
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	CAS No.	TEC [a] mg/kg	EPA Region 5 ESV [b] mg/kg	Ecological PRG [c] mg/kg	Ontario Sediment Quality Guidelines [d] mg/kg	Selected ESV [e] mg/kg
Inorganic Analytes						
Aluminum	7429-90-5	NSV	NSV	NSV	NSV	NSV
Antimony	7440-36-0	NSV	NSV	NSV	NSV	NSV
Arsenic	7440-38-2	9.79	9.79	42	6	9.79
Barium	7440-39-3	NSV	NSV	NSV	NSV	NSV
Beryllium	7440-41-7	NSV	NSV	NSV	NSV	NSV
Cadmium	7440-43-9	0.99	0.99	4.2	0.6	0.99
Calcium	7440-70-2	NSV	NSV	NSV	NSV	NSV
Chromium	7440-47-3	43.4	43.4	159	26	43.4
Cobalt	7440-48-4	NSV	50	NSV	50	50
Copper	7440-50-8	31.6	31.6	77.7	16	31.6
Iron	7439-89-6	NSV	NSV	NSV	NSV	NSV
Lead	7439-92-1	35.8	35.8	110	31	35.8
Magnesium	7439-95-4	NSV	NSV	NSV	NSV	NSV
Manganese	7439-96-5	NSV	NSV	NSV	460	460
Mercury	7439-97-6	0.18	0.174	0.7	0.2	0.18
Nickel	7440-02-0	22.7	22.7	38.5	16	22.7
Potassium	7440-09-7	NSV	NSV	NSV	NSV	NSV
Selenium	7782-49-2	NSV	NSV	NSV	NSV	NSV
Silver	7440-22-4	NSV	0.5	1.8	0.5	0.5
Sodium	7440-23-5	NSV	NSV	NSV	NSV	NSV
Thallium	7440-28-0	NSV	NSV	NSV	NSV	NSV
Vanadium	7440-62-2	NSV	NSV	NSV	NSV	NSV
Zinc	7440-66-6	121	121	270	120	121
Nitroaromatics						
2,4,6-Trinitrotoluene	118-96-7	NSV	NSV	NSV	NSV	NSV
Polychlorinated Biphenyls						
Aroclor 1254	11097-69-1	0.0598	0.0598	72	0.07	0.0598
Aroclor 1260	11096-82-5	0.0598	0.0598	63	0.07	0.0598
Semivolatile Organic Compounds						
Benzo(a)anthracene	56-55-3	0.108	0.108	0.69	0.32	0.108
Benzo(a)pyrene	50-32-8	0.15	0.15	0.394	0.37	0.15
Benzo(b)fluoranthene	205-99-2	NSV	10.4	NSV	NSV	10.4
Benzo(ghi)perylene	191-24-2	NSV	0.17	6.3	0.17	0.17
Benzo(k)fluoranthene	207-08-9	NSV	0.24	NSV	0.24	0.24

Table B-3

Ecological Screening Values for Sediment
Plum Brook Ordnance Works, Sandusky, Ohio

Chemical	CAS No.	TEC [a] mg/kg	EPA Region 5 ESV [b] mg/kg	Ecological PRG [c] mg/kg	Ontario Sediment Quality Guidelines [d] mg/kg	Selected ESV [e] mg/kg
Chrysene	218-01-9	0.166	0.166	0.85	0.34	0.166
Dibenzofuran	132-64-9	NSV	0.449	0.42	NSV	0.449
Di-n-butyl phthalate	84-74-2	NSV	1.114	240	NSV	1.114
Fluoranthene	206-44-0	NSV	0.423	0.834	0.75	0.423
Indeno(1,2,3-cd)pyrene	193-39-5	NSV	0.2	0.837	0.2	0.2
Methylnaphthalene, 2-	91-57-6	NSV	0.0202	NSV	NSV	0.0202
Naphthalene	91-20-3	0.176	0.176	0.39	NSV	0.176
Phenanthrene	85-01-8	0.204	0.204	0.54	0.56	0.204
Pyrene	129-00-0	0.195	0.195	1.4	0.49	0.195
Volatiles Organic Compounds						
Acetone	67-64-1	NSV	0.0099	0.0091	NSV	0.0099
Carbon disulfide	75-15-0	NSV	0.0239	0.00086	NSV	0.0239
Methylene chloride	75-09-2	NSV	0.159	18	NSV	0.159

ESV - Ecological screening value.
mg/kg - Milligrams per kilogram.
NSV - No screening value available.

Priority for Selection of ESVs:

1. Threshold effect concentrations (MacDonald et al., 2000)
2. EPA Region 5 ESLs (EPA, 2003)
3. Sediment PRGs (Efroymson, 1997)
4. Sediment quality criteria (OME, 1993)

[a] Threshold Effect Concentrations (TECs), MacDonald, et al., 2000, *Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems,* Arch Environ Contam Toxicol 39:20-31.

[b] Screening value based on: EPA , 2003, *Region 5 Ecological Screening Level* , Website version last updated August 22, 2003: http://www.epa.gov/Region5/rcraca/edql.htm.

[c] Efroymson,et. al., 1997, *Preliminary Remediation Goals for Ecological Endpoints* .

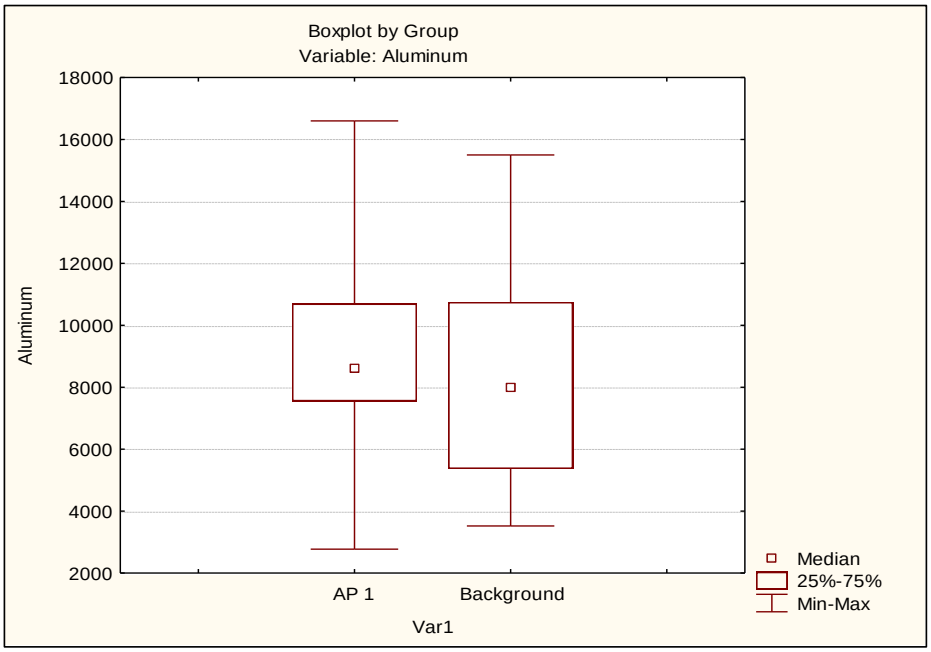
[d] Ontario Ministry of the Environment, 1993 (OME, 1993). Persaud, et al. *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario,* August.

APPENDIX C

WILCOXON RANK SUM TEST RESULTS AND BOX PLOTS FOR ASH PIT 1

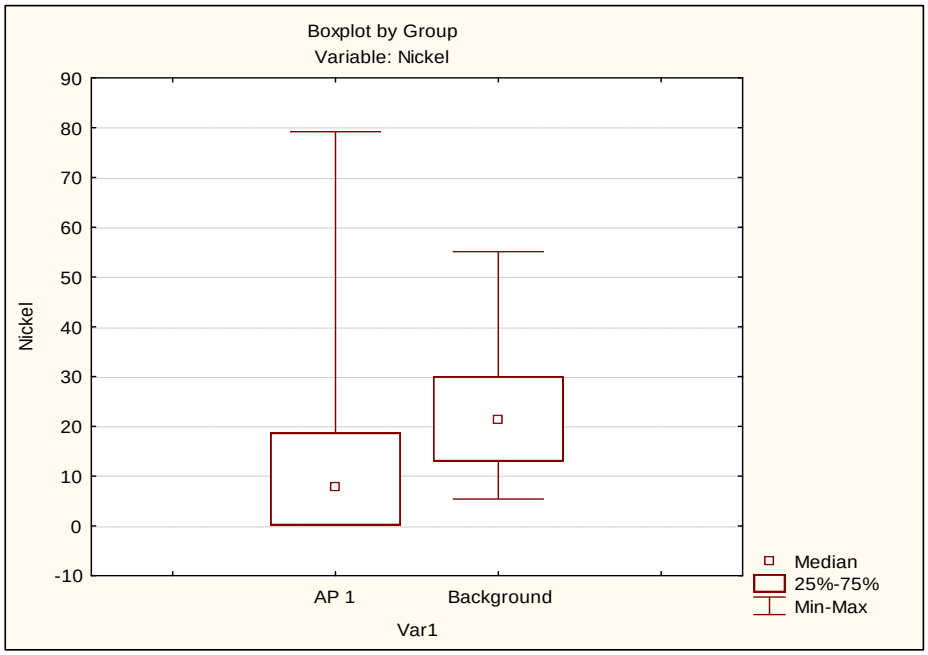
Appendix C

Wilcoxon Rank Sum Test Results and Box Plots for Soil Concentrations of Aluminum in Background Vs. Ash Pit 1 Samples



	Rank Sum	Rank Sum	U	Z	p-level	Z	p-level	Valid N	Valid N	2*1sided
Aluminum	404	191	113	0.68471	0.494	0.6848	0.493	22	12	0.510503

Wilcoxon Rank Sum Test Results and Box Plots for Soil Concentrations of Nickel in Background Vs. Ash Pit 1 Samples



	Rank Sum	Rank Sum	U	Z	p-level	Z	p-level	Valid N	Valid N	2*1sided
Nickel	402.0000	774.0000	149.0000	-2.83475	0.004586	-2.83491	0.004584	22	26	0.004053

APPENDIX D

ASSESSMENT RECEPTOR PROFILES

Appendix D

Assessment Receptor Profiles

Eastern Cottontail (Sylvilagus floridanus). These medium-size grazing herbivores are found over most of the eastern half of the United States and southern Canada, and have been widely introduced into the western U.S. Environmental Protection Agency ([EPA], 1993). The eastern cottontail is unique to the genus because of the large variety of habitats that it occupies, including glades and woodlands, deserts, swamps, prairies, hardwood forests, rain forests, and boreal forests (EPA, 1993). Open grassy areas are generally are used for grazing at night, whereas dense, heavy cover typically is used for shelter during the day (EPA, 1993). During the summer seasons these rabbits consume herbaceous plants (e.g. grasses, clover, timothy, and alfalfa), whereas winter diet typically consists of woody vines, shrubs and trees (e.g.. birch, maple, and apple) (EPA, 1993). Home range is 3 to 20 acres, with larger ranges in the summer and smaller ranges in the winter (Burt and Grossenheider, 1980). Populations fluctuate from 1 to 4 cottontail per four acres to several per acre in winter conditions (Burt and Grossenheider, 1980). The eastern cottontail breeds from February through September and usually produces 3 to 4 litters per year of 1 to 9 young (usually 4 to 5); however, this rabbit's' death rate vies with its birth rate, and few rabbits live for more than one year (Whitaker, 1995). The average longevity is 1.25 years (EPA, 1993).

References:

Burt, W.H. and R.P. Grossenheider, 1980, "A Field Guide to Mammals," ***Peterson Field Guide Series***, Hougton Mifflin Co., Boston.

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Whitaker Jr., J.O., 1995, ***The Audubon Society Field Guide to North American Mammals***, Alfred A. Knopf, Inc., New York.

Deer Mouse (Peromyscus maniculatus). This medium-sized mouse is found in the eastern United States from the Hudson Bay to Pennsylvania, the southern Appalachians, central Arkansas, and central Texas. In the west it is found from Mexico to the south Yukon and north-west territories (Whitaker, 1995). Deer mice habitat includes nearly every dry land habitat within its range, including forest, grasslands, or a mixture of the two (Burt and Grossenheider, 1980).

Nocturnal and active year-round, these mice construct nests in the ground, trees, stumps, and buildings (Burt and Grossenheider, 1980). Omnivorous, the deer mouse feeds on nuts and seeds (e.g., jewel weed and black cherry pits), fruits, beetles, caterpillars, and other insects. Deer mice may cache their food during the fall and winter in the more northern parts of their range (EPA, 1993). Home range is 0.15 to 3 acres (Burt and Grossenheider, 1980; EPA, 1993). Density of populations is 4 to 12 mice per acre, and average life span is 2 years in the wild (Burt and Grossenheider, 1980). The breeding season is from February to November, depending on latitude. Three to five young are born in each of two to four litters per year (Burt and Grossenheider, 1980). They are gray- to red-brown with a white belly and a distinctly short-haired, bicolor tail (Whitaker, 1995). Weight range is 14.8 (EPA, 1993) to 33 grams (Whitaker, 1995).

References:

Burt, W.H. and R.P. Grossenheider, 1980, "A Field Guide to Mammals," ***Peterson Field Guide Series***, Hougton Mifflin Co., Boston.

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Whitaker Jr., J.O., 1995, ***The Audubon Society Field Guide to North American Mammals***, Alfred A. Knopf, Inc., New York.

Mallard Duck (Anas platyrhynchos). The mallard duck is widespread throughout most of the United States and is the most abundant of the United States ducks. It is large, migratory duck with an average body size of 58 centimeters from bill to tail tip. Wintering mallards prefer the natural bottom-land wetlands and rivers where water depths are 20 to 40 centimeters. The primary habitat requirement for nesting is thought to be dense grassy vegetation. Nests are generally located within a few kilometers of water (EPA, 1993).

In winter, mallards feed primarily on seeds, invertebrates, agricultural grains and, to a limited extent, leaves, stems, buds, rootlets, and tubers. In spring, females shift mostly to a diet of invertebrates to support molting and egg laying activities. Ducklings also feed mainly on invertebrates to help support their rapid growth rates. Mallards are serially monogamous and remate annually. Each pair of mallards establishes a territory and the drake defends it against other mallards. Average home range size varies, depending upon the type of habitat available. High rates of nest failure require the females to renest persistently, with average clutch size decreasing as the breeding season progresses. Annual adult mortality rates vary with year,

depending on location, hunting pressure, age, and sex. Females suffer greater natural mortality rates than do males (EPA, 1993).

The typical home range of the mallard is from 540 to 620 hectares (ha) for adult female and male birds, respectively, for wetlands and river habitat in Minnesota (USEPA, 1993). For the current ERA, an average home range of 580 ha was used. The typical migration schedule is from mid-March through mid-May for the spring migration. The fall migration typically starts in mid-October, and peaks in November (USEPA, 1993).

References:

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Red-Tailed Hawk (Buteo jamacensis). This carnivorous hawk is one of the most common and widespread members of the genus *Buteo* in the continental United States and Canada (Brown and Amadon, 1968). Red-tailed hawks live in a variety of habitats, such as farmlands, woodlands, mountains, and deserts, as long as there is open country interdispersed with woods, bluffs, or streamside trees. They are primarily carnivorous, feeding on (greater than 85 percent) small rodents, as well as fish. Other prey items include amphibians, reptiles, crayfish, and other birds (Adamcik, et al., 1979; Ehrlich, et al., 1988). Home range has been reported as approximately 66.8 acres, with a population density of 0.16 pairs per acre (Janes, 1984), although EPA (1993) reports an average territory size of 842 hectares (2,080 acres). Breeding population density is one nest per 0.009 acre or one individual per 0.004 acre. Body weight for male red-tails is 1,028.6 to 1,142.9 grams, and for females 1,371.4 to 1,600 grams (Brown and Amadon, 1968), although EPA (1993) reports an average body weight of 957 grams. They typically mate for life or until one of the pair dies, with pairs clinging to territories year after year (Austing, 1964).

References:

Adamcik, R.S., A.W. Todd, and L.B. Keith, 1979, "Demographic and Dietary Responses of Red-Tailed Hawks During a Snowshoe Hare Fluctuation," ***Canadian Field Naturalist***, Vol. 93, pp. 16-27.

Austing, G.R., 1964, ***The World of the Red-Tailed Hawk***, J. B. Lippincott Co., Philadelphia.

Brown, L. and D. Amadon, 1968, ***Eagles, Hawks, and Falcons of the World***, Vol. 1, McGraw-Hill Book Company, New York.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye, 1988, ***The Birder's Handbook: A field guide to the Natural History of North American Birds***, Simon and Shuster, Inc., New York.

Janes, S.W., 1984, "Influences of Territory Composition and Interspecific Competition on Red-Tailed Hawk Reproductive Success," ***Ecology***, 65:862-870.

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Raccoon (Procyon lotor). Raccoons are native only in the Americas. Their range extends from the southern edge of the southern provinces of Canada and most of the United States, except for portions of the Rocky Mountain states, central Nevada, and Utah (Whitaker, 1995). The raccoon weighs from 3 to 15 kilograms (Merritt, 1987; EPA, 1993) and has a head and body length of 46 to 71 centimeters and a tail length of 20 to 30 centimeters (Burt and Grossenheider, 1980). The raccoon is nocturnal and solitary, except when breeding or caring for its young. During particularly cold spells, the raccoon may sleep for several days at a time but does not hibernate (Whitaker, 1995). The raccoon is found along lakes near wooded areas or rock cliffs (Burt and Grossenheider, 1980), but prefers wooded streams (Whitaker, 1995). The raccoon is highly omnivorous and is an opportunistic feeder, consuming virtually any animal or plant matter that is available (Merritt, 1987; EPA, 1993). Animal matter predominates the diet during the spring and early summer; plant matter predominates during late summer, autumn, and winter (Merritt, 1987; EPA, 1993). The home range of the raccoon extends up to 3.2 kilometers across, but usually it is less than 1.6 kilometers. Population densities range from one per acre (highest) to one per 15 acres (considered high) (Burt and Grossenheider, 1980). Captive raccoons live for approximately 14 years (Burt and Grossenheider, 1980). Average body weight is 5.1 kilograms (EPA, 1993).

References:

Burt, W.H., and R.P. Grossenheider, 1980, "A Field Guide to Mammals," ***Peterson Field Guide Series***, Hougton Mifflin Co., Boston.

Merritt, J.F., 1987, ***Guide to the Mammals of Pennsylvania***, University of Pittsburgh Press, Pennsylvania.

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook, Volume I of II***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Whitaker Jr., J.O., 1995, ***The Audubon Society Field Guide to North American Mammals***, Alfred A. Knopf, Inc., New York.

Short-tailed Shrew (Blarina brevicauda). This shrew is the largest found in North America. It is solid grey above and below, with a short tail, and weighs between 15 and 29 grams (Whitaker, 1995). Total length of this shrew is 76 to 102 millimeters (Burt and Grossenheider, 1980). The range of this shrew extends from southeastern Canada and the northeastern U.S. to Nebraska, Missouri, Kentucky, and in the mountains to Alabama (Whitaker, 1995). Preferable habitat for the shrew includes forests, grasslands, marshes, and brushy areas. It will make a nest of dry leaves, grass, and hair beneath logs, stumps, rocks, or debris (Burt and Grossenheider, 1980). This underground tunneler may burrow as deep as 6 feet, and has a voracious appetite, eating one half of its own body weight per day of earthworms, other terrestrial vertebrates, and sometimes young mice (Whitaker, 1995). Mean population densities range from 5.7 in the winter, to 28 per acre in the summer (EPA, 1993). Their home range varies from 0.5 to 1 acre (Burt and Grossenheider, 1980). Longevity is typically around 20 months (EPA, 1993), with five to eight young born to each of two to three litters (Burt and Grossenheider, 1980).

References:

Burt, W.H. and R.P. Grossenheider, 1980, "A Field Guide to Mammals," ***Peterson Field Guide Series***, Hougton Mifflin Co., Boston.

U.S. Environmental Protection Agency (EPA), 1993, ***Wildlife Exposure Factors Handbook***, Office of Health and Environmental Assessment, Office of Research and Development, EPA/600/R93/187a.

Whitaker Jr., J.O., 1995, ***The Audubon Society Field Guide to North American Mammals***, Alfred A. Knopf, Inc., New York.

White-tailed Deer (Odocoileus virginianus). The white-tailed deer is a member of the Family Cervidae. They are large, even-toed, hoofed mammals with long legs. Their coat is predominantly light brown or chestnut colored, with the underparts being white. Deer are primarily herbivorous grazers and browsers, constantly moving from one food source to the next. The deer's diet changes seasonally. When available, farm crops such as winter wheat, corn, alfalfa, soy beans, and hay are important components of the species diet. Other top food items include wild crab apples, sumac, grasses, green briar, clover, jewelweed, acorns, and dogwood. In regions where the climate varies from season to season, deer may make annual migrations of 10 to 20 miles in the search for food. However, in Ohio, deer typically have rather small home ranges (2 to 3 square miles) and are reluctant to leave this range. The average weight for the

species is 88 kilograms for males and 61 kilograms for females. Breeding season ranges from November through February, with the young offspring born in May and early June. Virtually all yearling and adult does conceive each year, and in Ohio usually carry twins. Triplets and quadruplets have also been recorded Gottschang (1981).

References:

Gottschang, J.L., 1981, ***A Guide to the Mammals of Ohio***, The Ohio State University Press, pp. 143-149.

Marsh Wren (Cistothorus palustris). The marsh wren is a small bird (4 to 4.5 inches in length) which inhabits freshwater cattail marshes and salt marshes. Nesting pairs are not likely to occupy other habitats and the species avoids the wet meadow and sedge meadow habitats preferred by sedge wrens. Marsh wrens breed throughout most of the northern half of the United States and in coastal areas as far south as Florida. The species eats mostly insects, and occasionally snails and other invertebrates. The average body weight is 0.01 kilograms, and the average home range for the species is 0.054 hectares. Because the species is polygamous, there may be more females than males inhabiting a breeding marsh. Densities as high as 120 birds per hectare have been recorded (EPA, 1993). Marsh wrens' nests are globular structures placed at heights of 2 to 5 feet in dense vegetation. The males commonly build dummy nests in addition to the one where the eggs will be laid (Peterjohn and Rice, 1991).

References:

U.S. Environmental Protection Agency (EPA), Office of Research and Development, 1993, ***Wildlife Exposure Factors Handbook***, EPA/600/R-93/187a.

Peterjohn, B.G., and Rice, D.L., 1991, ***The Ohio Breeding Bird Atlas***, The Ohio Department of Natural Resources.

Muskrat (Ondata zibethicus). The muskrat is a member of the Family Muridaee. Muskrats are the most aquatic of this family of rodents, and spend much of their lives in or near bogs, marshes, lakes or streams. Their diet consists primarily of aquatic vegetation (in particular the roots or basal portions of aquatic plants), although they can be omnivorous if other food sources are more common. Marsh grasses, sedges, and cattails are important muskrat food items. They are indigenous and common throughout most of the United States. Muskrats have relatively small home ranges that vary in configuration based on the physical attributes of their aquatic habitat. The average weight for the species is approximately 1.3 kilograms for males and 1.2 kilograms for females during the winter, and 0.9 kg for males and 0.8 kg for females during the

spring. Muskrats typically breed during the first spring after birth, and typically produce 1-12 pups, with southern populations producing more litters, but fewer pups per litter compared with northern populations (EPA, 1993).

References:

U.S. Environmental Protection Agency (EPA), Office of Research and Development, 1993, ***Wildlife Exposure Factors Handbook***, EPA/600/R-93/187a.

APPENDIX E

FOOD CHAIN MODEL EXPOSURE DOSES AND HAZARD QUOTIENTS

Table E-1

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Deer Mouse
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL	HQ NOAEL	TRV LOAEL	HQ LOAEL
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							1.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+00	1.93E+00	6.75E-01	1.93E+01	6.75E-02
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							1.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-03	1.26E-01	9.79E-03	1.26E+00	9.79E-04
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							1.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-02	5.10E+00	2.33E-03	1.98E+01	6.01E-04
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-01	0.00E+00	3.30E+00	0.00E+00
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							2.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-03	1.17E+01	2.44E-04	1.51E+01	1.89E-04
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							2.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-03	8.00E+00	2.79E-04	8.00E+01	2.79E-05
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							1.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-01	8.80E+01	1.41E-03	2.84E+02	4.38E-04
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	5.26E-04	0.00E+00	0.00E+00	4.16E-02	0.00E+00	1.46E-02	0.00E+00	0.00E+00	5.67E-02	1.30E+01	4.37E-03	1.32E+02	4.30E-04
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	5.13E-03	0.00E+00	0.00E+00	8.56E-02	0.00E+00	8.21E-02	0.00E+00	0.00E+00	1.73E-01	2.00E-01	8.64E-01	3.30E-01	5.24E-01
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							2.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.97E-03	2.10E-01	1.42E-02	2.10E+00	1.42E-03
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							1.39E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-02	1.60E+02	8.66E-05	3.20E+02	4.33E-05
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-02	0.00E+00	6.80E-01	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E+00	0.00E+00	1.23E+01	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	1.00E+01	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-03	0.00E+00	0.00E+00	1.28E-02	0.00E+00	2.97E-02	0.00E+00	0.00E+00	4.56E-02	4.00E+00	1.14E-02	2.00E+01	2.28E-03
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.16E-03	0.00E+00	0.00E+00	1.70E-02	0.00E+00	6.34E-02	0.00E+00	0.00E+00	8.46E-02	1.00E+00	8.46E-02	1.00E+01	8.46E-03
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.91E-03	0.00E+00	0.00E+00	3.89E-02	0.00E+00	1.31E-02	0.00E+00	0.00E+00	5.59E-02	7.20E+00	7.77E-03	3.60E+01	1.55E-03
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+01	0.00E+00	7.15E+01	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.14E+00	0.00E+00	2.57E+01	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.93E-03	0.00E+00	0.00E+00	2.57E-02	0.00E+00	6.44E-02	0.00E+00	0.00E+00	9.31E-02	7.50E+00	1.24E-02	3.75E+01	2.48E-03

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0.61	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	0.39	unitless
Mammal diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.000056	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.0028	kg/d
Body weight =	0.0148	kg
Home range =	0.153	acres
Water intake rate =	0.0022	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	1	unitless
Exposure Frequency (EF) =	1	unitless

Table E-2

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Short-Tailed Shrew
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Total Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV_{NOAEL}	HQ_{NOAEL}	TRV_{LOAEL}	HQ_{LOAEL}
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d		mg/kg-d	
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	7.80E+02							1.34E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E+00	1.93E+00	6.97E-01	1.93E+01	6.97E-02
Arsenic	8.30E-03	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	1.74E+02							1.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-03	1.26E-01	1.01E-02	1.26E+00	1.01E-03
Barium	8.00E-02	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	1.46E+02							1.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-02	5.10E+00	2.41E-03	1.98E+01	6.20E-04
Beryllium	0.00E+00	mg/L	1.60E+00	ng/k	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-01	0.00E+00	3.30E+00	0.00E+00
Copper	1.92E-02	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	1.21E+03							2.94E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-03	1.17E+01	2.52E-04	1.51E+01	1.94E-04
Lead	1.50E-02	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	6.38E+01							2.30E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.30E-03	8.00E+00	2.88E-04	8.00E+01	2.88E-05
Manganese	8.36E-01	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	2.47E+02							1.28E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-01	8.80E+01	1.46E-03	2.84E+02	4.51E-04
Mercury	0.00E+00	mg/L	0.00E+00	ng/k	9.35E-02	mg/kg	1.00E+00			5.29E+00		1.09E+00	1.92E-01	1.92E-01	0.00E+00	0.00E+00	1.43E-03	0.00E+00	0.00E+00	7.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.40E-02	1.30E+01	5.69E-03	1.32E+02	5.60E-04
Selenium	0.00E+00	mg/L	0.00E+00	ng/k	1.06E+00	mg/kg	1.00E+00			9.14E-01		5.11E-01	6.37E-01	6.37E-01	0.00E+00	0.00E+00	1.62E-02	0.00E+00	0.00E+00	1.42E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-01	2.00E-01	7.90E-01	3.30E-01	4.79E-01
Vanadium	2.00E-02	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	4.46E+02							3.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-03	2.10E-01	1.46E-02	2.10E+00	1.46E-03
Zinc	9.32E-02	mg/L	0.00E+00	ng/k	0.00E+00	mg/kg	1.00E+00	1.22E+03							1.43E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-02	1.60E+02	8.93E-05	3.20E+02	4.47E-05
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	ng/k	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-02	0.00E+00	6.80E-01	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	ng/k	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E+00	0.00E+00	1.23E+01	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	ng/k	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	1.00E+01	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	ng/k	4.58E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.99E-03	0.00E+00	0.00E+00	1.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-02	4.00E+00	5.27E-03	2.00E+01	1.05E-03
Fluoranthene	0.00E+00	mg/L	0.00E+00	ng/k	3.56E-01	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-03	0.00E+00	0.00E+00	1.10E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-02	1.00E+00	1.64E-02	1.00E+01	1.64E-03
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	ng/k	7.10E-01	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-02	0.00E+00	0.00E+00	5.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.39E-02	7.20E+00	8.88E-03	3.60E+01	1.78E-03
Napthalene	0.00E+00	mg/L	3.37E-01	ng/k	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+01	0.00E+00	7.15E+01	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	ng/k	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.14E+00	0.00E+00	2.57E+01	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	ng/k	2.60E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.97E-03	0.00E+00	0.00E+00	1.72E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-02	7.50E+00	2.82E-03	3.75E+01	5.63E-04

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x \, Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	1	unitless
Mammal diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.0002288	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.0022	kg/d
Body weight =	0.015	kg
Home range =	0.96	acres
Water intake rate =	0.0023	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	1	unitless
Exposure Frequency (EF) =	1	unitless

Table E-3

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Cottontail Rabbit
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL		TRV LOAEL	
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	HQ NOAEL	mg/kg-d	HQ LOAEL
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							2.23E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-01	1.93E+00	1.15E-01	1.93E+01	1.15E-02
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							2.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-04	1.26E-01	1.67E-03	1.26E+00	1.67E-04
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							2.03E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.03E-03	5.10E+00	3.98E-04	1.98E+01	1.03E-04
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-01	0.00E+00	3.30E+00	0.00E+00
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							4.87E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-04	1.17E+01	4.16E-05	1.51E+01	3.22E-05
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							3.81E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.81E-04	8.00E+00	4.76E-05	8.00E+01	4.76E-06
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							2.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-02	8.80E+01	2.41E-04	2.84E+02	7.47E-05
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	1.94E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E-03	0.00E+00	0.00E+00	3.00E-03	1.30E+01	2.31E-04	1.32E+02	2.27E-05
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	1.89E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-02	0.00E+00	0.00E+00	1.76E-02	2.00E-01	8.82E-02	3.30E-01	5.35E-02
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							5.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.07E-04	2.10E-01	2.42E-03	2.10E+00	2.42E-04
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							2.36E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.36E-03	1.60E+02	1.48E-05	3.20E+02	7.39E-06
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-02	0.00E+00	6.80E-01	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E+00	0.00E+00	1.23E+01	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	1.00E+01	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-03	0.00E+00	0.00E+00	6.85E-03	4.00E+00	1.71E-03	2.00E+01	3.42E-04
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-02	0.00E+00	0.00E+00	1.37E-02	1.00E+00	1.37E-02	1.00E+01	1.37E-03
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-03	0.00E+00	0.00E+00	3.96E-03	7.20E+00	5.50E-04	3.60E+01	1.10E-04
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+01	0.00E+00	7.15E+01	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.14E+00	0.00E+00	2.57E+01	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00	1.34E-02	7.50E+00	1.79E-03	3.75E+01	3.58E-04

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	1	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	0	unitless
Mammal diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.006048	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.096	kg/d
Body weight =	1.132	kg
Home range =	7.66	acres
Water intake rate =	0.11	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	0.26109661	unitless
Exposure Frequency (EF) =	1	unitless

Table E-4

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Marsh Wren
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL	HQ NOAEL	TRV LOAEL	HQ LOAEL
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d		mg/kg-d	
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							2.37E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E+00	1.10E+02	2.15E-02	1.10E+03	2.15E-03
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							2.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E-03	5.14E+00	4.36E-04	1.28E+01	1.75E-04
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							2.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-02	2.08E+01	1.04E-03	4.17E+01	5.18E-04
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							5.18E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.18E-03	4.70E+01	1.10E-04	6.17E+01	8.40E-05
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							4.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.05E-03	1.13E+00	3.58E-03	1.13E+01	3.58E-04
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							2.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-01	9.77E+02	2.31E-04	9.77E+03	2.31E-05
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	8.06E-04	0.00E+00	0.00E+00	1.63E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-01	4.50E-01	3.65E-01	9.00E-01	1.83E-01
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	7.86E-03	0.00E+00	0.00E+00	3.36E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.44E-01	5.00E-01	6.88E-01	1.00E+00	3.44E-01
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							5.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-03	1.14E+01	4.75E-04	1.14E+02	4.75E-05
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							2.52E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-02	1.45E+01	1.74E-03	1.31E+02	1.92E-04
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-01	0.00E+00	1.80E+00	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E+01	0.00E+00	2.28E+02	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E-01	0.00E+00	3.50E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-03	0.00E+00	0.00E+00	5.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.53E-02	1.40E-01	3.95E-01	7.00E-01	7.90E-02
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.37E-03	0.00E+00	0.00E+00	6.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.33E-02	3.95E+01	1.86E-03	3.95E+02	1.86E-04
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.00E-03	0.00E+00	0.00E+00	1.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-01	1.00E+00	1.59E-01	5.00E+00	3.18E-02
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E+01	0.00E+00	1.50E+02	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	5.00E+00	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.50E-03	0.00E+00	0.00E+00	1.01E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-01	3.95E+01	2.67E-03	3.95E+02	2.67E-04

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	1	unitless
Mammal diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.000058	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.0029	kg/d
Body weight =	0.01	kg
Home range =	0.13	acres
Water intake rate =	0.0027	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	1	unitless
Exposure Frequency (EF) =	1	unitless

Table E-5

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the White-Tailed Deer
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Total Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL	HQ NOAEL	TRV LOAEL	HQ LOAEL
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d		mg/kg-d	
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							8.99E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.99E-04	1.93E+00	4.66E-04	1.93E+01	4.66E-05
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							8.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.50E-07	1.26E-01	6.75E-06	1.26E+00	6.75E-07
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							8.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.20E-06	5.10E+00	1.61E-06	1.98E+01	4.14E-07
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-01	0.00E+00	3.30E+00	0.00E+00
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							1.97E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-06	1.17E+01	1.68E-07	1.51E+01	1.30E-07
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-06	8.00E+00	1.92E-07	8.00E+01	1.92E-08
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							8.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.57E-05	8.80E+01	9.73E-07	2.84E+02	3.02E-07
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	9.35E-02	mg/kg	1.00E+00			5.29E+00		1.09E+00	1.92E-01	1.92E-01	0.00E+00	0.00E+00	9.58E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-06	0.00E+00	0.00E+00	5.34E-06	1.30E+01	4.11E-07	1.32E+02	4.04E-08
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.06E+00	mg/kg	1.00E+00			9.14E-01		5.11E-01	6.37E-01	6.37E-01	0.00E+00	0.00E+00	1.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-05	0.00E+00	0.00E+00	2.88E-05	2.00E-01	1.44E-04	3.30E-01	8.73E-05
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							2.05E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-06	2.10E-01	9.76E-06	2.10E+00	9.76E-07
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							9.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.55E-06	1.60E+02	5.97E-08	3.20E+02	2.98E-08
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-02	0.00E+00	6.80E-01	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E+00	0.00E+00	1.23E+01	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	1.00E+01	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	4.58E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.69E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.27E-06	0.00E+00	0.00E+00	7.74E-06	4.00E+00	1.94E-06	2.00E+01	3.87E-07
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	3.56E-01	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.12E-06	0.00E+00	0.00E+00	9.48E-06	1.00E+00	9.48E-06	1.00E+01	9.48E-07
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	7.10E-01	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.27E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-06	0.00E+00	0.00E+00	4.73E-06	7.20E+00	6.57E-07	3.60E+01	1.31E-07
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E+01	0.00E+00	7.15E+01	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.14E+00	0.00E+00	2.57E+01	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	2.60E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.66E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.59E-06	0.00E+00	0.00E+00	9.86E-06	7.50E+00	1.31E-06	3.75E+01	2.63E-07

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	1	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	0	unitless
Mammal diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.04	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	2	kg/d
Body weight =	61	kg
Home range =	1280	acres
Water intake rate =	4	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	0.0015625	unitless
Exposure Frequency (EF) =	1	unitless

Table E-6

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Raccoon
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL		TRV LOAEL	
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	HQ NOAEL	mg/kg-d	HQ LOAEL
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							3.84E-03	0.00E+00	0.00E+00	3.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.01E-02	1.93E+00	2.08E-02	1.93E+01	2.08E-03
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							3.64E-06	0.00E+00	0.00E+00	7.65E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-05	1.26E-01	8.96E-05	1.26E+00	8.96E-06
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							3.50E-05	0.00E+00	0.00E+00	6.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.69E-05	5.10E+00	1.90E-05	1.98E+01	4.89E-06
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	1.99E-05	0.00E+00	0.00E+00	4.80E-04	0.00E+00	4.60E-05	0.00E+00	0.00E+00	0.00E+00	5.45E-04	6.60E-01	8.26E-04	3.30E+00	1.65E-04
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							8.41E-06	0.00E+00	0.00E+00	1.23E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-04	1.17E+01	1.12E-05	1.51E+01	8.69E-06
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							6.57E-06	0.00E+00	0.00E+00	5.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-05	8.00E+00	1.45E-06	8.00E+01	1.45E-07
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							3.66E-04	0.00E+00	0.00E+00	1.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-03	8.80E+01	1.66E-05	2.84E+02	5.14E-06
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	1.73E-06	0.00E+00	0.00E+00	4.48E-05	0.00E+00	7.05E-06	3.53E-07	0.00E+00	5.39E-05	1.00E+00	5.39E-05	5.00E+00	1.08E-05
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	1.69E-05	0.00E+00	0.00E+00	9.21E-05	0.00E+00	3.96E-05	9.80E-06	0.00E+00	1.58E-04	2.00E-01	7.92E-04	3.30E-01	4.80E-04
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							8.76E-06	0.00E+00	0.00E+00	4.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.60E-05	2.10E-01	2.66E-04	2.10E+00	2.66E-05
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							4.08E-05	0.00E+00	0.00E+00	6.01E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.42E-04	1.60E+02	4.01E-06	3.20E+02	2.00E-06
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	1.41E-06	0.00E+00	0.00E+00	2.01E-05	0.00E+00	4.02E-09	0.00E+00	0.00E+00	0.00E+00	2.15E-05	6.80E-02	3.16E-04	6.80E-01	3.16E-05
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	7.67E-06	0.00E+00	0.00E+00	1.47E-04	0.00E+00	9.25E-06	0.00E+00	0.00E+00	0.00E+00	1.64E-04	2.45E+00	6.70E-05	1.23E+01	1.34E-05
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	1.51E-06	0.00E+00	0.00E+00	9.76E-06	0.00E+00	1.06E-06	0.00E+00	0.00E+00	0.00E+00	1.23E-05	1.00E+00	1.23E-05	1.00E+01	1.23E-06
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E-05	0.00E+00	0.00E+00	1.38E-05	0.00E+00	1.43E-05	0.00E+00	0.00E+00	3.84E-05	4.00E+00	9.61E-06	2.00E+01	1.92E-06
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-05	0.00E+00	0.00E+00	1.83E-05	0.00E+00	3.06E-05	0.00E+00	0.00E+00	6.26E-05	1.00E+00	6.26E-05	1.00E+01	6.26E-06
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-05	0.00E+00	0.00E+00	4.19E-05	0.00E+00	6.33E-06	0.00E+00	0.00E+00	6.11E-05	7.20E+00	8.49E-06	3.60E+01	1.70E-06
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	4.19E-06	0.00E+00	0.00E+00	8.06E-05	0.00E+00	2.29E-04	0.00E+00	0.00E+00	0.00E+00	3.13E-04	1.43E+01	2.19E-05	7.15E+01	4.38E-06
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	3.81E-06	0.00E+00	0.00E+00	1.50E-05	0.00E+00	2.26E-05	0.00E+00	0.00E+00	0.00E+00	4.14E-05	5.14E+00	8.05E-06	2.57E+01	1.61E-06
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	2.43E-06	9.65E-06	0.00E+00	1.41E-05	2.77E-05	7.81E-06	3.10E-05	0.00E+00	0.00E+00	9.27E-05	7.50E+00	1.24E-05	3.75E+01	2.47E-06

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0.21	unitless
Aquatic plant diet fraction =	0.21	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0.02	unitless
Aq. Invert diet fraction =	0.21	unitless
Terr. Invert diet fraction =	0.3	unitless
Mammal diet fraction =	0.05	unitless
Bird diet fraction =	0	unitless
Soil ingestion rate =	0.01222	kg/d
Sediment ingestion rate =	0.01222	kg/d
Food ingestion rate =	0.26	kg/d
Body weight =	5.1	kg
Home range =	385	acres
Water intake rate =	0.43	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	0.00519481	unitless
Exposure Frequency (EF) =	1	unitless

Table E-7

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Red-Tailed Hawk
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL		TRV LOAEL	
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	HQ NOAEL	mg/kg-d	HQ LOAEL
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							5.02E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-04	1.10E+02	4.57E-06	1.10E+03	4.57E-07
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							4.75E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.75E-07	5.14E+00	9.25E-08	1.28E+01	3.70E-08
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							4.58E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.58E-06	2.08E+01	2.20E-07	4.17E+01	1.10E-07
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							1.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-06	4.70E+01	2.34E-08	6.17E+01	1.78E-08
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							8.59E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.59E-07	3.85E+00	2.23E-07	3.85E+01	2.23E-08
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							4.79E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.79E-05	9.77E+02	4.90E-08	9.77E+03	4.90E-09
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	1.59E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-06	3.67E-07	1.69E-06	4.50E-01	3.75E-06	9.00E-01	1.88E-06
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-05	1.02E-05	4.39E-05	4.40E-01	9.98E-05	1.50E+00	2.93E-05
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							1.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-06	1.14E+01	1.01E-07	1.14E+02	1.01E-08
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							5.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.34E-06	1.45E+01	3.68E-07	1.31E+02	4.07E-08
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-01	0.00E+00	1.80E+00	0.00E+00
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E+01	0.00E+00	2.28E+02	0.00E+00
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E-01	0.00E+00	3.50E+00	0.00E+00
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.50E-07	1.40E-01	6.78E-06	7.00E-01	1.36E-06
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-06	3.95E+01	3.19E-08	3.95E+02	3.19E-09
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-06	1.00E+00	1.18E-06	5.00E+00	2.37E-07
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E+01	0.00E+00	1.50E+02	0.00E+00
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	5.00E+00	0.00E+00
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-07	3.95E+01	2.25E-08	3.95E+02	2.25E-09

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0	unitless
Aquatic plant diet fraction =	0	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	0	unitless
Mammal diet fraction =	0.76	unitless
Bird diet fraction =	0.24	unitless
Soil ingestion rate =	0.00114	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.057	kg/d
Body weight =	0.957	kg
Home range =	2080	acres
Water intake rate =	0.057	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	0.0009615	unitless
Exposure Frequency (EF) =	1	unitless

Table E-8

Chemicals of Potential Concern
Exposure Doses and Hazard Quotients for the Muskrat
Ash Pit 1
Plum Brook Ordnance Works
Sandusky, Ohio

Chemical	Surface Water Exposure Point Concentration	Units	Sediment Exposure Point Concentration	Units	Surface Soil Exposure Point Concentration	Units	Soil BAF	Fish BAF	Aq. Invert. BAF	Terr. Invert. BAF	Aq. Plant BAF	Terr. Plant BAF	Mammal BAF	Bird BAF	EED Surface Water	EED Sediment	EED Soil	EED Fish	EED Aq. Invert.	EED Terr. Invert.	EED Aq. Plants	EED Terr. Plants	EED Mammals	EED Birds	Total EED	TRV NOAEL		TRV LOAEL	
							----------Unitless----------								mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	HQ NOAEL	mg/kg-d	HQ LOAEL
Metals																													
Aluminum	8.77E+00	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	7.80E+02							8.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.22E-01	1.93E+00	4.26E-01	1.93E+01	4.26E-02
Arsenic	8.30E-03	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.74E+02							7.78E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.78E-04	1.26E-01	6.17E-03	1.26E+00	6.17E-04
Barium	8.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.46E+02							7.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E-03	5.10E+00	1.47E-03	1.98E+01	3.79E-04
Beryllium	0.00E+00	mg/L	1.60E+00	mg/kg	0.00E+00	mg/kg	1.00E+00		5.39E+00		5.16E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-01	0.00E+00	0.00E+00	0.00E+00	2.48E-01	6.60E-01	3.75E-01	3.30E+00	7.51E-02
Copper	1.92E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.21E+03							1.80E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-03	1.17E+01	1.54E-04	1.51E+01	1.19E-04
Lead	1.50E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	6.38E+01							1.41E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-03	8.00E+00	1.76E-04	8.00E+01	1.76E-05
Manganese	8.36E-01	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	2.47E+02							7.83E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.83E-02	8.80E+01	8.90E-04	2.84E+02	2.76E-04
Mercury	0.00E+00	mg/L	0.00E+00	mg/kg	1.39E-01	mg/kg	1.00E+00			4.06E+00		9.12E-01	1.92E-01	1.92E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	5.00E+00	0.00E+00
Selenium	0.00E+00	mg/L	0.00E+00	mg/kg	1.36E+00	mg/kg	1.00E+00			8.55E-01		5.24E-01	5.46E-01	5.46E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-01	0.00E+00	3.30E-01	0.00E+00
Vanadium	2.00E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	4.46E+02							1.87E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-03	2.10E-01	8.92E-03	2.10E+00	8.92E-04
Zinc	9.32E-02	mg/L	0.00E+00	mg/kg	0.00E+00	mg/kg	1.00E+00	1.22E+03							8.73E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.73E-03	1.60E+02	5.46E-05	3.20E+02	2.73E-05
PCBs																													
Aroclor 1260	0.00E+00	mg/L	1.13E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		3.20E+00		6.40E-04				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-05	0.00E+00	0.00E+00	0.00E+00	2.17E-05	6.80E-02	3.19E-04	6.80E-01	3.19E-05
Semivolatile Organics																													
2-Methylnaphthalene	0.00E+00	mg/L	6.16E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		2.70E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.99E-02	0.00E+00	0.00E+00	0.00E+00	4.99E-02	2.45E+00	2.04E-02	1.23E+01	4.07E-03
Benzo(a)anthracene	0.00E+00	mg/L	1.21E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		1.45E+00		1.57E-01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.70E-03	0.00E+00	0.00E+00	0.00E+00	5.70E-03	1.00E+00	5.70E-03	1.00E+01	5.70E-04
Benzo(b)fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	8.29E-01	mg/kg	1.00E+00			2.10E-01		3.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E+00	0.00E+00	2.00E+01	0.00E+00
Fluoranthene	0.00E+00	mg/L	0.00E+00	mg/kg	1.10E+00	mg/kg	1.00E+00			2.10E-01		5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	1.00E+01	0.00E+00
Indeno(1,2,3-cd)pyrene	0.00E+00	mg/L	0.00E+00	mg/kg	1.03E+00	mg/kg	1.00E+00			5.10E-01		1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.20E+00	0.00E+00	3.60E+01	0.00E+00
Napthalene	0.00E+00	mg/L	3.37E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		4.30E+00		1.22E+01				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E+00	0.00E+00	0.00E+00	0.00E+00	1.23E+00	1.43E+01	8.62E-02	7.15E+01	1.72E-02
Phenanthrene	0.00E+00	mg/L	3.06E-01	mg/kg	0.00E+00	mg/kg	1.00E+00		8.80E-01		1.33E+00				0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-01	0.00E+00	0.00E+00	0.00E+00	1.22E-01	5.14E+00	2.37E-02	2.57E+01	4.74E-03
Pyrene	0.00E+00	mg/L	1.95E-01	mg/kg	7.75E-01	mg/kg	1.00E+00		1.30E+00	4.50E-01	7.20E-01	7.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-02	0.00E+00	0.00E+00	0.00E+00	4.21E-02	7.50E+00	5.61E-03	3.75E+01	1.12E-03

Intake Equation:

$$Ej = \left(\frac{A}{HR} \left[\sum_{i=1}^{m} \left(\frac{IRi \, x Cij}{BW} \right) \right] \right)$$

Where:
Ej = Total Exposure to Chemical
A = Site Area
HR = Home Range
m = Total number of ingested media
i = counter
IRi = Consumption Rate for Medium
Cij = Chemical concentration (j) in medium (I) (mg/kg or mg/L)
BW = Body Weight

Notes:
BAF = Bioaccumulation Factor (may be BCF if this is the only value available)
EED = Estimated Exposure Dose
HQ = Hazard Quotient.
L = LOAEL based; N = NOAEL based
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level
NA = Not applicable/Not available
BAF (or BCF) values from appropriate text tables (BCF = bioconcentration factor)
Some BAF (or BCF) values based on media regression equations (value in box):
LOAEL and NOAEL values from appropriate toxicity summary tables in the text.
UF = Uncertainty Factor for toxicity factor extrapolation, and Adjusted LOAEL or N See appropriate text tables for equations.
A "0" entry in the exposure concentration column indicates this chemical not selected as a COPEC for this medium.
Receptor diet data and home range data from appropriate text table.
Exposure point concentrations (EPCs) from appropriate text tables.

Species-Specific Factors

Terrestrial plant diet fraction =	0	unitless
Aquatic plant diet fraction =	1	unitless
Plant root diet fraction =	0	unitless
Fish diet fraction =	0	unitless
Aq. Invert diet fraction =	0	unitless
Terr. Invert diet fraction =	0	unitless
Bird diet fraction =	0	unitless
Mammal diet fraction =	0	unitless
Soil ingestion rate =	0	kg/d
Sediment ingestion rate =	0	kg/d
Food ingestion rate =	0.352	kg/d
Body weight =	1.174	kg
Home range =	0.3	acres
Water intake rate =	0.11	L/d
Site Area =	2	acres
Area Use Factor (AUF) =	1	unitless
Exposure Frequency (EF) =	1	unitless

APPENDIX F

DATA USED IN THE SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Acenaphthene	83-32-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00739
Acenaphthene	83-32-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00717
Acenaphthene	83-32-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00882
Acenaphthene	83-32-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00755
Acenaphthene	83-32-9	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00873
Acenaphthene	83-32-9	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00696
Acenaphthene	83-32-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00826
Acenaphthene	83-32-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.007255
Acenaphthene	83-32-9	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0427
Acenaphthene	83-32-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00722
Acenaphthene	83-32-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00807
Acenaphthene	83-32-9	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00728
Acenaphthene	83-32-9	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0376
Acenaphthene	83-32-9	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00843
Acenaphthene	83-32-9	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00966
Acenaphthene	83-32-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00727
Acenaphthene	83-32-9	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Acenaphthene	83-32-9	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Acenaphthene	83-32-9	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Acenaphthene	83-32-9	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Acenaphthene	83-32-9	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Acenaphthene	83-32-9	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Acenaphthylene	208-96-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00493
Acenaphthylene	208-96-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00478
Acenaphthylene	208-96-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00588
Acenaphthylene	208-96-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00503
Acenaphthylene	208-96-8	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00582
Acenaphthylene	208-96-8	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00464
Acenaphthylene	208-96-8	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0055
Acenaphthylene	208-96-8	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.004835
Acenaphthylene	208-96-8	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0285
Acenaphthylene	208-96-8	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00481
Acenaphthylene	208-96-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00538
Acenaphthylene	208-96-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00485
Acenaphthylene	208-96-8	0.2785	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.02505
Acenaphthylene	208-96-8	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00562
Acenaphthylene	208-96-8	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00644
Acenaphthylene	208-96-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00485
Acenaphthylene	208-96-8	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Acenaphthylene	208-96-8	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Acenaphthylene	208-96-8	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Acenaphthylene	208-96-8	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Acenaphthylene	208-96-8	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Acenaphthylene	208-96-8	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Aluminum	7429-90-5	6190	mg/kg	3.97	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		1.99
Aluminum	7429-90-5	9230	mg/kg	3.31	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		1.65
Aluminum	7429-90-5	9360	mg/kg	4.61	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		2.3
Aluminum	7429-90-5	8380	mg/kg	3.44	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		1.72
Aluminum	7429-90-5	9940	mg/kg	4.18		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		2.09
Aluminum	7429-90-5	2770	mg/kg	3.92		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		1.96
Aluminum	7429-90-5	12700	mg/kg	4.09		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		2.05
Aluminum	7429-90-5	7125	mg/kg	3.77		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		1.885
Aluminum	7429-90-5	10700	mg/kg	4.12		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		2.06
Aluminum	7429-90-5	6260	mg/kg	3.91		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		1.96
Aluminum	7429-90-5	10500	mg/kg	4.54	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		2.27
Aluminum	7429-90-5	13000	mg/kg	3.61	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		1.81
Aluminum	7429-90-5	7555	mg/kg	3.81		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		1.9
Aluminum	7429-90-5	6700	mg/kg	3.87	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		1.94
Aluminum	7429-90-5	7650	mg/kg	4.84	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		2.42
Aluminum	7429-90-5	7640	mg/kg	3.35	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		1.68
Aluminum	7429-90-5	7550	mg/kg	28.25		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		28.25
Aluminum	7429-90-5	12700	mg/kg	26.2		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		26.2
Aluminum	7429-90-5	8310	mg/kg	33.4		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		33.4
Aluminum	7429-90-5	12600	mg/kg	25.3		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		25.3
Aluminum	7429-90-5	8820	mg/kg	25.9		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		25.9
Aluminum	7429-90-5	16600	mg/kg	48.9		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		48.9
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Anthracene	120-12-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00887
Anthracene	120-12-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0086
Anthracene	120-12-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0106
Anthracene	120-12-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00906
Anthracene	120-12-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0105
Anthracene	120-12-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00836
Anthracene	120-12-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00991
Anthracene	120-12-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0087
Anthracene	120-12-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0513
Anthracene	120-12-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00867
Anthracene	120-12-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00968
Anthracene	120-12-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00874
Anthracene	120-12-7	0.2155	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.0451
Anthracene	120-12-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0101
Anthracene	120-12-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0116
Anthracene	120-12-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00872
Anthracene	120-12-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Anthracene	120-12-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Anthracene	120-12-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Anthracene	120-12-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Anthracene	120-12-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Anthracene	120-12-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Antimony	7440-36-0	0.23	mg/kg	0.46	UJ	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.23
Antimony	7440-36-0	0.258	mg/kg	0.514	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	J	0.257
Antimony	7440-36-0	0.2975	mg/kg	0.595	UJ	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	U	0.297
Antimony	7440-36-0	0.294	mg/kg	0.479	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	J	0.239
Antimony	7440-36-0	0.347	mg/kg	0.526	J	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1	J	0.263
Antimony	7440-36-0	0.2245	mg/kg	0.449	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.224
Antimony	7440-36-0	0.352	mg/kg	0.531	J	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	J	0.266
Antimony	7440-36-0	0.2115	mg/kg	0.423	UU	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4	UU	0.2115
Antimony	7440-36-0	0.416	mg/kg	0.551	J	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	J	0.276
Antimony	7440-36-0	0.2405	mg/kg	0.481	U	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	U	0.241
Antimony	7440-36-0	0.2885	mg/kg	0.577	UJ	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.288
Antimony	7440-36-0	0.2275	mg/kg	0.455	UJ	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	U	0.227
Antimony	7440-36-0	0.838	mg/kg	0.476		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.2375
Antimony	7440-36-0	0.348	mg/kg	0.531	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	J	0.265
Antimony	7440-36-0	0.305	mg/kg	0.61	UJ	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.305
Antimony	7440-36-0	0.2335	mg/kg	0.467	UJ	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	U	0.233
Antimony	7440-36-0	0.7	mg/kg	1.4	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	1.4
Antimony	7440-36-0	1.3	mg/kg	2.6	U,G	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U,G	2.6
Antimony	7440-36-0	0.85	mg/kg	1.7	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	1.7
Antimony	7440-36-0	0.65	mg/kg	1.3	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	1.3
Antimony	7440-36-0	0.65	mg/kg	1.3	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	1.3
Antimony	7440-36-0	1.2	mg/kg	2.4	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	2.4
Aroclor 1016	12674-11-2	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1016	12674-11-2	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1016	12674-11-2	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1016	12674-11-2	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1016	12674-11-2	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1016	12674-11-2	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1016	12674-11-2	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1016	12674-11-2	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Aroclor 1016	12674-11-2	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1016	12674-11-2	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1221	11104-28-2	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1221	11104-28-2	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1221	11104-28-2	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1221	11104-28-2	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1221	11104-28-2	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1221	11104-28-2	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1221	11104-28-2	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1221	11104-28-2	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1221	11104-28-2	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1221	11104-28-2	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1221	11104-28-2	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1221	11104-28-2	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1221	11104-28-2	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476
Aroclor 1221	11104-28-2	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Aroclor 1221	11104-28-2	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1232	11141-16-5	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1232	11141-16-5	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1232	11141-16-5	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1232	11141-16-5	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1232	11141-16-5	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1232	11141-16-5	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1232	11141-16-5	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1232	11141-16-5	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1232	11141-16-5	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1232	11141-16-5	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1232	11141-16-5	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1232	11141-16-5	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1232	11141-16-5	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476
Aroclor 1232	11141-16-5	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Aroclor 1232	11141-16-5	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1242	53469-21-9	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1242	53469-21-9	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1242	53469-21-9	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1242	53469-21-9	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1242	53469-21-9	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1242	53469-21-9	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1242	53469-21-9	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1242	53469-21-9	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1242	53469-21-9	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1242	53469-21-9	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1242	53469-21-9	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1242	53469-21-9	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1242	53469-21-9	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476
Aroclor 1242	53469-21-9	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Aroclor 1242	53469-21-9	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1248	12672-29-6	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1248	12672-29-6	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1248	12672-29-6	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1248	12672-29-6	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1248	12672-29-6	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1248	12672-29-6	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1248	12672-29-6	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1248	12672-29-6	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1248	12672-29-6	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1248	12672-29-6	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1248	12672-29-6	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1248	12672-29-6	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1248	12672-29-6	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476
Aroclor 1248	12672-29-6	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Aroclor 1248	12672-29-6	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1254	11097-69-1	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1254	11097-69-1	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1254	11097-69-1	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1254	11097-69-1	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1254	11097-69-1	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1254	11097-69-1	0.1145	mg/kg	0.229	U	ASH PIT 1-SB04	AP0010	PCBS	REG	9-Dec-08	0	1	U	0.0459
Aroclor 1254	11097-69-1	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1254	11097-69-1	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1254	11097-69-1	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1254	11097-69-1	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1254	11097-69-1	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1254	11097-69-1	0.105	mg/kg	0.21	UU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	UU	0.04205
Aroclor 1254	11097-69-1	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Aroclor 1254	11097-69-1	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Aroclor 1254	11097-69-1	0.1	mg/kg	0.2	U	ASH PIT 1-SB09	AP0027	PCBS	REG	8-Dec-08	3	4	U	0.04
Aroclor 1260	11096-82-5	0.101	mg/kg	0.202	U	ASH PIT 1-SB01	AP0001	PCBS	REG	8-Dec-08	0.5	1.5	U	0.0404
Aroclor 1260	11096-82-5	0.1005	mg/kg	0.201	U	ASH PIT 1-SB01	AP0002	PCBS	REG	8-Dec-08	3.5	5.5	U	0.0402
Aroclor 1260	11096-82-5	0.1215	mg/kg	0.243	U	ASH PIT 1-SB02	AP0004	PCBS	REG	8-Dec-08	0	1	U	0.0487
Aroclor 1260	11096-82-5	0.1215	mg/kg	0.243	U	ASH PIT 1-SB03	AP0007	PCBS	REG	9-Dec-08	0	1	U	0.0487
Aroclor 1260	11096-82-5	0.0955	mg/kg	0.191	U	ASH PIT 1-SB03	AP0008	PCBS	REG	9-Dec-08	3	5	U	0.0382
Aroclor 1260	11096-82-5	0.02	mg/kg	0.04	UU	ASH PIT 1-SB04	AP0011AP0012	PEST/PCB	AVGD	39791	3	4	UU	#DIV/0!
Aroclor 1260	11096-82-5	0.1185	mg/kg	0.237	U	ASH PIT 1-SB05	AP0014	PCBS	REG	9-Dec-08	0	1	U	0.0475
Aroclor 1260	11096-82-5	0.101	mg/kg	0.202	U	ASH PIT 1-SB05	AP0015	PCBS	REG	9-Dec-08	3	3.7	U	0.0404
Aroclor 1260	11096-82-5	0.114	mg/kg	0.228	U	ASH PIT 1-SB06	AP0017	PCBS	REG	8-Dec-08	0.8	1.8	U	0.0456
Aroclor 1260	11096-82-5	0.1025	mg/kg	0.205	U	ASH PIT 1-SB06	AP0018	PCBS	REG	8-Dec-08	5	5.8	U	0.0411
Aroclor 1260	11096-82-5	0.1025	mg/kg	0.21	JU	ASH PIT 1-SB08	AP0023AP0063	PCBS	AVGD	39791	0	1	JU	0.04205
Aroclor 1260	11096-82-5	0.119	mg/kg	0.238	U	ASH PIT 1-SB08	AP0024	PCBS	REG	9-Dec-08	3	5	U	0.0476
Aroclor 1260	11096-82-5	0.1345	mg/kg	0.269	U	ASH PIT 1-SB09	AP0026	PCBS	REG	8-Dec-08	0	1	U	0.0539
Arsenic	7440-38-2	6.7	mg/kg	0.919	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.46
Arsenic	7440-38-2	8.3	mg/kg	1.03	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.514
Arsenic	7440-38-2	9.14	mg/kg	1.19	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.595
Arsenic	7440-38-2	6.17	mg/kg	0.957	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.479
Arsenic	7440-38-2	13.2	mg/kg	1.05		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.526
Arsenic	7440-38-2	5.62	mg/kg	0.898		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.449
Arsenic	7440-38-2	11.7	mg/kg	1.06		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.531
Arsenic	7440-38-2	3.57	mg/kg	0.8455		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.423
Arsenic	7440-38-2	9.06	mg/kg	1.1		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.551
Arsenic	7440-38-2	11.6	mg/kg	0.962		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.481
Arsenic	7440-38-2	6.4	mg/kg	1.15	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.577
Arsenic	7440-38-2	7.53	mg/kg	0.909	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.455
Arsenic	7440-38-2	10.95	mg/kg	0.9515		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.476
Arsenic	7440-38-2	9.98	mg/kg	1.06	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.531
Arsenic	7440-38-2	12.6	mg/kg	1.22	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.61
Arsenic	7440-38-2	5.13	mg/kg	0.933	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.467
Arsenic	7440-38-2	8.1	mg/kg	1.4		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		1.4
Arsenic	7440-38-2	19.6	mg/kg	2.6		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		2.6
Arsenic	7440-38-2	9.4	mg/kg	1.7		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		1.7
Arsenic	7440-38-2	15.8	mg/kg	1.3		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		1.3
Arsenic	7440-38-2	14	mg/kg	1.3		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		1.3
Arsenic	7440-38-2	31.2	mg/kg	2.4		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		2.4
Barium	7440-39-3	32.7	mg/kg	0.199	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.0993
Barium	7440-39-3	37.7	mg/kg	0.165	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.0826
Barium	7440-39-3	83.3	mg/kg	0.23	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.115
Barium	7440-39-3	35.9	mg/kg	0.172	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.0861
Barium	7440-39-3	107	mg/kg	0.209		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.105
Barium	7440-39-3	13	mg/kg	0.196		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.098
Barium	7440-39-3	105	mg/kg	0.205		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.102
Barium	7440-39-3	92.4	mg/kg	0.1885		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.09425
Barium	7440-39-3	82.7	mg/kg	0.206		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.103
Barium	7440-39-3	168	mg/kg	0.196		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0978
Barium	7440-39-3	62.6	mg/kg	0.227	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.113
Barium	7440-39-3	73.6	mg/kg	0.181	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.0903
Barium	7440-39-3	84.4	mg/kg	0.19		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.09535
Barium	7440-39-3	109	mg/kg	0.194		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0969
Barium	7440-39-3	84.9	mg/kg	0.242	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.121
Barium	7440-39-3	39	mg/kg	0.168	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.0838
Barium	7440-39-3	43	mg/kg	28.25		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		28.25
Barium	7440-39-3	163	mg/kg	26.2		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		26.2
Barium	7440-39-3	41.3	mg/kg	33.4		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		33.4
Barium	7440-39-3	78.9	mg/kg	25.3		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		25.3
Barium	7440-39-3	160	mg/kg	25.9		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		25.9
Barium	7440-39-3	132	mg/kg	48.9		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		48.9
Benzo(a)anthracene	56-55-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.027
Benzo(a)anthracene	56-55-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0262
Benzo(a)anthracene	56-55-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0322
Benzo(a)anthracene	56-55-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0275
Benzo(a)anthracene	56-55-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0319
Benzo(a)anthracene	56-55-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0254
Benzo(a)anthracene	56-55-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0301
Benzo(a)anthracene	56-55-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.02645
Benzo(a)anthracene	56-55-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.156
Benzo(a)anthracene	56-55-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0264
Benzo(a)anthracene	56-55-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0294
Benzo(a)anthracene	56-55-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0266
Benzo(a)anthracene	56-55-3	0.8555	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.137
Benzo(a)anthracene	56-55-3	0.0642	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0308
Benzo(a)anthracene	56-55-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0353
Benzo(a)anthracene	56-55-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0265

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Benzo(a)anthracene	56-55-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Benzo(a)anthracene	56-55-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(a)anthracene	56-55-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Benzo(a)anthracene	56-55-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Benzo(a)anthracene	56-55-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(a)anthracene	56-55-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Benzo(a)pyrene	50-32-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.027
Benzo(a)pyrene	50-32-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0262
Benzo(a)pyrene	50-32-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0322
Benzo(a)pyrene	50-32-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0275
Benzo(a)pyrene	50-32-8	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0319
Benzo(a)pyrene	50-32-8	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0254
Benzo(a)pyrene	50-32-8	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0301
Benzo(a)pyrene	50-32-8	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.02645
Benzo(a)pyrene	50-32-8	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.156
Benzo(a)pyrene	50-32-8	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0264
Benzo(a)pyrene	50-32-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0294
Benzo(a)pyrene	50-32-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0266
Benzo(a)pyrene	50-32-8	0.721	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.137
Benzo(a)pyrene	50-32-8	0.0534	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0308
Benzo(a)pyrene	50-32-8	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0353
Benzo(a)pyrene	50-32-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0265
Benzo(a)pyrene	50-32-8	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Benzo(a)pyrene	50-32-8	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(a)pyrene	50-32-8	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Benzo(a)pyrene	50-32-8	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Benzo(a)pyrene	50-32-8	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(a)pyrene	50-32-8	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Benzo(b)fluoranthene	205-99-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0684
Benzo(b)fluoranthene	205-99-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0663
Benzo(b)fluoranthene	205-99-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0816
Benzo(b)fluoranthene	205-99-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0698
Benzo(b)fluoranthene	205-99-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0808
Benzo(b)fluoranthene	205-99-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0644
Benzo(b)fluoranthene	205-99-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0764
Benzo(b)fluoranthene	205-99-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.06705
Benzo(b)fluoranthene	205-99-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.395
Benzo(b)fluoranthene	205-99-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0668
Benzo(b)fluoranthene	205-99-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0746
Benzo(b)fluoranthene	205-99-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0674
Benzo(b)fluoranthene	205-99-2	1.205	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.3475
Benzo(b)fluoranthene	205-99-2	0.0829	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.078
Benzo(b)fluoranthene	205-99-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0894
Benzo(b)fluoranthene	205-99-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0672
Benzo(b)fluoranthene	205-99-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Benzo(b)fluoranthene	205-99-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(b)fluoranthene	205-99-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Benzo(b)fluoranthene	205-99-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Benzo(b)fluoranthene	205-99-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(b)fluoranthene	205-99-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Benzo(ghi)perylene	191-24-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.1
Benzo(ghi)perylene	191-24-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.097
Benzo(ghi)perylene	191-24-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.119
Benzo(ghi)perylene	191-24-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.102
Benzo(ghi)perylene	191-24-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.118
Benzo(ghi)perylene	191-24-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0942
Benzo(ghi)perylene	191-24-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.112
Benzo(ghi)perylene	191-24-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.09815
Benzo(ghi)perylene	191-24-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.578
Benzo(ghi)perylene	191-24-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0977
Benzo(ghi)perylene	191-24-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.109
Benzo(ghi)perylene	191-24-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0985
Benzo(ghi)perylene	191-24-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.509
Benzo(ghi)perylene	191-24-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.114
Benzo(ghi)perylene	191-24-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.131
Benzo(ghi)perylene	191-24-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0984
Benzo(ghi)perylene	191-24-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Benzo(ghi)perylene	191-24-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(ghi)perylene	191-24-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Benzo(ghi)perylene	191-24-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Benzo(ghi)perylene	191-24-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(ghi)perylene	191-24-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Benzo(k)fluoranthene	207-08-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.124
Benzo(k)fluoranthene	207-08-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.121
Benzo(k)fluoranthene	207-08-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.148

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Benzo(k)fluoranthene	207-08-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.127
Benzo(k)fluoranthene	207-08-9	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.147
Benzo(k)fluoranthene	207-08-9	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.117
Benzo(k)fluoranthene	207-08-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.139
Benzo(k)fluoranthene	207-08-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.122
Benzo(k)fluoranthene	207-08-9	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.719
Benzo(k)fluoranthene	207-08-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.122
Benzo(k)fluoranthene	207-08-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.136
Benzo(k)fluoranthene	207-08-9	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.123
Benzo(k)fluoranthene	207-08-9	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.633
Benzo(k)fluoranthene	207-08-9	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.142
Benzo(k)fluoranthene	207-08-9	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.163
Benzo(k)fluoranthene	207-08-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.122
Benzo(k)fluoranthene	207-08-9	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Benzo(k)fluoranthene	207-08-9	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(k)fluoranthene	207-08-9	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Benzo(k)fluoranthene	207-08-9	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Benzo(k)fluoranthene	207-08-9	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Benzo(k)fluoranthene	207-08-9	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Benzoic acid	65-85-0	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.1
Benzoic acid	65-85-0	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.097
Benzoic acid	65-85-0	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.119
Benzoic acid	65-85-0	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.102
Benzoic acid	65-85-0	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.118
Benzoic acid	65-85-0	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0942
Benzoic acid	65-85-0	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.112
Benzoic acid	65-85-0	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.09815
Benzoic acid	65-85-0	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.578
Benzoic acid	65-85-0	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0977
Benzoic acid	65-85-0	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.109
Benzoic acid	65-85-0	0.202	mg/kg	0.404	UJ	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0985
Benzoic acid	65-85-0	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.509
Benzoic acid	65-85-0	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.114
Benzoic acid	65-85-0	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.131
Benzoic acid	65-85-0	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0984
Benzyl alcohol	100-51-6	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.1
Benzyl alcohol	100-51-6	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.097
Benzyl alcohol	100-51-6	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.119
Benzyl alcohol	100-51-6	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.102
Benzyl alcohol	100-51-6	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.118
Benzyl alcohol	100-51-6	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0942
Benzyl alcohol	100-51-6	0.229	mg/kg	0.458	UJ	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.112
Benzyl alcohol	100-51-6	0.2013	mg/kg	0.4025	UJUJ	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.09815
Benzyl alcohol	100-51-6	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.578
Benzyl alcohol	100-51-6	0.2005	mg/kg	0.401	UJ	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0977
Benzyl alcohol	100-51-6	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.109
Benzyl alcohol	100-51-6	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0985
Benzyl alcohol	100-51-6	1.0425	mg/kg	2.085	UJUJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.509
Benzyl alcohol	100-51-6	0.234	mg/kg	0.468	UJ	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.114
Benzyl alcohol	100-51-6	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.131
Benzyl alcohol	100-51-6	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0984
Beryllium	7440-41-7	5.74	mg/kg	0.199	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.0993
Beryllium	7440-41-7	4.87	mg/kg	0.165	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.0826
Beryllium	7440-41-7	10.8	mg/kg	0.23	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.115
Beryllium	7440-41-7	5.99	mg/kg	0.172	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.0861
Beryllium	7440-41-7	13.9	mg/kg	0.209	J	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.105
Beryllium	7440-41-7	3.62	mg/kg	0.196	J	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.098
Beryllium	7440-41-7	16.5	mg/kg	0.205	J	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.102
Beryllium	7440-41-7	7.305	mg/kg	0.1885	JJ	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.09425
Beryllium	7440-41-7	13.6	mg/kg	0.206	J	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.103
Beryllium	7440-41-7	12.9	mg/kg	0.196	J	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0978
Beryllium	7440-41-7	11.5	mg/kg	0.227	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.113
Beryllium	7440-41-7	6.55	mg/kg	0.181	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.0903
Beryllium	7440-41-7	11.1	mg/kg	0.19	JJ	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.09535
Beryllium	7440-41-7	11.5	mg/kg	0.194	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0969
Beryllium	7440-41-7	8.94	mg/kg	0.242	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.121
Beryllium	7440-41-7	5.85	mg/kg	0.168	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.0838
Beryllium	7440-41-7	0.355	mg/kg	0.71	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	0.71
Beryllium	7440-41-7	0.325	mg/kg	0.65	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U	0.65
Beryllium	7440-41-7	0.42	mg/kg	0.84	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	0.84
Beryllium	7440-41-7	0.315	mg/kg	0.63	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	0.63
Beryllium	7440-41-7	0.325	mg/kg	0.65	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	0.65
Beryllium	7440-41-7	1.5	mg/kg	1.2		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		1.2
Bis(2-chloroethoxy)methane	111-91-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00863
Bis(2-chloroethoxy)methane	111-91-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00837

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Bis(2-chloroethoxy)methane	111-91-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0103
Bis(2-chloroethoxy)methane	111-91-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00881
Bis(2-chloroethoxy)methane	111-91-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0102
Bis(2-chloroethoxy)methane	111-91-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00812
Bis(2-chloroethoxy)methane	111-91-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00963
Bis(2-chloroethoxy)methane	111-91-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00846
Bis(2-chloroethoxy)methane	111-91-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0498
Bis(2-chloroethoxy)methane	111-91-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00843
Bis(2-chloroethoxy)methane	111-91-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00941
Bis(2-chloroethoxy)methane	111-91-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0085
Bis(2-chloroethoxy)methane	111-91-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.04385
Bis(2-chloroethoxy)methane	111-91-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00984
Bis(2-chloroethoxy)methane	111-91-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0113
Bis(2-chloroethoxy)methane	111-91-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00848
Bis(2-chloroethoxy)methane	111-91-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Bis(2-chloroethoxy)methane	111-91-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroethoxy)methane	111-91-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Bis(2-chloroethoxy)methane	111-91-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Bis(2-chloroethoxy)methane	111-91-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroethoxy)methane	111-91-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Bis(2-chloroethyl)ether	111-44-4	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0105
Bis(2-chloroethyl)ether	111-44-4	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0102
Bis(2-chloroethyl)ether	111-44-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0125
Bis(2-chloroethyl)ether	111-44-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0107
Bis(2-chloroethyl)ether	111-44-4	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0124
Bis(2-chloroethyl)ether	111-44-4	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00986
Bis(2-chloroethyl)ether	111-44-4	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0117
Bis(2-chloroethyl)ether	111-44-4	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0103
Bis(2-chloroethyl)ether	111-44-4	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0605
Bis(2-chloroethyl)ether	111-44-4	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0102
Bis(2-chloroethyl)ether	111-44-4	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0114
Bis(2-chloroethyl)ether	111-44-4	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0103
Bis(2-chloroethyl)ether	111-44-4	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.05325
Bis(2-chloroethyl)ether	111-44-4	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0119
Bis(2-chloroethyl)ether	111-44-4	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0137
Bis(2-chloroethyl)ether	111-44-4	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0103
Bis(2-chloroethyl)ether	111-44-4	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Bis(2-chloroethyl)ether	111-44-4	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroethyl)ether	111-44-4	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Bis(2-chloroethyl)ether	111-44-4	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Bis(2-chloroethyl)ether	111-44-4	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroethyl)ether	111-44-4	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Bis(2-chloroisopropyl)ether	108-60-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0179
Bis(2-chloroisopropyl)ether	108-60-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0173
Bis(2-chloroisopropyl)ether	108-60-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0213
Bis(2-chloroisopropyl)ether	108-60-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0182
Bis(2-chloroisopropyl)ether	108-60-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0211
Bis(2-chloroisopropyl)ether	108-60-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0168
Bis(2-chloroisopropyl)ether	108-60-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.02
Bis(2-chloroisopropyl)ether	108-60-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0175
Bis(2-chloroisopropyl)ether	108-60-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.103
Bis(2-chloroisopropyl)ether	108-60-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0175
Bis(2-chloroisopropyl)ether	108-60-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0195
Bis(2-chloroisopropyl)ether	108-60-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0176
Bis(2-chloroisopropyl)ether	108-60-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0909
Bis(2-chloroisopropyl)ether	108-60-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0204
Bis(2-chloroisopropyl)ether	108-60-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0234
Bis(2-chloroisopropyl)ether	108-60-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0176
Bis(2-chloroisopropyl)ether	108-60-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Bis(2-chloroisopropyl)ether	108-60-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroisopropyl)ether	108-60-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Bis(2-chloroisopropyl)ether	108-60-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Bis(2-chloroisopropyl)ether	108-60-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-chloroisopropyl)ether	108-60-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Bis(2-ethylhexyl)phthalate	117-81-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.038
Bis(2-ethylhexyl)phthalate	117-81-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0368
Bis(2-ethylhexyl)phthalate	117-81-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0453
Bis(2-ethylhexyl)phthalate	117-81-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0387
Bis(2-ethylhexyl)phthalate	117-81-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0448
Bis(2-ethylhexyl)phthalate	117-81-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0357
Bis(2-ethylhexyl)phthalate	117-81-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0424
Bis(2-ethylhexyl)phthalate	117-81-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.03725
Bis(2-ethylhexyl)phthalate	117-81-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.219
Bis(2-ethylhexyl)phthalate	117-81-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0371
Bis(2-ethylhexyl)phthalate	117-81-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0414

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Bis(2-ethylhexyl)phthalate	117-81-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0374
Bis(2-ethylhexyl)phthalate	117-81-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.193
Bis(2-ethylhexyl)phthalate	117-81-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0433
Bis(2-ethylhexyl)phthalate	117-81-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0496
Bis(2-ethylhexyl)phthalate	117-81-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0373
Bis(2-ethylhexyl)phthalate	117-81-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Bis(2-ethylhexyl)phthalate	117-81-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-ethylhexyl)phthalate	117-81-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Bis(2-ethylhexyl)phthalate	117-81-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Bis(2-ethylhexyl)phthalate	117-81-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bis(2-ethylhexyl)phthalate	117-81-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Bromophenyl phenyl ether, 4-	101-55-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0147
Bromophenyl phenyl ether, 4-	101-55-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0142
Bromophenyl phenyl ether, 4-	101-55-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0175
Bromophenyl phenyl ether, 4-	101-55-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.015
Bromophenyl phenyl ether, 4-	101-55-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0173
Bromophenyl phenyl ether, 4-	101-55-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0138
Bromophenyl phenyl ether, 4-	101-55-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0164
Bromophenyl phenyl ether, 4-	101-55-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0144
Bromophenyl phenyl ether, 4-	101-55-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0847
Bromophenyl phenyl ether, 4-	101-55-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0143
Bromophenyl phenyl ether, 4-	101-55-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.016
Bromophenyl phenyl ether, 4-	101-55-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0144
Bromophenyl phenyl ether, 4-	101-55-3	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07455
Bromophenyl phenyl ether, 4-	101-55-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0167
Bromophenyl phenyl ether, 4-	101-55-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0192
Bromophenyl phenyl ether, 4-	101-55-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0144
Bromophenyl phenyl ether, 4-	101-55-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Bromophenyl phenyl ether, 4-	101-55-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bromophenyl phenyl ether, 4-	101-55-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Bromophenyl phenyl ether, 4-	101-55-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Bromophenyl phenyl ether, 4-	101-55-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Bromophenyl phenyl ether, 4-	101-55-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Butyl benzyl phthalate	85-68-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0166
Butyl benzyl phthalate	85-68-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0161
Butyl benzyl phthalate	85-68-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0198
Butyl benzyl phthalate	85-68-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.017
Butyl benzyl phthalate	85-68-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0196
Butyl benzyl phthalate	85-68-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0157
Butyl benzyl phthalate	85-68-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0186
Butyl benzyl phthalate	85-68-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0163
Butyl benzyl phthalate	85-68-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0961
Butyl benzyl phthalate	85-68-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0163
Butyl benzyl phthalate	85-68-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0181
Butyl benzyl phthalate	85-68-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0164
Butyl benzyl phthalate	85-68-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.08465
Butyl benzyl phthalate	85-68-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.019
Butyl benzyl phthalate	85-68-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0217
Butyl benzyl phthalate	85-68-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0164
Butyl benzyl phthalate	85-68-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Butyl benzyl phthalate	85-68-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Butyl benzyl phthalate	85-68-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Butyl benzyl phthalate	85-68-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Butyl benzyl phthalate	85-68-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Butyl benzyl phthalate	85-68-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Cadmium	7440-43-9	0.23	mg/kg	0.46	U	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.23
Cadmium	7440-43-9	0.257	mg/kg	0.514	U	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	U	0.257
Cadmium	7440-43-9	0.2975	mg/kg	0.595	U	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	U	0.297
Cadmium	7440-43-9	0.345	mg/kg	0.479	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	J	0.239
Cadmium	7440-43-9	0.263	mg/kg	0.526	U	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1	U	0.263
Cadmium	7440-43-9	0.2245	mg/kg	0.449	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.224
Cadmium	7440-43-9	0.2655	mg/kg	0.531	U	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	U	0.266
Cadmium	7440-43-9	0.2815	mg/kg	0.423	JJ	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4	JJ	0.2115
Cadmium	7440-43-9	0.2755	mg/kg	0.551	U	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	U	0.276
Cadmium	7440-43-9	0.269	mg/kg	0.481	J	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	J	0.241
Cadmium	7440-43-9	0.2885	mg/kg	0.577	U	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.288
Cadmium	7440-43-9	0.2275	mg/kg	0.455	U	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	U	0.227
Cadmium	7440-43-9	0.2603	mg/kg	0.476	JU	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1	JU	0.2375
Cadmium	7440-43-9	0.2655	mg/kg	0.531	U	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	U	0.265
Cadmium	7440-43-9	0.305	mg/kg	0.61	U	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.305
Cadmium	7440-43-9	0.2335	mg/kg	0.467	U	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	U	0.233
Cadmium	7440-43-9	0.14	mg/kg	0.28	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	0.28
Cadmium	7440-43-9	0.26	mg/kg	0.52	U,G	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U,G	0.52
Cadmium	7440-43-9	0.165	mg/kg	0.33	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	0.33
Cadmium	7440-43-9	0.125	mg/kg	0.25	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	0.25

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Cadmium	7440-43-9	0.13	mg/kg	0.26	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	0.26
Cadmium	7440-43-9	0.245	mg/kg	0.49	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	0.49
Calcium	7440-70-2	14400	mg/kg	9.93		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		4.96
Calcium	7440-70-2	35200	mg/kg	8.26		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		4.13
Calcium	7440-70-2	18800	mg/kg	11.5		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		5.76
Calcium	7440-70-2	46600	mg/kg	8.61		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		4.31
Calcium	7440-70-2	9390	mg/kg	5.23		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		2.61
Calcium	7440-70-2	26700	mg/kg	4.9		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		2.45
Calcium	7440-70-2	3330	mg/kg	5.11		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		2.56
Calcium	7440-70-2	2680	mg/kg	4.715		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		2.355
Calcium	7440-70-2	35100	mg/kg	5.16		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		2.58
Calcium	7440-70-2	2960	mg/kg	4.89		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		2.44
Calcium	7440-70-2	4580	mg/kg	11.3		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		5.67
Calcium	7440-70-2	37800	mg/kg	9.03		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		4.51
Calcium	7440-70-2	12400	mg/kg	4.76		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		2.38
Calcium	7440-70-2	5380	mg/kg	4.84	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		2.42
Calcium	7440-70-2	15600	mg/kg	12.1		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		6.05
Calcium	7440-70-2	46200	mg/kg	8.38		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		4.19
Calcium	7440-70-2	3840	mg/kg	707		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		707
Calcium	7440-70-2	6600	mg/kg	654		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		654
Calcium	7440-70-2	5590	mg/kg	835		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		835
Calcium	7440-70-2	3770	mg/kg	632		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		632
Calcium	7440-70-2	6080	mg/kg	648		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		648
Calcium	7440-70-2	59100	mg/kg	1220		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		1220
Carbazole	86-74-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.041
Carbazole	86-74-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0398
Carbazole	86-74-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.049
Carbazole	86-74-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0419
Carbazole	86-74-8	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0485
Carbazole	86-74-8	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0386
Carbazole	86-74-8	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0458
Carbazole	86-74-8	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.04025
Carbazole	86-74-8	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.237
Carbazole	86-74-8	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0401
Carbazole	86-74-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0448
Carbazole	86-74-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0404
Carbazole	86-74-8	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.2085
Carbazole	86-74-8	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0468
Carbazole	86-74-8	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0536
Carbazole	86-74-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0403
Carbazole	86-74-8	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Carbazole	86-74-8	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Carbazole	86-74-8	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Carbazole	86-74-8	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Carbazole	86-74-8	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Carbazole	86-74-8	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chloro-3-methylphenol, 4-	59-50-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0101
Chloro-3-methylphenol, 4-	59-50-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0098
Chloro-3-methylphenol, 4-	59-50-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0121
Chloro-3-methylphenol, 4-	59-50-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0103
Chloro-3-methylphenol, 4-	59-50-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0119
Chloro-3-methylphenol, 4-	59-50-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00952
Chloro-3-methylphenol, 4-	59-50-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0113
Chloro-3-methylphenol, 4-	59-50-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00991
Chloro-3-methylphenol, 4-	59-50-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0584
Chloro-3-methylphenol, 4-	59-50-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00987
Chloro-3-methylphenol, 4-	59-50-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.011
Chloro-3-methylphenol, 4-	59-50-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00995
Chloro-3-methylphenol, 4-	59-50-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0514
Chloro-3-methylphenol, 4-	59-50-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0115
Chloro-3-methylphenol, 4-	59-50-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0132
Chloro-3-methylphenol, 4-	59-50-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00993
Chloro-3-methylphenol, 4-	59-50-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chloro-3-methylphenol, 4-	59-50-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloro-3-methylphenol, 4-	59-50-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chloro-3-methylphenol, 4-	59-50-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chloro-3-methylphenol, 4-	59-50-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloro-3-methylphenol, 4-	59-50-7	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chloroaniline, 4-	106-47-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0356
Chloroaniline, 4-	106-47-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0345
Chloroaniline, 4-	106-47-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0425
Chloroaniline, 4-	106-47-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0364
Chloroaniline, 4-	106-47-8	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0421
Chloroaniline, 4-	106-47-8	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0335
Chloroaniline, 4-	106-47-8	0.229	mg/kg	0.458	UJ	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0398

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Chloroaniline, 4-	106-47-8	0.2013	mg/kg	0.4025	UJUJ	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.03495
Chloroaniline, 4-	106-47-8	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.206
Chloroaniline, 4-	106-47-8	0.2005	mg/kg	0.401	UJ	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0348
Chloroaniline, 4-	106-47-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0389
Chloroaniline, 4-	106-47-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0351
Chloroaniline, 4-	106-47-8	1.0425	mg/kg	2.085	UJUJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.181
Chloroaniline, 4-	106-47-8	0.234	mg/kg	0.468	UJ	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0406
Chloroaniline, 4-	106-47-8	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0465
Chloroaniline, 4-	106-47-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.035
Chloroaniline, 4-	106-47-8	0.2325	mg/kg	0.465	UJUJ	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chloroaniline, 4-	106-47-8	0.215	mg/kg	0.43	UJ	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloroaniline, 4-	106-47-8	0.275	mg/kg	0.55	UJ	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chloroaniline, 4-	106-47-8	0.21	mg/kg	0.42	UJ	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chloroaniline, 4-	106-47-8	0.215	mg/kg	0.43	UJ	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloroaniline, 4-	106-47-8	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chloronaphthalene, 2-	91-58-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00653
Chloronaphthalene, 2-	91-58-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00633
Chloronaphthalene, 2-	91-58-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00779
Chloronaphthalene, 2-	91-58-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00667
Chloronaphthalene, 2-	91-58-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00771
Chloronaphthalene, 2-	91-58-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00615
Chloronaphthalene, 2-	91-58-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00729
Chloronaphthalene, 2-	91-58-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.006405
Chloronaphthalene, 2-	91-58-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0377
Chloronaphthalene, 2-	91-58-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00638
Chloronaphthalene, 2-	91-58-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00712
Chloronaphthalene, 2-	91-58-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00643
Chloronaphthalene, 2-	91-58-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0332
Chloronaphthalene, 2-	91-58-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00745
Chloronaphthalene, 2-	91-58-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00854
Chloronaphthalene, 2-	91-58-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00642
Chloronaphthalene, 2-	91-58-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chloronaphthalene, 2-	91-58-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloronaphthalene, 2-	91-58-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chloronaphthalene, 2-	91-58-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chloronaphthalene, 2-	91-58-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chloronaphthalene, 2-	91-58-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chlorophenol, 2-	95-57-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00505
Chlorophenol, 2-	95-57-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0049
Chlorophenol, 2-	95-57-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00603
Chlorophenol, 2-	95-57-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00516
Chlorophenol, 2-	95-57-8	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00597
Chlorophenol, 2-	95-57-8	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00476
Chlorophenol, 2-	95-57-8	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00564
Chlorophenol, 2-	95-57-8	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.004955
Chlorophenol, 2-	95-57-8	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0292
Chlorophenol, 2-	95-57-8	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00494
Chlorophenol, 2-	95-57-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00551
Chlorophenol, 2-	95-57-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00498
Chlorophenol, 2-	95-57-8	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0257
Chlorophenol, 2-	95-57-8	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00576
Chlorophenol, 2-	95-57-8	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0066
Chlorophenol, 2-	95-57-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00497
Chlorophenol, 2-	95-57-8	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chlorophenol, 2-	95-57-8	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chlorophenol, 2-	95-57-8	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chlorophenol, 2-	95-57-8	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chlorophenol, 2-	95-57-8	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chlorophenol, 2-	95-57-8	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chlorophenyl phenyl ether, 4-	7005-72-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0314
Chlorophenyl phenyl ether, 4-	7005-72-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0305
Chlorophenyl phenyl ether, 4-	7005-72-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0375
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0321
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0371
Chlorophenyl phenyl ether, 4-	7005-72-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0296
Chlorophenyl phenyl ether, 4-	7005-72-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0351
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0308
Chlorophenyl phenyl ether, 4-	7005-72-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.182
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0307
Chlorophenyl phenyl ether, 4-	7005-72-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0343
Chlorophenyl phenyl ether, 4-	7005-72-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0309
Chlorophenyl phenyl ether, 4-	7005-72-3	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1595
Chlorophenyl phenyl ether, 4-	7005-72-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0358
Chlorophenyl phenyl ether, 4-	7005-72-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0411
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0309

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Chlorophenyl phenyl ether, 4-	7005-72-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chlorophenyl phenyl ether, 4-	7005-72-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chlorophenyl phenyl ether, 4-	7005-72-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chlorophenyl phenyl ether, 4-	7005-72-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chlorophenyl phenyl ether, 4-	7005-72-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chlorophenyl phenyl ether, 4-	7005-72-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Chromium	7440-47-3	10.6	mg/kg	0.496		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.248
Chromium	7440-47-3	13.9	mg/kg	0.413		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.207
Chromium	7440-47-3	12.4	mg/kg	0.576		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.288
Chromium	7440-47-3	11.9	mg/kg	0.431		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.215
Chromium	7440-47-3	13.6	mg/kg	0.523		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.261
Chromium	7440-47-3	5.51	mg/kg	0.49		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.245
Chromium	7440-47-3	12	mg/kg	0.511		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.256
Chromium	7440-47-3	11.6	mg/kg	0.4715		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.2355
Chromium	7440-47-3	16.4	mg/kg	0.516		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.258
Chromium	7440-47-3	13.5	mg/kg	0.489		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.244
Chromium	7440-47-3	14.6	mg/kg	0.567		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.284
Chromium	7440-47-3	19.5	mg/kg	0.451		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.226
Chromium	7440-47-3	13	mg/kg	0.476		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.238
Chromium	7440-47-3	8.34	mg/kg	0.484		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.242
Chromium	7440-47-3	10.7	mg/kg	0.605		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.302
Chromium	7440-47-3	11.7	mg/kg	0.419		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.209
Chromium	7440-47-3	13.2	mg/kg	0.71		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		0.71
Chromium	7440-47-3	12.2	mg/kg	1.3		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		1.3
Chromium	7440-47-3	18.1	mg/kg	0.84		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		0.84
Chromium	7440-47-3	20.7	mg/kg	0.63		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		0.63
Chromium	7440-47-3	10.5	mg/kg	0.65		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		0.65
Chromium	7440-47-3	13.5	mg/kg	1.2		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		1.2
Chrysene	218-01-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0163
Chrysene	218-01-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0158
Chrysene	218-01-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0194
Chrysene	218-01-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0166
Chrysene	218-01-9	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0192
Chrysene	218-01-9	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0153
Chrysene	218-01-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0182
Chrysene	218-01-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.01595
Chrysene	218-01-9	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.094
Chrysene	218-01-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0159
Chrysene	218-01-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0177
Chrysene	218-01-9	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.016
Chrysene	218-01-9	0.85	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.0827
Chrysene	218-01-9	0.0675	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0186
Chrysene	218-01-9	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0213
Chrysene	218-01-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.016
Chrysene	218-01-9	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Chrysene	218-01-9	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chrysene	218-01-9	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Chrysene	218-01-9	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Chrysene	218-01-9	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Chrysene	218-01-9	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Cobalt	7440-48-4	5.47	mg/kg	0.199		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.0993
Cobalt	7440-48-4	6.18	mg/kg	0.165		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.0826
Cobalt	7440-48-4	8.57	mg/kg	0.23		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.115
Cobalt	7440-48-4	9.76	mg/kg	0.172		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.0861
Cobalt	7440-48-4	9.92	mg/kg	0.209		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.105
Cobalt	7440-48-4	3.23	mg/kg	0.196		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.098
Cobalt	7440-48-4	8.92	mg/kg	0.205		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.102
Cobalt	7440-48-4	27.85	mg/kg	0.1885		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.09425
Cobalt	7440-48-4	8.36	mg/kg	0.206		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.103
Cobalt	7440-48-4	20.5	mg/kg	0.196		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0978
Cobalt	7440-48-4	10.1	mg/kg	0.227		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.113
Cobalt	7440-48-4	10.1	mg/kg	0.181		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.0903
Cobalt	7440-48-4	6.715	mg/kg	0.19		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.09535
Cobalt	7440-48-4	5.37	mg/kg	0.194		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0969
Cobalt	7440-48-4	6.2	mg/kg	0.242		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.121
Cobalt	7440-48-4	8.95	mg/kg	0.168		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.0838
Cobalt	7440-48-4	5.75	mg/kg	7.1	/U	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	U	7.1
Cobalt	7440-48-4	6.8	mg/kg	6.5		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		6.5
Cobalt	7440-48-4	4.2	mg/kg	8.4	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	8.4
Cobalt	7440-48-4	14.8	mg/kg	6.3		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		6.3
Cobalt	7440-48-4	8.6	mg/kg	6.5		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		6.5
Cobalt	7440-48-4	26	mg/kg	12.2		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		12.2
Copper	7440-50-8	15.4	mg/kg	0.496	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.248
Copper	7440-50-8	25.4	mg/kg	0.413	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.207
Copper	7440-50-8	27.3	mg/kg	0.576	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.288

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Copper	7440-50-8	37.7	mg/kg	0.431	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.215
Copper	7440-50-8	30.5	mg/kg	0.523		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.261
Copper	7440-50-8	7.71	mg/kg	0.49		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.245
Copper	7440-50-8	50	mg/kg	0.511		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.256
Copper	7440-50-8	10.4	mg/kg	0.4715		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.2355
Copper	7440-50-8	47.9	mg/kg	0.516		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.258
Copper	7440-50-8	10.4	mg/kg	0.489		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.244
Copper	7440-50-8	20.5	mg/kg	0.567	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.284
Copper	7440-50-8	27	mg/kg	0.451	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.226
Copper	7440-50-8	31.9	mg/kg	0.476		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.238
Copper	7440-50-8	21.3	mg/kg	0.484		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.242
Copper	7440-50-8	18.2	mg/kg	0.605	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.302
Copper	7440-50-8	26.6	mg/kg	0.419	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.209
Copper	7440-50-8	15.25	mg/kg	3.55		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		3.55
Copper	7440-50-8	32.1	mg/kg	3.3		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		3.3
Copper	7440-50-8	13.5	mg/kg	4.2		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		4.2
Copper	7440-50-8	27.9	mg/kg	3.2		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		3.2
Copper	7440-50-8	24	mg/kg	3.2		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		3.2
Copper	7440-50-8	34.2	mg/kg	6.1		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		6.1
Dibenz(a,h)anthracene	53-70-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0928
Dibenz(a,h)anthracene	53-70-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.09
Dibenz(a,h)anthracene	53-70-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.111
Dibenz(a,h)anthracene	53-70-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0947
Dibenz(a,h)anthracene	53-70-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.11
Dibenz(a,h)anthracene	53-70-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0874
Dibenz(a,h)anthracene	53-70-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.104
Dibenz(a,h)anthracene	53-70-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.091
Dibenz(a,h)anthracene	53-70-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.536
Dibenz(a,h)anthracene	53-70-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0906
Dibenz(a,h)anthracene	53-70-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.101
Dibenz(a,h)anthracene	53-70-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0914
Dibenz(a,h)anthracene	53-70-3	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.472
Dibenz(a,h)anthracene	53-70-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.106
Dibenz(a,h)anthracene	53-70-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.121
Dibenz(a,h)anthracene	53-70-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0912
Dibenz(a,h)anthracene	53-70-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dibenz(a,h)anthracene	53-70-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dibenz(a,h)anthracene	53-70-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dibenz(a,h)anthracene	53-70-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dibenz(a,h)anthracene	53-70-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dibenz(a,h)anthracene	53-70-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dibenzofuran	132-64-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0069
Dibenzofuran	132-64-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00669
Dibenzofuran	132-64-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00823
Dibenzofuran	132-64-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00704
Dibenzofuran	132-64-9	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00815
Dibenzofuran	132-64-9	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0065
Dibenzofuran	132-64-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00771
Dibenzofuran	132-64-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.006765
Dibenzofuran	132-64-9	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0399
Dibenzofuran	132-64-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00674
Dibenzofuran	132-64-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00753
Dibenzofuran	132-64-9	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0068
Dibenzofuran	132-64-9	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0351
Dibenzofuran	132-64-9	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00787
Dibenzofuran	132-64-9	0.0757	mg/kg	0.536	QJ	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	J	0.00902
Dibenzofuran	132-64-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00678
Dibenzofuran	132-64-9	0.2325	mg/kg	0.465	UJUJ	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dibenzofuran	132-64-9	0.215	mg/kg	0.43	UJ	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dibenzofuran	132-64-9	0.275	mg/kg	0.55	UJ	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dibenzofuran	132-64-9	0.21	mg/kg	0.42	UJ	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dibenzofuran	132-64-9	0.215	mg/kg	0.43	UJ	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dibenzofuran	132-64-9	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dichlorobenzene, 1,2-	95-50-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00949
Dichlorobenzene, 1,2-	95-50-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0092
Dichlorobenzene, 1,2-	95-50-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0113
Dichlorobenzene, 1,2-	95-50-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00969
Dichlorobenzene, 1,2-	95-50-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0112
Dichlorobenzene, 1,2-	95-50-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00894
Dichlorobenzene, 1,2-	95-50-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0106
Dichlorobenzene, 1,2-	95-50-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.009305
Dichlorobenzene, 1,2-	95-50-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0548
Dichlorobenzene, 1,2-	95-50-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00927
Dichlorobenzene, 1,2-	95-50-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0104
Dichlorobenzene, 1,2-	95-50-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00934

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dichlorobenzene, 1,2-	95-50-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.04825
Dichlorobenzene, 1,2-	95-50-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0108
Dichlorobenzene, 1,2-	95-50-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0124
Dichlorobenzene, 1,2-	95-50-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00933
Dichlorobenzene, 1,2-	95-50-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dichlorobenzene, 1,2-	95-50-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,2-	95-50-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dichlorobenzene, 1,2-	95-50-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dichlorobenzene, 1,2-	95-50-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,2-	95-50-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dichlorobenzene, 1,3-	541-73-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0149
Dichlorobenzene, 1,3-	541-73-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0145
Dichlorobenzene, 1,3-	541-73-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0178
Dichlorobenzene, 1,3-	541-73-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0152
Dichlorobenzene, 1,3-	541-73-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0176
Dichlorobenzene, 1,3-	541-73-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.014
Dichlorobenzene, 1,3-	541-73-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0167
Dichlorobenzene, 1,3-	541-73-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0146
Dichlorobenzene, 1,3-	541-73-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0861
Dichlorobenzene, 1,3-	541-73-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0146
Dichlorobenzene, 1,3-	541-73-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0163
Dichlorobenzene, 1,3-	541-73-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0147
Dichlorobenzene, 1,3-	541-73-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07585
Dichlorobenzene, 1,3-	541-73-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.017
Dichlorobenzene, 1,3-	541-73-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0195
Dichlorobenzene, 1,3-	541-73-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0147
Dichlorobenzene, 1,3-	541-73-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dichlorobenzene, 1,3-	541-73-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,3-	541-73-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dichlorobenzene, 1,3-	541-73-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dichlorobenzene, 1,3-	541-73-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,3-	541-73-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dichlorobenzene, 1,4-	106-46-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00801
Dichlorobenzene, 1,4-	106-46-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00777
Dichlorobenzene, 1,4-	106-46-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00956
Dichlorobenzene, 1,4-	106-46-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00818
Dichlorobenzene, 1,4-	106-46-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00946
Dichlorobenzene, 1,4-	106-46-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00754
Dichlorobenzene, 1,4-	106-46-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00894
Dichlorobenzene, 1,4-	106-46-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.007855
Dichlorobenzene, 1,4-	106-46-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0463
Dichlorobenzene, 1,4-	106-46-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00782
Dichlorobenzene, 1,4-	106-46-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00874
Dichlorobenzene, 1,4-	106-46-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00789
Dichlorobenzene, 1,4-	106-46-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0407
Dichlorobenzene, 1,4-	106-46-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00913
Dichlorobenzene, 1,4-	106-46-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0105
Dichlorobenzene, 1,4-	106-46-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00787
Dichlorobenzene, 1,4-	106-46-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dichlorobenzene, 1,4-	106-46-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,4-	106-46-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dichlorobenzene, 1,4-	106-46-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dichlorobenzene, 1,4-	106-46-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzene, 1,4-	106-46-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dichlorobenzidine, 3,3'-	91-94-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0407
Dichlorobenzidine, 3,3'-	91-94-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0394
Dichlorobenzidine, 3,3'-	91-94-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0485
Dichlorobenzidine, 3,3'-	91-94-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0415
Dichlorobenzidine, 3,3'-	91-94-1	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.048
Dichlorobenzidine, 3,3'-	91-94-1	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0383
Dichlorobenzidine, 3,3'-	91-94-1	0.229	mg/kg	0.458	UJ	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0454
Dichlorobenzidine, 3,3'-	91-94-1	0.2013	mg/kg	0.4025	UJUJ	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0399
Dichlorobenzidine, 3,3'-	91-94-1	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.235
Dichlorobenzidine, 3,3'-	91-94-1	0.2005	mg/kg	0.401	UJ	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0397
Dichlorobenzidine, 3,3'-	91-94-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0444
Dichlorobenzidine, 3,3'-	91-94-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.04
Dichlorobenzidine, 3,3'-	91-94-1	1.0425	mg/kg	2.085	UJUJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.2065
Dichlorobenzidine, 3,3'-	91-94-1	0.234	mg/kg	0.468	UJ	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0464
Dichlorobenzidine, 3,3'-	91-94-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0531
Dichlorobenzidine, 3,3'-	91-94-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.04
Dichlorobenzidine, 3,3'-	91-94-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dichlorobenzidine, 3,3'-	91-94-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorobenzidine, 3,3'-	91-94-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dichlorobenzidine, 3,3'-	91-94-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dichlorobenzidine, 3,3'-	91-94-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dichlorobenzidine, 3,3'-	91-94-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dichlorophenol, 2,4-	120-83-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0147
Dichlorophenol, 2,4-	120-83-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0142
Dichlorophenol, 2,4-	120-83-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0175
Dichlorophenol, 2,4-	120-83-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.015
Dichlorophenol, 2,4-	120-83-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0173
Dichlorophenol, 2,4-	120-83-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0138
Dichlorophenol, 2,4-	120-83-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0164
Dichlorophenol, 2,4-	120-83-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0144
Dichlorophenol, 2,4-	120-83-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0847
Dichlorophenol, 2,4-	120-83-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0143
Dichlorophenol, 2,4-	120-83-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.016
Dichlorophenol, 2,4-	120-83-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0144
Dichlorophenol, 2,4-	120-83-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07455
Dichlorophenol, 2,4-	120-83-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0167
Dichlorophenol, 2,4-	120-83-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0192
Dichlorophenol, 2,4-	120-83-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0144
Dichlorophenol, 2,4-	120-83-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dichlorophenol, 2,4-	120-83-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorophenol, 2,4-	120-83-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dichlorophenol, 2,4-	120-83-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dichlorophenol, 2,4-	120-83-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dichlorophenol, 2,4-	120-83-2	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Diethyl phthalate	84-66-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0166
Diethyl phthalate	84-66-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0161
Diethyl phthalate	84-66-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0198
Diethyl phthalate	84-66-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.017
Diethyl phthalate	84-66-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0196
Diethyl phthalate	84-66-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0157
Diethyl phthalate	84-66-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0186
Diethyl phthalate	84-66-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0163
Diethyl phthalate	84-66-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0961
Diethyl phthalate	84-66-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0163
Diethyl phthalate	84-66-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0181
Diethyl phthalate	84-66-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0164
Diethyl phthalate	84-66-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.08465
Diethyl phthalate	84-66-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.019
Diethyl phthalate	84-66-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0217
Diethyl phthalate	84-66-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0164
Diethyl phthalate	84-66-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Diethyl phthalate	84-66-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Diethyl phthalate	84-66-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Diethyl phthalate	84-66-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Diethyl phthalate	84-66-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Diethyl phthalate	84-66-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dimethyl phthalate	131-11-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0126
Dimethyl phthalate	131-11-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0122
Dimethyl phthalate	131-11-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.015
Dimethyl phthalate	131-11-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0128
Dimethyl phthalate	131-11-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0148
Dimethyl phthalate	131-11-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0118
Dimethyl phthalate	131-11-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.014
Dimethyl phthalate	131-11-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0123
Dimethyl phthalate	131-11-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0726
Dimethyl phthalate	131-11-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0123
Dimethyl phthalate	131-11-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0137
Dimethyl phthalate	131-11-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0124
Dimethyl phthalate	131-11-3	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0639
Dimethyl phthalate	131-11-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0143
Dimethyl phthalate	131-11-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0164
Dimethyl phthalate	131-11-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0124
Dimethyl phthalate	131-11-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dimethyl phthalate	131-11-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dimethyl phthalate	131-11-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dimethyl phthalate	131-11-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dimethyl phthalate	131-11-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dimethyl phthalate	131-11-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dimethylphenol, 2,4-	105-67-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0108
Dimethylphenol, 2,4-	105-67-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0105
Dimethylphenol, 2,4-	105-67-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0129
Dimethylphenol, 2,4-	105-67-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0111
Dimethylphenol, 2,4-	105-67-9	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0128
Dimethylphenol, 2,4-	105-67-9	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0102
Dimethylphenol, 2,4-	105-67-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0121
Dimethylphenol, 2,4-	105-67-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0106

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dimethylphenol, 2,4-	105-67-9	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0626
Dimethylphenol, 2,4-	105-67-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0106
Dimethylphenol, 2,4-	105-67-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0118
Dimethylphenol, 2,4-	105-67-9	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0107
Dimethylphenol, 2,4-	105-67-9	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.05515
Dimethylphenol, 2,4-	105-67-9	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0124
Dimethylphenol, 2,4-	105-67-9	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0142
Dimethylphenol, 2,4-	105-67-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0107
Dimethylphenol, 2,4-	105-67-9	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dimethylphenol, 2,4-	105-67-9	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dimethylphenol, 2,4-	105-67-9	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dimethylphenol, 2,4-	105-67-9	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dimethylphenol, 2,4-	105-67-9	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dimethylphenol, 2,4-	105-67-9	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Di-n-butyl phthalate	84-74-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00887
Di-n-butyl phthalate	84-74-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0086
Di-n-butyl phthalate	84-74-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0106
Di-n-butyl phthalate	84-74-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00906
Di-n-butyl phthalate	84-74-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0105
Di-n-butyl phthalate	84-74-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00836
Di-n-butyl phthalate	84-74-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00991
Di-n-butyl phthalate	84-74-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0087
Di-n-butyl phthalate	84-74-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0513
Di-n-butyl phthalate	84-74-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00867
Di-n-butyl phthalate	84-74-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00968
Di-n-butyl phthalate	84-74-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00874
Di-n-butyl phthalate	84-74-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0451
Di-n-butyl phthalate	84-74-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0101
Di-n-butyl phthalate	84-74-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0116
Di-n-butyl phthalate	84-74-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00872
Di-n-butyl phthalate	84-74-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Di-n-butyl phthalate	84-74-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Di-n-butyl phthalate	84-74-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Di-n-butyl phthalate	84-74-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Di-n-butyl phthalate	84-74-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Di-n-butyl phthalate	84-74-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dinitro-2-methylphenol, 4,6-	534-52-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0413
Dinitro-2-methylphenol, 4,6-	534-52-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.04
Dinitro-2-methylphenol, 4,6-	534-52-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0492
Dinitro-2-methylphenol, 4,6-	534-52-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0421
Dinitro-2-methylphenol, 4,6-	534-52-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0488
Dinitro-2-methylphenol, 4,6-	534-52-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0389
Dinitro-2-methylphenol, 4,6-	534-52-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0461
Dinitro-2-methylphenol, 4,6-	534-52-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0405
Dinitro-2-methylphenol, 4,6-	534-52-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.238
Dinitro-2-methylphenol, 4,6-	534-52-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0403
Dinitro-2-methylphenol, 4,6-	534-52-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.045
Dinitro-2-methylphenol, 4,6-	534-52-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0407
Dinitro-2-methylphenol, 4,6-	534-52-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.21
Dinitro-2-methylphenol, 4,6-	534-52-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0471
Dinitro-2-methylphenol, 4,6-	534-52-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.054
Dinitro-2-methylphenol, 4,6-	534-52-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0406
Dinitro-2-methylphenol, 4,6-	534-52-1	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Dinitro-2-methylphenol, 4,6-	534-52-1	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Dinitro-2-methylphenol, 4,6-	534-52-1	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Dinitro-2-methylphenol, 4,6-	534-52-1	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Dinitro-2-methylphenol, 4,6-	534-52-1	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Dinitro-2-methylphenol, 4,6-	534-52-1	1	mg/kg	2	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Dinitrobenzene, 1,3-	99-65-0	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Dinitrobenzene, 1,3-	99-65-0	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Dinitrobenzene, 1,3-	99-65-0	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Dinitrobenzene, 1,3-	99-65-0	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Dinitrobenzene, 1,3-	99-65-0	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Dinitrobenzene, 1,3-	99-65-0	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Dinitrobenzene, 1,3-	99-65-0	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Dinitrobenzene, 1,3-	99-65-0	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Dinitrobenzene, 1,3-	99-65-0	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Dinitrobenzene, 1,3-	99-65-0	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Dinitrobenzene, 1,3-	99-65-0	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Dinitrobenzene, 1,3-	99-65-0	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Dinitrobenzene, 1,3-	99-65-0	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Dinitrobenzene, 1,3-	99-65-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Dinitrobenzene, 1,3-	99-65-0	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Dinitrobenzene, 1,3-	99-65-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Dinitrophenol, 2,4-	51-28-5	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0654

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dinitrophenol, 2,4-	51-28-5	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0635
Dinitrophenol, 2,4-	51-28-5	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0781
Dinitrophenol, 2,4-	51-28-5	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0668
Dinitrophenol, 2,4-	51-28-5	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0773
Dinitrophenol, 2,4-	51-28-5	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0616
Dinitrophenol, 2,4-	51-28-5	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0731
Dinitrophenol, 2,4-	51-28-5	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.06415
Dinitrophenol, 2,4-	51-28-5	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.378
Dinitrophenol, 2,4-	51-28-5	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0639
Dinitrophenol, 2,4-	51-28-5	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0714
Dinitrophenol, 2,4-	51-28-5	0.202	mg/kg	0.404	UJ	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0644
Dinitrophenol, 2,4-	51-28-5	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.3325
Dinitrophenol, 2,4-	51-28-5	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0746
Dinitrophenol, 2,4-	51-28-5	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0855
Dinitrophenol, 2,4-	51-28-5	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0643
Dinitrophenol, 2,4-	51-28-5	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Dinitrophenol, 2,4-	51-28-5	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Dinitrophenol, 2,4-	51-28-5	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Dinitrophenol, 2,4-	51-28-5	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Dinitrophenol, 2,4-	51-28-5	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Dinitrophenol, 2,4-	51-28-5	1	mg/kg	2	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Dinitrotoluene, 2,4-	121-14-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0144
Dinitrotoluene, 2,4-	121-14-2	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Dinitrotoluene, 2,4-	121-14-2	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Dinitrotoluene, 2,4-	121-14-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.014
Dinitrotoluene, 2,4-	121-14-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0172
Dinitrotoluene, 2,4-	121-14-2	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Dinitrotoluene, 2,4-	121-14-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0147
Dinitrotoluene, 2,4-	121-14-2	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Dinitrotoluene, 2,4-	121-14-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.017
Dinitrotoluene, 2,4-	121-14-2	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Dinitrotoluene, 2,4-	121-14-2	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Dinitrotoluene, 2,4-	121-14-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0136
Dinitrotoluene, 2,4-	121-14-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0161
Dinitrotoluene, 2,4-	121-14-2	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Dinitrotoluene, 2,4-	121-14-2	0.1818	mg/kg	0.3635	UU	ASH PIT 1-SB04	AP0011AP0011	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0881
Dinitrotoluene, 2,4-	121-14-2	0.177	mg/kg	0.354	UU	ASH PIT 1-SB04	AP0012AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.08355
Dinitrotoluene, 2,4-	121-14-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0833
Dinitrotoluene, 2,4-	121-14-2	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Dinitrotoluene, 2,4-	121-14-2	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Dinitrotoluene, 2,4-	121-14-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0141
Dinitrotoluene, 2,4-	121-14-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0157
Dinitrotoluene, 2,4-	121-14-2	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Dinitrotoluene, 2,4-	121-14-2	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Dinitrotoluene, 2,4-	121-14-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0142
Dinitrotoluene, 2,4-	121-14-2	0.608	mg/kg	1.216	UJU	ASH PIT 1-SB08	AP0023AP0023	SEMIVOLATILES	AVGD	39791	0	1	UU	0.11295
Dinitrotoluene, 2,4-	121-14-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0164
Dinitrotoluene, 2,4-	121-14-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Dinitrotoluene, 2,4-	121-14-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0188
Dinitrotoluene, 2,4-	121-14-2	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Dinitrotoluene, 2,4-	121-14-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0142
Dinitrotoluene, 2,4-	121-14-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Dinitrotoluene, 2,4-	121-14-2	0.5798	mg/kg	1.1595	UJU	ASH PIT 1-SB08	AP0063AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.10585
Dinitrotoluene, 2,4-	121-14-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dinitrotoluene, 2,4-	121-14-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dinitrotoluene, 2,4-	121-14-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dinitrotoluene, 2,4-	121-14-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dinitrotoluene, 2,4-	121-14-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dinitrotoluene, 2,4-	121-14-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Dinitrotoluene, 2,6-	606-20-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00986
Dinitrotoluene, 2,6-	606-20-2	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Dinitrotoluene, 2,6-	606-20-2	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Dinitrotoluene, 2,6-	606-20-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00956
Dinitrotoluene, 2,6-	606-20-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0118
Dinitrotoluene, 2,6-	606-20-2	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Dinitrotoluene, 2,6-	606-20-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0101
Dinitrotoluene, 2,6-	606-20-2	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Dinitrotoluene, 2,6-	606-20-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0116
Dinitrotoluene, 2,6-	606-20-2	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Dinitrotoluene, 2,6-	606-20-2	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Dinitrotoluene, 2,6-	606-20-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00928
Dinitrotoluene, 2,6-	606-20-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.011
Dinitrotoluene, 2,6-	606-20-2	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Dinitrotoluene, 2,6-	606-20-2	0.1818	mg/kg	0.3635	UU	ASH PIT 1-SB04	AP0011AP0011	SEMIVOLATILES	AVGD	39791	3	4	UU	0.08584
Dinitrotoluene, 2,6-	606-20-2	0.177	mg/kg	0.354	UU	ASH PIT 1-SB04	AP0012AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.08133

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dinitrotoluene, 2,6-	606-20-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.057
Dinitrotoluene, 2,6-	606-20-2	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Dinitrotoluene, 2,6-	606-20-2	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Dinitrotoluene, 2,6-	606-20-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00963
Dinitrotoluene, 2,6-	606-20-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0108
Dinitrotoluene, 2,6-	606-20-2	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Dinitrotoluene, 2,6-	606-20-2	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Dinitrotoluene, 2,6-	606-20-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00971
Dinitrotoluene, 2,6-	606-20-2	0.608	mg/kg	1.216	UJU	ASH PIT 1-SB08	AP0023AP0023	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1011
Dinitrotoluene, 2,6-	606-20-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0112
Dinitrotoluene, 2,6-	606-20-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Dinitrotoluene, 2,6-	606-20-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0129
Dinitrotoluene, 2,6-	606-20-2	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Dinitrotoluene, 2,6-	606-20-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00969
Dinitrotoluene, 2,6-	606-20-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Dinitrotoluene, 2,6-	606-20-2	0.5798	mg/kg	1.1595	UJU	ASH PIT 1-SB08	AP0063AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0945
Dinitrotoluene, 2,6-	606-20-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Dinitrotoluene, 2,6-	606-20-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dinitrotoluene, 2,6-	606-20-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Dinitrotoluene, 2,6-	606-20-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Dinitrotoluene, 2,6-	606-20-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Dinitrotoluene, 2,6-	606-20-2	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Di-n-octyl phthalate	117-84-0	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0773
Di-n-octyl phthalate	117-84-0	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0749
Di-n-octyl phthalate	117-84-0	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0922
Di-n-octyl phthalate	117-84-0	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0789
Di-n-octyl phthalate	117-84-0	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0912
Di-n-octyl phthalate	117-84-0	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0728
Di-n-octyl phthalate	117-84-0	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0863
Di-n-octyl phthalate	117-84-0	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.07575
Di-n-octyl phthalate	117-84-0	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.446
Di-n-octyl phthalate	117-84-0	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0755
Di-n-octyl phthalate	117-84-0	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0843
Di-n-octyl phthalate	117-84-0	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0761
Di-n-octyl phthalate	117-84-0	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.393
Di-n-octyl phthalate	117-84-0	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0881
Di-n-octyl phthalate	117-84-0	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.101
Di-n-octyl phthalate	117-84-0	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.076
Di-n-octyl phthalate	117-84-0	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Di-n-octyl phthalate	117-84-0	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Di-n-octyl phthalate	117-84-0	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Di-n-octyl phthalate	117-84-0	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Di-n-octyl phthalate	117-84-0	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Di-n-octyl phthalate	117-84-0	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
DIPHENYLAMINE	122-39-4	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0407
DIPHENYLAMINE	122-39-4	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0394
DIPHENYLAMINE	122-39-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0485
DIPHENYLAMINE	122-39-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0415
DIPHENYLAMINE	122-39-4	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.048
DIPHENYLAMINE	122-39-4	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0383
DIPHENYLAMINE	122-39-4	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0454
DIPHENYLAMINE	122-39-4	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0399
DIPHENYLAMINE	122-39-4	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.235
DIPHENYLAMINE	122-39-4	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0397
DIPHENYLAMINE	122-39-4	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0444
DIPHENYLAMINE	122-39-4	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.04
DIPHENYLAMINE	122-39-4	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.2065
DIPHENYLAMINE	122-39-4	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0464
DIPHENYLAMINE	122-39-4	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0531
DIPHENYLAMINE	122-39-4	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.04
Fluoranthene	206-44-0	0.0477	mg/kg	0.41	QJ	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	J	0.00887
Fluoranthene	206-44-0	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0086
Fluoranthene	206-44-0	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0106
Fluoranthene	206-44-0	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00906
Fluoranthene	206-44-0	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0105
Fluoranthene	206-44-0	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00836
Fluoranthene	206-44-0	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00991
Fluoranthene	206-44-0	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0087
Fluoranthene	206-44-0	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0513
Fluoranthene	206-44-0	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00867
Fluoranthene	206-44-0	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00968
Fluoranthene	206-44-0	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00874
Fluoranthene	206-44-0	1.875	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.0451
Fluoranthene	206-44-0	0.126	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0101
Fluoranthene	206-44-0	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0116

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Fluoranthene	206-44-0	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00872
Fluoranthene	206-44-0	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Fluoranthene	206-44-0	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Fluoranthene	206-44-0	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Fluoranthene	206-44-0	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Fluoranthene	206-44-0	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Fluoranthene	206-44-0	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Fluorene	86-73-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0174
Fluorene	86-73-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0169
Fluorene	86-73-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0207
Fluorene	86-73-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0177
Fluorene	86-73-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0205
Fluorene	86-73-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0164
Fluorene	86-73-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0194
Fluorene	86-73-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.01705
Fluorene	86-73-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.1
Fluorene	86-73-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.017
Fluorene	86-73-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.019
Fluorene	86-73-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0171
Fluorene	86-73-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.08835
Fluorene	86-73-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0198
Fluorene	86-73-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0227
Fluorene	86-73-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0171
Fluorene	86-73-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Fluorene	86-73-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Fluorene	86-73-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Fluorene	86-73-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Fluorene	86-73-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Fluorene	86-73-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Hexachlorobenzene	118-74-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0255
Hexachlorobenzene	118-74-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0247
Hexachlorobenzene	118-74-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0304
Hexachlorobenzene	118-74-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.026
Hexachlorobenzene	118-74-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0301
Hexachlorobenzene	118-74-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.024
Hexachlorobenzene	118-74-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0285
Hexachlorobenzene	118-74-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.025
Hexachlorobenzene	118-74-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.147
Hexachlorobenzene	118-74-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0249
Hexachlorobenzene	118-74-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0278
Hexachlorobenzene	118-74-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0251
Hexachlorobenzene	118-74-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.13
Hexachlorobenzene	118-74-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0291
Hexachlorobenzene	118-74-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0333
Hexachlorobenzene	118-74-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0251
Hexachlorobenzene	118-74-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Hexachlorobenzene	118-74-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorobenzene	118-74-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Hexachlorobenzene	118-74-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Hexachlorobenzene	118-74-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorobenzene	118-74-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Hexachlorobutadiene	87-68-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0389
Hexachlorobutadiene	87-68-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0378
Hexachlorobutadiene	87-68-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0465
Hexachlorobutadiene	87-68-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0397
Hexachlorobutadiene	87-68-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.046
Hexachlorobutadiene	87-68-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0367
Hexachlorobutadiene	87-68-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0435
Hexachlorobutadiene	87-68-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0382
Hexachlorobutadiene	87-68-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.225
Hexachlorobutadiene	87-68-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.038
Hexachlorobutadiene	87-68-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0425
Hexachlorobutadiene	87-68-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0383
Hexachlorobutadiene	87-68-3	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.198
Hexachlorobutadiene	87-68-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0444
Hexachlorobutadiene	87-68-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0509
Hexachlorobutadiene	87-68-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0383
Hexachlorobutadiene	87-68-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Hexachlorobutadiene	87-68-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorobutadiene	87-68-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Hexachlorobutadiene	87-68-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Hexachlorobutadiene	87-68-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorobutadiene	87-68-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Hexachlorocyclopentadiene	77-47-4	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0131
Hexachlorocyclopentadiene	77-47-4	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0127

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Hexachlorocyclopentadiene	77-47-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0156
Hexachlorocyclopentadiene	77-47-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0133
Hexachlorocyclopentadiene	77-47-4	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0154
Hexachlorocyclopentadiene	77-47-4	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0123
Hexachlorocyclopentadiene	77-47-4	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0146
Hexachlorocyclopentadiene	77-47-4	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0128
Hexachlorocyclopentadiene	77-47-4	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0755
Hexachlorocyclopentadiene	77-47-4	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0128
Hexachlorocyclopentadiene	77-47-4	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0142
Hexachlorocyclopentadiene	77-47-4	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0129
Hexachlorocyclopentadiene	77-47-4	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.06645
Hexachlorocyclopentadiene	77-47-4	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0149
Hexachlorocyclopentadiene	77-47-4	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0171
Hexachlorocyclopentadiene	77-47-4	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0128
Hexachlorocyclopentadiene	77-47-4	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Hexachlorocyclopentadiene	77-47-4	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorocyclopentadiene	77-47-4	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Hexachlorocyclopentadiene	77-47-4	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Hexachlorocyclopentadiene	77-47-4	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachlorocyclopentadiene	77-47-4	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Hexachloroethane	67-72-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0126
Hexachloroethane	67-72-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0122
Hexachloroethane	67-72-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.015
Hexachloroethane	67-72-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0128
Hexachloroethane	67-72-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0148
Hexachloroethane	67-72-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0118
Hexachloroethane	67-72-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.014
Hexachloroethane	67-72-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0123
Hexachloroethane	67-72-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0726
Hexachloroethane	67-72-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0123
Hexachloroethane	67-72-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0137
Hexachloroethane	67-72-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0124
Hexachloroethane	67-72-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0639
Hexachloroethane	67-72-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0143
Hexachloroethane	67-72-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0164
Hexachloroethane	67-72-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0124
Hexachloroethane	67-72-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Hexachloroethane	67-72-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachloroethane	67-72-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Hexachloroethane	67-72-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Hexachloroethane	67-72-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Hexachloroethane	67-72-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
HMX	2691-41-0	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
HMX	2691-41-0	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
HMX	2691-41-0	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
HMX	2691-41-0	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
HMX	2691-41-0	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
HMX	2691-41-0	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
HMX	2691-41-0	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
HMX	2691-41-0	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
HMX	2691-41-0	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
HMX	2691-41-0	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
HMX	2691-41-0	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
HMX	2691-41-0	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
HMX	2691-41-0	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
HMX	2691-41-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
HMX	2691-41-0	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
HMX	2691-41-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Indeno(1,2,3-cd)pyrene	193-39-5	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.133
Indeno(1,2,3-cd)pyrene	193-39-5	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.129
Indeno(1,2,3-cd)pyrene	193-39-5	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.159
Indeno(1,2,3-cd)pyrene	193-39-5	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.136
Indeno(1,2,3-cd)pyrene	193-39-5	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.157
Indeno(1,2,3-cd)pyrene	193-39-5	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.125
Indeno(1,2,3-cd)pyrene	193-39-5	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.149
Indeno(1,2,3-cd)pyrene	193-39-5	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.1305
Indeno(1,2,3-cd)pyrene	193-39-5	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.769
Indeno(1,2,3-cd)pyrene	193-39-5	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.13
Indeno(1,2,3-cd)pyrene	193-39-5	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.145
Indeno(1,2,3-cd)pyrene	193-39-5	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.131
Indeno(1,2,3-cd)pyrene	193-39-5	1.815	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.677
Indeno(1,2,3-cd)pyrene	193-39-5	0.312	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.152
Indeno(1,2,3-cd)pyrene	193-39-5	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.174
Indeno(1,2,3-cd)pyrene	193-39-5	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.131
Indeno(1,2,3-cd)pyrene	193-39-5	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Indeno(1,2,3-cd)pyrene	193-39-5	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Indeno(1,2,3-cd)pyrene	193-39-5	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Indeno(1,2,3-cd)pyrene	193-39-5	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Indeno(1,2,3-cd)pyrene	193-39-5	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Indeno(1,2,3-cd)pyrene	193-39-5	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Iron	7439-89-6	17200	mg/kg	3.97		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	B	1.99
Iron	7439-89-6	15600	mg/kg	3.31		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	B	1.65
Iron	7439-89-6	36500	mg/kg	4.61		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	B	2.3
Iron	7439-89-6	21500	mg/kg	3.44		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	B	1.72
Iron	7439-89-6	63100	mg/kg	20.9		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		10.5
Iron	7439-89-6	10600	mg/kg	3.92		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		1.96
Iron	7439-89-6	90300	mg/kg	20.5		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		10.2
Iron	7439-89-6	23050	mg/kg	5.605		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		2.805
Iron	7439-89-6	64800	mg/kg	20.6		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		10.3
Iron	7439-89-6	62000	mg/kg	19.6		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		9.78
Iron	7439-89-6	41100	mg/kg	4.54		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	B	2.27
Iron	7439-89-6	22600	mg/kg	3.61		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	B	1.81
Iron	7439-89-6	46500	mg/kg	12.855		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		6.44
Iron	7439-89-6	47000	mg/kg	7.75		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		3.87
Iron	7439-89-6	26500	mg/kg	4.84		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	B	2.42
Iron	7439-89-6	20600	mg/kg	3.35		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	B	1.68
Iron	7439-89-6	21600	mg/kg	14.15		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		14.15
Iron	7439-89-6	95100	mg/kg	26.2		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		26.2
Iron	7439-89-6	29000	mg/kg	16.7		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		16.7
Iron	7439-89-6	45500	mg/kg	12.6		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		12.6
Iron	7439-89-6	70300	mg/kg	13		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		13
Iron	7439-89-6	73200	mg/kg	24.4		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		24.4
Isophorone	78-59-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00493
Isophorone	78-59-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00478
Isophorone	78-59-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00588
Isophorone	78-59-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00503
Isophorone	78-59-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00582
Isophorone	78-59-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00464
Isophorone	78-59-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0055
Isophorone	78-59-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.004835
Isophorone	78-59-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0285
Isophorone	78-59-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00481
Isophorone	78-59-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00538
Isophorone	78-59-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00485
Isophorone	78-59-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.02505
Isophorone	78-59-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00562
Isophorone	78-59-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00644
Isophorone	78-59-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00485
Isophorone	78-59-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Isophorone	78-59-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Isophorone	78-59-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Isophorone	78-59-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Isophorone	78-59-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Isophorone	78-59-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Lead	7439-92-1	6.61	mg/kg	0.46		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.23
Lead	7439-92-1	12.3	mg/kg	0.514		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.257
Lead	7439-92-1	9.65	mg/kg	0.595		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.297
Lead	7439-92-1	14.6	mg/kg	0.479		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.239
Lead	7439-92-1	9.59	mg/kg	0.526		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.263
Lead	7439-92-1	7.75	mg/kg	0.449		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.224
Lead	7439-92-1	11.3	mg/kg	0.531		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.266
Lead	7439-92-1	7.69	mg/kg	0.423		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.2115
Lead	7439-92-1	12.3	mg/kg	0.551		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.276
Lead	7439-92-1	5.69	mg/kg	0.481		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.241
Lead	7439-92-1	8.3	mg/kg	0.577		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.288
Lead	7439-92-1	12.2	mg/kg	0.455		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.227
Lead	7439-92-1	27.05	mg/kg	0.476		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.2375
Lead	7439-92-1	9.36	mg/kg	0.531		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.265
Lead	7439-92-1	6.28	mg/kg	0.61		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.305
Lead	7439-92-1	9	mg/kg	0.467		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.233
Lead	7439-92-1	8.3	mg/kg	0.42		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		0.42
Lead	7439-92-1	5.9	mg/kg	0.79		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		0.79
Lead	7439-92-1	8.1	mg/kg	0.5		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		0.5
Lead	7439-92-1	10.9	mg/kg	0.38		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		0.38
Lead	7439-92-1	4.9	mg/kg	0.39		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		0.39
Lead	7439-92-1	5.6	mg/kg	0.73		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		0.73
Magnesium	7439-95-4	5030	mg/kg	1.99		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.993
Magnesium	7439-95-4	13700	mg/kg	1.65		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.826
Magnesium	7439-95-4	5830	mg/kg	2.3		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		1.15
Magnesium	7439-95-4	16500	mg/kg	1.72		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.861

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Magnesium	7439-95-4	1500	mg/kg	2.09		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		1.05
Magnesium	7439-95-4	6420	mg/kg	1.96		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.98
Magnesium	7439-95-4	782	mg/kg	2.05		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		1.02
Magnesium	7439-95-4	1085	mg/kg	1.885		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.9425
Magnesium	7439-95-4	4010	mg/kg	2.06		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		1.03
Magnesium	7439-95-4	961	mg/kg	1.96		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.978
Magnesium	7439-95-4	1730	mg/kg	2.27		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		1.13
Magnesium	7439-95-4	11700	mg/kg	1.81		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.903
Magnesium	7439-95-4	1915	mg/kg	1.9		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.9535
Magnesium	7439-95-4	839	mg/kg	1.94		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.969
Magnesium	7439-95-4	3740	mg/kg	2.42		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		1.21
Magnesium	7439-95-4	16100	mg/kg	1.68		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.838
Magnesium	7439-95-4	1660	mg/kg	707		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		707
Magnesium	7439-95-4	327	mg/kg	654	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U	654
Magnesium	7439-95-4	1470	mg/kg	835		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		835
Magnesium	7439-95-4	4910	mg/kg	632		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		632
Magnesium	7439-95-4	651	mg/kg	648		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		648
Magnesium	7439-95-4	3770	mg/kg	1220		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		1220
Manganese	7439-96-5	263	mg/kg	0.199		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.0993
Manganese	7439-96-5	251	mg/kg	0.165		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.0826
Manganese	7439-96-5	306	mg/kg	0.23		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.115
Manganese	7439-96-5	543	mg/kg	0.172		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.0861
Manganese	7439-96-5	252	mg/kg	0.209		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.105
Manganese	7439-96-5	266	mg/kg	0.196		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.098
Manganese	7439-96-5	241	mg/kg	0.205		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.102
Manganese	7439-96-5	1055.5	mg/kg	0.1885		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.09425
Manganese	7439-96-5	305	mg/kg	0.206		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.103
Manganese	7439-96-5	954	mg/kg	0.196		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0978
Manganese	7439-96-5	199	mg/kg	0.227		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.113
Manganese	7439-96-5	701	mg/kg	0.181		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.0903
Manganese	7439-96-5	342	mg/kg	0.19		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.09535
Manganese	7439-96-5	469	mg/kg	0.194		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0969
Manganese	7439-96-5	2810	mg/kg	0.242		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.121
Manganese	7439-96-5	506	mg/kg	0.168		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.0838
Manganese	7439-96-5	825	mg/kg	2.15	J	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		2.15
Manganese	7439-96-5	199	mg/kg	3.9		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		3.9
Manganese	7439-96-5	125	mg/kg	2.5		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		2.5
Manganese	7439-96-5	409	mg/kg	1.9		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		1.9
Manganese	7439-96-5	181	mg/kg	1.9		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		1.9
Manganese	7439-96-5	1370	mg/kg	3.7		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		3.7
Mercury	7439-97-6	0.0123	mg/kg	0.0246	U	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.0123
Mercury	7439-97-6	0.0121	mg/kg	0.0241	U	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	U	0.012
Mercury	7439-97-6	0.0357	mg/kg	0.03		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.015
Mercury	7439-97-6	0.0196	mg/kg	0.0242	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	J	0.0121
Mercury	7439-97-6	0.0928	mg/kg	0.0296		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.0148
Mercury	7439-97-6	0.0116	mg/kg	0.0232	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.0116
Mercury	7439-97-6	0.383	mg/kg	0.0274		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.0137
Mercury	7439-97-6	0.0303	mg/kg	0.02295		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.01145
Mercury	7439-97-6	0.0756	mg/kg	0.0291		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.0146
Mercury	7439-97-6	0.0592	mg/kg	0.0224		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0112
Mercury	7439-97-6	0.0146	mg/kg	0.0248	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	J	0.0124
Mercury	7439-97-6	0.0118	mg/kg	0.0236	U	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	U	0.0118
Mercury	7439-97-6	0.157	mg/kg	0.02555		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.0128
Mercury	7439-97-6	0.0516	mg/kg	0.0265		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0133
Mercury	7439-97-6	0.0383	mg/kg	0.0323		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.0162
Mercury	7439-97-6	0.0124	mg/kg	0.0212	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	J	0.0106
Mercury	7439-97-6	0.07	mg/kg	0.14	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	0.14
Mercury	7439-97-6	0.065	mg/kg	0.13	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U	0.13
Mercury	7439-97-6	0.085	mg/kg	0.17	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	0.17
Mercury	7439-97-6	0.065	mg/kg	0.13	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	0.13
Mercury	7439-97-6	0.065	mg/kg	0.13	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	0.13
Mercury	7439-97-6	0.12	mg/kg	0.24	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	0.24
Methylnaphthalene, 2-	91-57-6	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.108
Methylnaphthalene, 2-	91-57-6	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.104
Methylnaphthalene, 2-	91-57-6	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.128
Methylnaphthalene, 2-	91-57-6	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.11
Methylnaphthalene, 2-	91-57-6	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.127
Methylnaphthalene, 2-	91-57-6	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.101
Methylnaphthalene, 2-	91-57-6	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.12
Methylnaphthalene, 2-	91-57-6	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.106
Methylnaphthalene, 2-	91-57-6	0.942	mg/kg	2.37	J	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	J	0.622
Methylnaphthalene, 2-	91-57-6	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.105
Methylnaphthalene, 2-	91-57-6	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.117
Methylnaphthalene, 2-	91-57-6	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.106
Methylnaphthalene, 2-	91-57-6	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.548

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Methylnaphthalene, 2-	91-57-6	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.123
Methylnaphthalene, 2-	91-57-6	0.363	mg/kg	0.536	QJ	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	J	0.141
Methylnaphthalene, 2-	91-57-6	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.106
Methylnaphthalene, 2-	91-57-6	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Methylnaphthalene, 2-	91-57-6	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylnaphthalene, 2-	91-57-6	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Methylnaphthalene, 2-	91-57-6	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Methylnaphthalene, 2-	91-57-6	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylnaphthalene, 2-	91-57-6	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Methylphenol, 2-	95-48-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00616
Methylphenol, 2-	95-48-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00598
Methylphenol, 2-	95-48-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00735
Methylphenol, 2-	95-48-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00629
Methylphenol, 2-	95-48-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00728
Methylphenol, 2-	95-48-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0058
Methylphenol, 2-	95-48-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00688
Methylphenol, 2-	95-48-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.006045
Methylphenol, 2-	95-48-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0356
Methylphenol, 2-	95-48-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00602
Methylphenol, 2-	95-48-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00672
Methylphenol, 2-	95-48-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00607
Methylphenol, 2-	95-48-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0313
Methylphenol, 2-	95-48-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00703
Methylphenol, 2-	95-48-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00805
Methylphenol, 2-	95-48-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00606
Methylphenol, 2-	95-48-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Methylphenol, 2-	95-48-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylphenol, 2-	95-48-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Methylphenol, 2-	95-48-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Methylphenol, 2-	95-48-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylphenol, 2-	95-48-7	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Methylphenol, 4-	106-44-5	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0128
Methylphenol, 4-	106-44-5	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0124
Methylphenol, 4-	106-44-5	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0153
Methylphenol, 4-	106-44-5	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0131
Methylphenol, 4-	106-44-5	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0151
Methylphenol, 4-	106-44-5	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0121
Methylphenol, 4-	106-44-5	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0143
Methylphenol, 4-	106-44-5	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0126
Methylphenol, 4-	106-44-5	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.074
Methylphenol, 4-	106-44-5	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0125
Methylphenol, 4-	106-44-5	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.014
Methylphenol, 4-	106-44-5	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0126
Methylphenol, 4-	106-44-5	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.06515
Methylphenol, 4-	106-44-5	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0146
Methylphenol, 4-	106-44-5	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0167
Methylphenol, 4-	106-44-5	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0126
Methylphenol, 4-	106-44-5	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Methylphenol, 4-	106-44-5	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylphenol, 4-	106-44-5	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Methylphenol, 4-	106-44-5	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Methylphenol, 4-	106-44-5	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Methylphenol, 4-	106-44-5	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Naphthalene	91-20-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00974
Naphthalene	91-20-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00944
Naphthalene	91-20-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0116
Naphthalene	91-20-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00994
Naphthalene	91-20-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0115
Naphthalene	91-20-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00917
Naphthalene	91-20-3	0.0661	mg/kg	0.458	J	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	J	0.0109
Naphthalene	91-20-3	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00955
Naphthalene	91-20-3	0.764	mg/kg	2.37	J	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	J	0.0562
Naphthalene	91-20-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00951
Naphthalene	91-20-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0106
Naphthalene	91-20-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00959
Naphthalene	91-20-3	0.6595	mg/kg	2.085	JU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JU	0.0495
Naphthalene	91-20-3	0.0553	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0111
Naphthalene	91-20-3	0.247	mg/kg	0.536	J	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	J	0.0127
Naphthalene	91-20-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00957
Naphthalene	91-20-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Naphthalene	91-20-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Naphthalene	91-20-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Naphthalene	91-20-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Naphthalene	91-20-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Naphthalene	91-20-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Nickel	7440-02-0	3.93	mg/kg	0.298	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.149
Nickel	7440-02-0	13.3	mg/kg	0.248	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.124
Nickel	7440-02-0	0.173	mg/kg	0.346	U	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	U	0.173
Nickel	7440-02-0	18.7	mg/kg	0.258	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.129
Nickel	7440-02-0	0.157	mg/kg	0.314	U	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1	U	0.157
Nickel	7440-02-0	1.71	mg/kg	0.294		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.147
Nickel	7440-02-0	0.1535	mg/kg	0.307	U	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	U	0.153
Nickel	7440-02-0	11.66	mg/kg	0.2825		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.1415
Nickel	7440-02-0	0.1545	mg/kg	0.309	U	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	U	0.155
Nickel	7440-02-0	0.1465	mg/kg	0.293	U	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	U	0.147
Nickel	7440-02-0	0.17	mg/kg	0.34	U	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.17
Nickel	7440-02-0	23.7	mg/kg	0.271	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.135
Nickel	7440-02-0	0.1428	mg/kg	0.2855	UU	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1	UU	0.143
Nickel	7440-02-0	0.1455	mg/kg	0.291	U	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	U	0.145
Nickel	7440-02-0	0.1815	mg/kg	0.363	U	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.181
Nickel	7440-02-0	13.5	mg/kg	0.251	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.126
Nickel	7440-02-0	28.7	mg/kg	5.65		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		5.65
Nickel	7440-02-0	16.1	mg/kg	5.2		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		5.2
Nickel	7440-02-0	21.1	mg/kg	6.7		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		6.7
Nickel	7440-02-0	44.3	mg/kg	5.1		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		5.1
Nickel	7440-02-0	16.7	mg/kg	5.2		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		5.2
Nickel	7440-02-0	79.2	mg/kg	9.8		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		9.8
Nitroaniline, 2-	88-74-4	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0177
Nitroaniline, 2-	88-74-4	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0172
Nitroaniline, 2-	88-74-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0212
Nitroaniline, 2-	88-74-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0181
Nitroaniline, 2-	88-74-4	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.021
Nitroaniline, 2-	88-74-4	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0167
Nitroaniline, 2-	88-74-4	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0198
Nitroaniline, 2-	88-74-4	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0174
Nitroaniline, 2-	88-74-4	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.103
Nitroaniline, 2-	88-74-4	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0173
Nitroaniline, 2-	88-74-4	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0194
Nitroaniline, 2-	88-74-4	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0175
Nitroaniline, 2-	88-74-4	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.09025
Nitroaniline, 2-	88-74-4	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0202
Nitroaniline, 2-	88-74-4	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0232
Nitroaniline, 2-	88-74-4	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0174
Nitroaniline, 2-	88-74-4	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Nitroaniline, 2-	88-74-4	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 2-	88-74-4	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Nitroaniline, 2-	88-74-4	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Nitroaniline, 2-	88-74-4	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 2-	88-74-4	1	mg/kg	2	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Nitroaniline, 3-	99-09-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0139
Nitroaniline, 3-	99-09-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0135
Nitroaniline, 3-	99-09-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0166
Nitroaniline, 3-	99-09-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0142
Nitroaniline, 3-	99-09-2	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0164
Nitroaniline, 3-	99-09-2	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0131
Nitroaniline, 3-	99-09-2	0.229	mg/kg	0.458	UJ	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0155
Nitroaniline, 3-	99-09-2	0.2013	mg/kg	0.4025	UJUJ	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.01365
Nitroaniline, 3-	99-09-2	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0804
Nitroaniline, 3-	99-09-2	0.2005	mg/kg	0.401	UJ	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0136
Nitroaniline, 3-	99-09-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0152
Nitroaniline, 3-	99-09-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0137
Nitroaniline, 3-	99-09-2	1.0425	mg/kg	2.085	UJUJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07085
Nitroaniline, 3-	99-09-2	0.234	mg/kg	0.468	UJ	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0159
Nitroaniline, 3-	99-09-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0182
Nitroaniline, 3-	99-09-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0137
Nitroaniline, 3-	99-09-2	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Nitroaniline, 3-	99-09-2	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 3-	99-09-2	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Nitroaniline, 3-	99-09-2	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Nitroaniline, 3-	99-09-2	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 3-	99-09-2	1	mg/kg	2	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Nitroaniline, 4-	100-01-6	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.145
Nitroaniline, 4-	100-01-6	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.141
Nitroaniline, 4-	100-01-6	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.173
Nitroaniline, 4-	100-01-6	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.148
Nitroaniline, 4-	100-01-6	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.172
Nitroaniline, 4-	100-01-6	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.137
Nitroaniline, 4-	100-01-6	0.229	mg/kg	0.458	UJ	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.162
Nitroaniline, 4-	100-01-6	0.2013	mg/kg	0.4025	UJUJ	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.1425
Nitroaniline, 4-	100-01-6	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.84

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Nitroaniline, 4-	100-01-6	0.2005	mg/kg	0.401	UJ	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.142
Nitroaniline, 4-	100-01-6	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.159
Nitroaniline, 4-	100-01-6	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.143
Nitroaniline, 4-	100-01-6	1.0425	mg/kg	2.085	UJUJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.7395
Nitroaniline, 4-	100-01-6	0.234	mg/kg	0.468	UJ	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.166
Nitroaniline, 4-	100-01-6	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.19
Nitroaniline, 4-	100-01-6	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.143
Nitroaniline, 4-	100-01-6	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Nitroaniline, 4-	100-01-6	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 4-	100-01-6	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Nitroaniline, 4-	100-01-6	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Nitroaniline, 4-	100-01-6	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitroaniline, 4-	100-01-6	1	mg/kg	2	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Nitrobenzene	98-95-3	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0134
Nitrobenzene	98-95-3	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Nitrobenzene	98-95-3	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Nitrobenzene	98-95-3	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.013
Nitrobenzene	98-95-3	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.016
Nitrobenzene	98-95-3	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Nitrobenzene	98-95-3	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0137
Nitrobenzene	98-95-3	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Nitrobenzene	98-95-3	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0159
Nitrobenzene	98-95-3	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Nitrobenzene	98-95-3	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Nitrobenzene	98-95-3	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0127
Nitrobenzene	98-95-3	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.015
Nitrobenzene	98-95-3	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Nitrobenzene	98-95-3	0.1818	mg/kg	0.3635	UU	ASH PIT 1-SB04	AP0011AP0011	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0876
Nitrobenzene	98-95-3	0.177	mg/kg	0.354	UU	ASH PIT 1-SB04	AP0012AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0831
Nitrobenzene	98-95-3	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0776
Nitrobenzene	98-95-3	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Nitrobenzene	98-95-3	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Nitrobenzene	98-95-3	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0131
Nitrobenzene	98-95-3	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0147
Nitrobenzene	98-95-3	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Nitrobenzene	98-95-3	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Nitrobenzene	98-95-3	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0132
Nitrobenzene	98-95-3	0.608	mg/kg	1.216	UJU	ASH PIT 1-SB08	AP0023AP0023	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1104
Nitrobenzene	98-95-3	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0153
Nitrobenzene	98-95-3	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Nitrobenzene	98-95-3	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0176
Nitrobenzene	98-95-3	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Nitrobenzene	98-95-3	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0132
Nitrobenzene	98-95-3	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Nitrobenzene	98-95-3	0.5798	mg/kg	1.1595	UJU	ASH PIT 1-SB08	AP0063AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1034
Nitrobenzene	98-95-3	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Nitrobenzene	98-95-3	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Nitrobenzene	98-95-3	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Nitrobenzene	98-95-3	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Nitrobenzene	98-95-3	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Nitrobenzene	98-95-3	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Nitrophenol, 2-	88-75-5	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0145
Nitrophenol, 2-	88-75-5	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0141
Nitrophenol, 2-	88-75-5	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0173
Nitrophenol, 2-	88-75-5	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0148
Nitrophenol, 2-	88-75-5	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0172
Nitrophenol, 2-	88-75-5	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0137
Nitrophenol, 2-	88-75-5	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0162
Nitrophenol, 2-	88-75-5	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.01425
Nitrophenol, 2-	88-75-5	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.084
Nitrophenol, 2-	88-75-5	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0142
Nitrophenol, 2-	88-75-5	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0159
Nitrophenol, 2-	88-75-5	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0143
Nitrophenol, 2-	88-75-5	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07395
Nitrophenol, 2-	88-75-5	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0166
Nitrophenol, 2-	88-75-5	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.019
Nitrophenol, 2-	88-75-5	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0143
Nitrophenol, 2-	88-75-5	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Nitrophenol, 2-	88-75-5	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Nitrophenol, 2-	88-75-5	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Nitrophenol, 2-	88-75-5	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Nitrophenol, 2-	88-75-5	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Nitrophenol, 2-	88-75-5	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Nitrophenol, 4-	100-02-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0333
Nitrophenol, 4-	100-02-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0323

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Nitrophenol, 4-	100-02-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0397
Nitrophenol, 4-	100-02-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.034
Nitrophenol, 4-	100-02-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0393
Nitrophenol, 4-	100-02-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0313
Nitrophenol, 4-	100-02-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0372
Nitrophenol, 4-	100-02-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.03265
Nitrophenol, 4-	100-02-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.192
Nitrophenol, 4-	100-02-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0325
Nitrophenol, 4-	100-02-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0363
Nitrophenol, 4-	100-02-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0328
Nitrophenol, 4-	100-02-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1695
Nitrophenol, 4-	100-02-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0379
Nitrophenol, 4-	100-02-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0435
Nitrophenol, 4-	100-02-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0327
Nitrophenol, 4-	100-02-7	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Nitrophenol, 4-	100-02-7	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitrophenol, 4-	100-02-7	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Nitrophenol, 4-	100-02-7	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Nitrophenol, 4-	100-02-7	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Nitrophenol, 4-	100-02-7	1	mg/kg	2	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2
Nitrotoluene, 2-	88-72-2	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Nitrotoluene, 2-	88-72-2	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Nitrotoluene, 2-	88-72-2	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Nitrotoluene, 2-	88-72-2	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Nitrotoluene, 2-	88-72-2	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Nitrotoluene, 2-	88-72-2	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Nitrotoluene, 2-	88-72-2	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Nitrotoluene, 2-	88-72-2	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Nitrotoluene, 2-	88-72-2	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Nitrotoluene, 2-	88-72-2	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Nitrotoluene, 2-	88-72-2	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Nitrotoluene, 2-	88-72-2	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Nitrotoluene, 2-	88-72-2	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Nitrotoluene, 2-	88-72-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Nitrotoluene, 2-	88-72-2	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Nitrotoluene, 2-	88-72-2	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Nitrotoluene, 3-	99-08-1	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Nitrotoluene, 3-	99-08-1	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Nitrotoluene, 3-	99-08-1	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Nitrotoluene, 3-	99-08-1	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Nitrotoluene, 3-	99-08-1	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Nitrotoluene, 3-	99-08-1	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Nitrotoluene, 3-	99-08-1	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Nitrotoluene, 3-	99-08-1	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Nitrotoluene, 3-	99-08-1	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Nitrotoluene, 3-	99-08-1	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Nitrotoluene, 3-	99-08-1	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Nitrotoluene, 3-	99-08-1	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Nitrotoluene, 3-	99-08-1	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Nitrotoluene, 3-	99-08-1	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Nitrotoluene, 3-	99-08-1	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Nitrotoluene, 3-	99-08-1	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Nitrotoluene, 4-	99-99-0	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Nitrotoluene, 4-	99-99-0	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Nitrotoluene, 4-	99-99-0	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Nitrotoluene, 4-	99-99-0	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Nitrotoluene, 4-	99-99-0	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Nitrotoluene, 4-	99-99-0	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Nitrotoluene, 4-	99-99-0	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Nitrotoluene, 4-	99-99-0	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Nitrotoluene, 4-	99-99-0	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Nitrotoluene, 4-	99-99-0	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Nitrotoluene, 4-	99-99-0	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Nitrotoluene, 4-	99-99-0	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Nitrotoluene, 4-	99-99-0	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Nitrotoluene, 4-	99-99-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Nitrotoluene, 4-	99-99-0	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Nitrotoluene, 4-	99-99-0	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
n-Nitrosodimethylamine	62-75-9	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0123
n-Nitrosodimethylamine	62-75-9	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.012
n-Nitrosodimethylamine	62-75-9	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0147
n-Nitrosodimethylamine	62-75-9	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0126
n-Nitrosodimethylamine	62-75-9	0.2425	mg/kg	0.485	UJ	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0146
n-Nitrosodimethylamine	62-75-9	0.193	mg/kg	0.386	UJ	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0116
n-Nitrosodimethylamine	62-75-9	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0138

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
n-Nitrosodimethylamine	62-75-9	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0121
n-Nitrosodimethylamine	62-75-9	1.185	mg/kg	2.37	UJ	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0712
n-Nitrosodimethylamine	62-75-9	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.012
n-Nitrosodimethylamine	62-75-9	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0134
n-Nitrosodimethylamine	62-75-9	0.202	mg/kg	0.404	UJ	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0121
n-Nitrosodimethylamine	62-75-9	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0627
n-Nitrosodimethylamine	62-75-9	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0141
n-Nitrosodimethylamine	62-75-9	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0161
n-Nitrosodimethylamine	62-75-9	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0121
n-Nitroso-di-n-propylamine	621-64-7	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0147
n-Nitroso-di-n-propylamine	621-64-7	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0142
n-Nitroso-di-n-propylamine	621-64-7	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0175
n-Nitroso-di-n-propylamine	621-64-7	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.015
n-Nitroso-di-n-propylamine	621-64-7	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0173
n-Nitroso-di-n-propylamine	621-64-7	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0138
n-Nitroso-di-n-propylamine	621-64-7	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0164
n-Nitroso-di-n-propylamine	621-64-7	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0144
n-Nitroso-di-n-propylamine	621-64-7	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0847
n-Nitroso-di-n-propylamine	621-64-7	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0143
n-Nitroso-di-n-propylamine	621-64-7	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.016
n-Nitroso-di-n-propylamine	621-64-7	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0144
n-Nitroso-di-n-propylamine	621-64-7	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.07455
n-Nitroso-di-n-propylamine	621-64-7	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0167
n-Nitroso-di-n-propylamine	621-64-7	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0192
n-Nitroso-di-n-propylamine	621-64-7	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0144
n-Nitroso-di-n-propylamine	621-64-7	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
n-Nitroso-di-n-propylamine	621-64-7	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
n-Nitroso-di-n-propylamine	621-64-7	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
n-Nitroso-di-n-propylamine	621-64-7	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
n-Nitroso-di-n-propylamine	621-64-7	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
n-Nitroso-di-n-propylamine	621-64-7	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
n-Nitrosodiphenylamine	86-30-6	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00579
n-Nitrosodiphenylamine	86-30-6	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00562
n-Nitrosodiphenylamine	86-30-6	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00691
n-Nitrosodiphenylamine	86-30-6	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00591
n-Nitrosodiphenylamine	86-30-6	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00684
n-Nitrosodiphenylamine	86-30-6	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00545
n-Nitrosodiphenylamine	86-30-6	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00647
n-Nitrosodiphenylamine	86-30-6	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00568
n-Nitrosodiphenylamine	86-30-6	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0335
n-Nitrosodiphenylamine	86-30-6	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00566
n-Nitrosodiphenylamine	86-30-6	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00632
n-Nitrosodiphenylamine	86-30-6	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0057
n-Nitrosodiphenylamine	86-30-6	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.02945
n-Nitrosodiphenylamine	86-30-6	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00661
n-Nitrosodiphenylamine	86-30-6	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00757
n-Nitrosodiphenylamine	86-30-6	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00569
n-Nitrosodiphenylamine	86-30-6	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
n-Nitrosodiphenylamine	86-30-6	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
n-Nitrosodiphenylamine	86-30-6	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
n-Nitrosodiphenylamine	86-30-6	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
n-Nitrosodiphenylamine	86-30-6	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
n-Nitrosodiphenylamine	86-30-6	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Pentachlorophenol	87-86-5	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0369
Pentachlorophenol	87-86-5	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0357
Pentachlorophenol	87-86-5	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.044
Pentachlorophenol	87-86-5	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0376
Pentachlorophenol	87-86-5	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0435
Pentachlorophenol	87-86-5	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0347
Pentachlorophenol	87-86-5	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0411
Pentachlorophenol	87-86-5	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.03615
Pentachlorophenol	87-86-5	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.213
Pentachlorophenol	87-86-5	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.036
Pentachlorophenol	87-86-5	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0402
Pentachlorophenol	87-86-5	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0363
Pentachlorophenol	87-86-5	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.1875
Pentachlorophenol	87-86-5	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.042
Pentachlorophenol	87-86-5	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0482
Pentachlorophenol	87-86-5	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0362
Pentachlorophenol	87-86-5	0.55	mg/kg	1.1	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	1.1
Pentachlorophenol	87-86-5	0.5	mg/kg	1	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Pentachlorophenol	87-86-5	0.65	mg/kg	1.3	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1.3
Pentachlorophenol	87-86-5	0.5	mg/kg	1	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	1
Pentachlorophenol	87-86-5	0.5	mg/kg	1	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	1
Pentachlorophenol	87-86-5	1	mg/kg	2	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	2

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Phenanthrene	85-01-8	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00998
Phenanthrene	85-01-8	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00968
Phenanthrene	85-01-8	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0119
Phenanthrene	85-01-8	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0102
Phenanthrene	85-01-8	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0118
Phenanthrene	85-01-8	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0094
Phenanthrene	85-01-8	0.055	mg/kg	0.458	J	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	J	0.0111
Phenanthrene	85-01-8	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00979
Phenanthrene	85-01-8	0.275	mg/kg	2.37	J	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	J	0.0577
Phenanthrene	85-01-8	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00975
Phenanthrene	85-01-8	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0109
Phenanthrene	85-01-8	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00983
Phenanthrene	85-01-8	0.831	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.0508
Phenanthrene	85-01-8	0.075	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0114
Phenanthrene	85-01-8	0.156	mg/kg	0.536	J	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	J	0.013
Phenanthrene	85-01-8	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00981
Phenanthrene	85-01-8	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Phenanthrene	85-01-8	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Phenanthrene	85-01-8	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Phenanthrene	85-01-8	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Phenanthrene	85-01-8	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Phenanthrene	85-01-8	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Phenol	108-95-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.00493
Phenol	108-95-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.00478
Phenol	108-95-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00588
Phenol	108-95-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.00503
Phenol	108-95-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.00582
Phenol	108-95-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00464
Phenol	108-95-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0055
Phenol	108-95-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.004835
Phenol	108-95-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0285
Phenol	108-95-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00481
Phenol	108-95-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.00538
Phenol	108-95-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00485
Phenol	108-95-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.02505
Phenol	108-95-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00562
Phenol	108-95-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.00644
Phenol	108-95-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00485
Phenol	108-95-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Phenol	108-95-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Phenol	108-95-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Phenol	108-95-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Phenol	108-95-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Phenol	108-95-2	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Potassium	7440-09-7	577	mg/kg	24.8	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		12.4
Potassium	7440-09-7	1130	mg/kg	20.7	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		10.3
Potassium	7440-09-7	1190	mg/kg	28.8	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		14.4
Potassium	7440-09-7	1110	mg/kg	21.5	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		10.8
Potassium	7440-09-7	1260	mg/kg	26.1		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		13.1
Potassium	7440-09-7	299	mg/kg	24.5		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		12.3
Potassium	7440-09-7	1280	mg/kg	25.6		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		12.8
Potassium	7440-09-7	289.5	mg/kg	23.55		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		11.8
Potassium	7440-09-7	1160	mg/kg	25.8		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		12.9
Potassium	7440-09-7	164	mg/kg	24.4		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		12.2
Potassium	7440-09-7	643	mg/kg	28.4	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		14.2
Potassium	7440-09-7	1580	mg/kg	22.6	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		11.3
Potassium	7440-09-7	654	mg/kg	23.8		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		11.9
Potassium	7440-09-7	559	mg/kg	24.2		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		12.1
Potassium	7440-09-7	1040	mg/kg	30.2	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		15.1
Potassium	7440-09-7	1010	mg/kg	20.9	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		10.5
Potassium	7440-09-7	873.5	mg/kg	707		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		707
Potassium	7440-09-7	1090	mg/kg	654		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		654
Potassium	7440-09-7	417.5	mg/kg	835	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	835
Potassium	7440-09-7	1720	mg/kg	632		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		632
Potassium	7440-09-7	781	mg/kg	648		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		648
Potassium	7440-09-7	610	mg/kg	1220	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	1220
Pyrene	129-00-0	0.0378	mg/kg	0.41	QJ	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	J	0.0164
Pyrene	129-00-0	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0159
Pyrene	129-00-0	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0196
Pyrene	129-00-0	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0167
Pyrene	129-00-0	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0194
Pyrene	129-00-0	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0154
Pyrene	129-00-0	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0183
Pyrene	129-00-0	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0161
Pyrene	129-00-0	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0947

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Pyrene	129-00-0	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.016
Pyrene	129-00-0	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0179
Pyrene	129-00-0	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0161
Pyrene	129-00-0	1.32	mg/kg	2.085	JJ	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	JJ	0.08335
Pyrene	129-00-0	0.102	mg/kg	0.468	J	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	J	0.0187
Pyrene	129-00-0	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0214
Pyrene	129-00-0	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0161
Pyrene	129-00-0	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Pyrene	129-00-0	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Pyrene	129-00-0	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Pyrene	129-00-0	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Pyrene	129-00-0	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Pyrene	129-00-0	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
RDX	121-82-4	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
RDX	121-82-4	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
RDX	121-82-4	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
RDX	121-82-4	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
RDX	121-82-4	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
RDX	121-82-4	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
RDX	121-82-4	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
RDX	121-82-4	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
RDX	121-82-4	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
RDX	121-82-4	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
RDX	121-82-4	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
RDX	121-82-4	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
RDX	121-82-4	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
RDX	121-82-4	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
RDX	121-82-4	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Selenium	7782-49-2	0.4595	mg/kg	0.919	UJ	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.46
Selenium	7782-49-2	0.515	mg/kg	1.03	UJ	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	U	0.514
Selenium	7782-49-2	0.618	mg/kg	1.19	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	J	0.595
Selenium	7782-49-2	0.4785	mg/kg	0.957	UJ	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	U	0.479
Selenium	7782-49-2	0.567	mg/kg	1.05	J	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1	J	0.526
Selenium	7782-49-2	0.449	mg/kg	0.898	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.449
Selenium	7782-49-2	0.6	mg/kg	1.06	J	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	J	0.531
Selenium	7782-49-2	0.4228	mg/kg	0.8455	UU	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4	UU	0.423
Selenium	7782-49-2	0.592	mg/kg	1.1	J	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	J	0.551
Selenium	7782-49-2	0.481	mg/kg	0.962	U	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	U	0.481
Selenium	7782-49-2	0.575	mg/kg	1.15	UJ	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.577
Selenium	7782-49-2	0.4545	mg/kg	0.909	UJ	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	U	0.455
Selenium	7782-49-2	0.4973	mg/kg	0.9515	JU	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1	JU	0.476
Selenium	7782-49-2	0.559	mg/kg	1.06	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	J	0.531
Selenium	7782-49-2	0.61	mg/kg	1.22	UJ	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.61
Selenium	7782-49-2	0.4665	mg/kg	0.933	UJ	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	U	0.467
Selenium	7782-49-2	0.665	mg/kg	0.71	/U	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	U	0.71
Selenium	7782-49-2	0.65	mg/kg	1.3	U,G	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U,G	1.3
Selenium	7782-49-2	1.2	mg/kg	0.84		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		0.84
Selenium	7782-49-2	0.97	mg/kg	0.63		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		0.63
Selenium	7782-49-2	2.7	mg/kg	0.65		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		0.65
Selenium	7782-49-2	2.6	mg/kg	1.2		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		1.2
Silver	7440-22-4	0.248	mg/kg	0.496	U	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.248
Silver	7440-22-4	0.2065	mg/kg	0.413	U	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	U	0.207
Silver	7440-22-4	0.288	mg/kg	0.576	U	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	U	0.288
Silver	7440-22-4	0.2155	mg/kg	0.431	U	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	U	0.215
Silver	7440-22-4	0.2615	mg/kg	0.523	U	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1	U	0.261
Silver	7440-22-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.245
Silver	7440-22-4	0.2555	mg/kg	0.511	U	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	U	0.256
Silver	7440-22-4	0.2358	mg/kg	0.4715	UU	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4	UU	0.2355
Silver	7440-22-4	0.258	mg/kg	0.516	U	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	U	0.258
Silver	7440-22-4	0.2445	mg/kg	0.489	U	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	U	0.244
Silver	7440-22-4	0.2835	mg/kg	0.567	U	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.284
Silver	7440-22-4	0.2255	mg/kg	0.451	U	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	U	0.226
Silver	7440-22-4	0.238	mg/kg	0.476	UU	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1	UU	0.238
Silver	7440-22-4	0.242	mg/kg	0.484	UJ	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	U	0.242
Silver	7440-22-4	0.3025	mg/kg	0.605	U	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.302
Silver	7440-22-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	U	0.209
Silver	7440-22-4	0.355	mg/kg	0.71	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	0.71
Silver	7440-22-4	0.325	mg/kg	0.65	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U	0.65
Silver	7440-22-4	0.42	mg/kg	0.84	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	0.84
Silver	7440-22-4	0.315	mg/kg	0.63	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	0.63
Silver	7440-22-4	0.325	mg/kg	0.65	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	0.65
Silver	7440-22-4	0.6	mg/kg	1.2	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	1.2
Sodium	7440-23-5	57.6	mg/kg	9.93		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		4.96
Sodium	7440-23-5	96	mg/kg	8.26		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		4.13
Sodium	7440-23-5	114	mg/kg	11.5		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		5.76

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Sodium	7440-23-5	131	mg/kg	8.61		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		4.31
Sodium	7440-23-5	96.8	mg/kg	10.5		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		5.23
Sodium	7440-23-5	61.3	mg/kg	9.8		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		4.9
Sodium	7440-23-5	119	mg/kg	10.2		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		5.11
Sodium	7440-23-5	25	mg/kg	9.425		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		4.715
Sodium	7440-23-5	165	mg/kg	10.3		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		5.16
Sodium	7440-23-5	34.9	mg/kg	9.78		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		4.89
Sodium	7440-23-5	70.4	mg/kg	11.3		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		5.67
Sodium	7440-23-5	117	mg/kg	9.03		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		4.51
Sodium	7440-23-5	89.15	mg/kg	9.535	JJ	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		4.76
Sodium	7440-23-5	87.4	mg/kg	9.69		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		4.84
Sodium	7440-23-5	161	mg/kg	12.1		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		6.05
Sodium	7440-23-5	111	mg/kg	8.38		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		4.19
Sodium	7440-23-5	353.5	mg/kg	707	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	707
Sodium	7440-23-5	327	mg/kg	654	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U	654
Sodium	7440-23-5	417.5	mg/kg	835	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	835
Sodium	7440-23-5	316	mg/kg	632	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	632
Sodium	7440-23-5	324	mg/kg	648	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	648
Sodium	7440-23-5	610	mg/kg	1220	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	1220
Tetryl	479-45-8	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Tetryl	479-45-8	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Tetryl	479-45-8	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Tetryl	479-45-8	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Tetryl	479-45-8	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Tetryl	479-45-8	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Tetryl	479-45-8	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Tetryl	479-45-8	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Tetryl	479-45-8	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Tetryl	479-45-8	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Tetryl	479-45-8	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Tetryl	479-45-8	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Tetryl	479-45-8	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Tetryl	479-45-8	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Tetryl	479-45-8	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Tetryl	479-45-8	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Thallium	7440-28-0	0.23	mg/kg	0.46	U	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5	U	0.23
Thallium	7440-28-0	0.366	mg/kg	0.514	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5	J	0.257
Thallium	7440-28-0	0.2975	mg/kg	0.595	U	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1	U	0.297
Thallium	7440-28-0	0.343	mg/kg	0.479	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8	J	0.239
Thallium	7440-28-0	0.563	mg/kg	0.526		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.263
Thallium	7440-28-0	0.2245	mg/kg	0.449	U	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5	U	0.224
Thallium	7440-28-0	0.356	mg/kg	0.531	J	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1	J	0.266
Thallium	7440-28-0	0.2115	mg/kg	0.423	UU	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4	UU	0.2115
Thallium	7440-28-0	0.303	mg/kg	0.551	J	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1	J	0.276
Thallium	7440-28-0	0.2405	mg/kg	0.481	U	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7	U	0.241
Thallium	7440-28-0	0.2885	mg/kg	0.577	U	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8	U	0.288
Thallium	7440-28-0	0.239	mg/kg	0.455	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8	J	0.227
Thallium	7440-28-0	0.274	mg/kg	0.476	JJ	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1	JJ	0.2375
Thallium	7440-28-0	0.275	mg/kg	0.531	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5	J	0.265
Thallium	7440-28-0	0.305	mg/kg	0.61	U	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1	U	0.305
Thallium	7440-28-0	0.2335	mg/kg	0.467	U	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4	U	0.233
Thallium	7440-28-0	0.7	mg/kg	1.4	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	UU	1.4
Thallium	7440-28-0	1.3	mg/kg	2.6	U,G	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	U,G	2.6
Thallium	7440-28-0	0.85	mg/kg	1.7	U	PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	U	1.7
Thallium	7440-28-0	0.65	mg/kg	1.3	U	PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	U	1.3
Thallium	7440-28-0	0.65	mg/kg	1.3	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	U	1.3
Thallium	7440-28-0	1.2	mg/kg	2.4	U	PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	U	2.4
Total organic carbon	10-35-5	55.3	mg/kg	24.8	J	ASH PIT 1-SB01	AP0001	TOC-W	REG	8-Dec-08	0.5	1.5	B	0.62
Total organic carbon	10-35-5	65	mg/kg	130	U	PBOW99-SBA102A	PBOW99SBA102A	TOC	REG	10-Jun-99	0	1	U	130
Total organic carbon	10-35-5	1900	mg/kg	130		PBOW99-SBA103B	PBOW99SBA103B	TOC	REG	10-Jun-99	1	4		130
Trichlorobenzene, 1,2,4-	120-82-1	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0101
Trichlorobenzene, 1,2,4-	120-82-1	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0098
Trichlorobenzene, 1,2,4-	120-82-1	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0121
Trichlorobenzene, 1,2,4-	120-82-1	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0103
Trichlorobenzene, 1,2,4-	120-82-1	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0119
Trichlorobenzene, 1,2,4-	120-82-1	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.00952
Trichlorobenzene, 1,2,4-	120-82-1	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0113
Trichlorobenzene, 1,2,4-	120-82-1	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.00991
Trichlorobenzene, 1,2,4-	120-82-1	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0584
Trichlorobenzene, 1,2,4-	120-82-1	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.00987
Trichlorobenzene, 1,2,4-	120-82-1	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.011
Trichlorobenzene, 1,2,4-	120-82-1	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.00995
Trichlorobenzene, 1,2,4-	120-82-1	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.0514
Trichlorobenzene, 1,2,4-	120-82-1	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0115
Trichlorobenzene, 1,2,4-	120-82-1	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0132

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Trichlorobenzene, 1,2,4-	120-82-1	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.00993
Trichlorobenzene, 1,2,4-	120-82-1	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Trichlorobenzene, 1,2,4-	120-82-1	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorobenzene, 1,2,4-	120-82-1	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Trichlorobenzene, 1,2,4-	120-82-1	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Trichlorobenzene, 1,2,4-	120-82-1	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorobenzene, 1,2,4-	120-82-1	0.405	mg/kg	0.81	U	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Trichlorophenol, 2,4,5-	95-95-4	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0352
Trichlorophenol, 2,4,5-	95-95-4	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0342
Trichlorophenol, 2,4,5-	95-95-4	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.042
Trichlorophenol, 2,4,5-	95-95-4	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.036
Trichlorophenol, 2,4,5-	95-95-4	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0416
Trichlorophenol, 2,4,5-	95-95-4	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0332
Trichlorophenol, 2,4,5-	95-95-4	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0394
Trichlorophenol, 2,4,5-	95-95-4	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.03455
Trichlorophenol, 2,4,5-	95-95-4	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.204
Trichlorophenol, 2,4,5-	95-95-4	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0344
Trichlorophenol, 2,4,5-	95-95-4	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0384
Trichlorophenol, 2,4,5-	95-95-4	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0347
Trichlorophenol, 2,4,5-	95-95-4	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.179
Trichlorophenol, 2,4,5-	95-95-4	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0402
Trichlorophenol, 2,4,5-	95-95-4	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0461
Trichlorophenol, 2,4,5-	95-95-4	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0346
Trichlorophenol, 2,4,5-	95-95-4	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Trichlorophenol, 2,4,5-	95-95-4	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorophenol, 2,4,5-	95-95-4	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Trichlorophenol, 2,4,5-	95-95-4	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Trichlorophenol, 2,4,5-	95-95-4	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorophenol, 2,4,5-	95-95-4	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Trichlorophenol, 2,4,6-	88-06-2	0.205	mg/kg	0.41	U	ASH PIT 1-SB01	AP0001	SEMIVOLATILES	REG	8-Dec-08	0.5	1.5	U	0.0277
Trichlorophenol, 2,4,6-	88-06-2	0.199	mg/kg	0.398	U	ASH PIT 1-SB01	AP0002	SEMIVOLATILES	REG	8-Dec-08	3.5	5.5	U	0.0269
Trichlorophenol, 2,4,6-	88-06-2	0.245	mg/kg	0.49	U	ASH PIT 1-SB02	AP0004	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0331
Trichlorophenol, 2,4,6-	88-06-2	0.2095	mg/kg	0.419	U	ASH PIT 1-SB02	AP0005	SEMIVOLATILES	REG	8-Dec-08	3	3.8	U	0.0283
Trichlorophenol, 2,4,6-	88-06-2	0.2425	mg/kg	0.485	U	ASH PIT 1-SB03	AP0007	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.0327
Trichlorophenol, 2,4,6-	88-06-2	0.193	mg/kg	0.386	U	ASH PIT 1-SB03	AP0008	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0261
Trichlorophenol, 2,4,6-	88-06-2	0.229	mg/kg	0.458	U	ASH PIT 1-SB04	AP0010	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.031
Trichlorophenol, 2,4,6-	88-06-2	0.2013	mg/kg	0.4025	UU	ASH PIT 1-SB04	AP0011AP0012	SEMIVOLATILES	AVGD	39791	3	4	UU	0.0272
Trichlorophenol, 2,4,6-	88-06-2	1.185	mg/kg	2.37	U	ASH PIT 1-SB05	AP0014	SEMIVOLATILES	REG	9-Dec-08	0	1	U	0.16
Trichlorophenol, 2,4,6-	88-06-2	0.2005	mg/kg	0.401	U	ASH PIT 1-SB05	AP0015	SEMIVOLATILES	REG	9-Dec-08	3	3.7	U	0.0271
Trichlorophenol, 2,4,6-	88-06-2	0.224	mg/kg	0.448	U	ASH PIT 1-SB06	AP0017	SEMIVOLATILES	REG	8-Dec-08	0.8	1.8	U	0.0302
Trichlorophenol, 2,4,6-	88-06-2	0.202	mg/kg	0.404	U	ASH PIT 1-SB06	AP0018	SEMIVOLATILES	REG	8-Dec-08	5	5.8	U	0.0273
Trichlorophenol, 2,4,6-	88-06-2	1.0425	mg/kg	2.085	UU	ASH PIT 1-SB08	AP0023AP0063	SEMIVOLATILES	AVGD	39791	0	1	UU	0.141
Trichlorophenol, 2,4,6-	88-06-2	0.234	mg/kg	0.468	U	ASH PIT 1-SB08	AP0024	SEMIVOLATILES	REG	9-Dec-08	3	5	U	0.0316
Trichlorophenol, 2,4,6-	88-06-2	0.268	mg/kg	0.536	U	ASH PIT 1-SB09	AP0026	SEMIVOLATILES	REG	8-Dec-08	0	1	U	0.0362
Trichlorophenol, 2,4,6-	88-06-2	0.2015	mg/kg	0.403	U	ASH PIT 1-SB09	AP0027	SEMIVOLATILES	REG	8-Dec-08	3	4	U	0.0273
Trichlorophenol, 2,4,6-	88-06-2	0.2325	mg/kg	0.465	UU	PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	SEMIVOLATILES	AVGD	36322	0	0.5	UU	0.465
Trichlorophenol, 2,4,6-	88-06-2	0.215	mg/kg	0.43	U	PBOW99-SBA102A	PBOW99SBA102A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorophenol, 2,4,6-	88-06-2	0.275	mg/kg	0.55	U	PBOW99-SBA103A	PBOW99SBA103A	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.55
Trichlorophenol, 2,4,6-	88-06-2	0.21	mg/kg	0.42	U	PBOW99-SBA103B	PBOW99SBA103B	SEMIVOLATILES	REG	10-Jun-99	1	4	U	0.42
Trichlorophenol, 2,4,6-	88-06-2	0.215	mg/kg	0.43	U	PBOW99-SBA104B	PBOW99SBA104B	SEMIVOLATILES	REG	10-Jun-99	0	1	U	0.43
Trichlorophenol, 2,4,6-	88-06-2	0.405	mg/kg	0.81	UJ	PBOW99-SSA101	PBOW99SSA101	SEMIVOLATILES	REG	10-Jun-99	0	0	U	0.81
Trinitrobenzene, 1,3,5-	99-35-4	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Trinitrobenzene, 1,3,5-	99-35-4	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Trinitrobenzene, 1,3,5-	99-35-4	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Trinitrobenzene, 1,3,5-	99-35-4	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Trinitrobenzene, 1,3,5-	99-35-4	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Trinitrobenzene, 1,3,5-	99-35-4	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Trinitrobenzene, 1,3,5-	99-35-4	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Trinitrobenzene, 1,3,5-	99-35-4	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575
Trinitrobenzene, 1,3,5-	99-35-4	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Trinitrobenzene, 1,3,5-	99-35-4	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Trinitrobenzene, 1,3,5-	99-35-4	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Trinitrobenzene, 1,3,5-	99-35-4	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Trinitrobenzene, 1,3,5-	99-35-4	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Trinitrobenzene, 1,3,5-	99-35-4	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Trinitrobenzene, 1,3,5-	99-35-4	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Trinitrobenzene, 1,3,5-	99-35-4	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Trinitrotoluene, 2,4,6-	118-96-7	0.158	mg/kg	0.316	UJ	ASH PIT 1-SB01	AP0001	EXPLOSIVES	REG	8-Dec-08	0.5	1.5	U	0.158
Trinitrotoluene, 2,4,6-	118-96-7	0.145	mg/kg	0.29	U	ASH PIT 1-SB01	AP0002	EXPLOSIVES	REG	8-Dec-08	3.5	5.5	U	0.145
Trinitrotoluene, 2,4,6-	118-96-7	0.1495	mg/kg	0.299	UJ	ASH PIT 1-SB02	AP0004	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.149
Trinitrotoluene, 2,4,6-	118-96-7	0.143	mg/kg	0.286	UJ	ASH PIT 1-SB02	AP0005	EXPLOSIVES	REG	8-Dec-08	3	3.8	U	0.143
Trinitrotoluene, 2,4,6-	118-96-7	0.1525	mg/kg	0.305	UJ	ASH PIT 1-SB03	AP0007	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.152
Trinitrotoluene, 2,4,6-	118-96-7	0.148	mg/kg	0.296	U	ASH PIT 1-SB03	AP0008	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.148
Trinitrotoluene, 2,4,6-	118-96-7	0.137	mg/kg	0.274	UJ	ASH PIT 1-SB04	AP0010	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.137
Trinitrotoluene, 2,4,6-	118-96-7	0.1575	mg/kg	0.315	UU	ASH PIT 1-SB04	AP0011AP0012	EXPLOSIVES	AVGD	39791	3	4	UU	0.1575

Table F-1
Soil Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Trinitrotoluene, 2,4,6-	118-96-7	0.1595	mg/kg	0.319	UJ	ASH PIT 1-SB05	AP0014	EXPLOSIVES	REG	9-Dec-08	0	1	U	0.16
Trinitrotoluene, 2,4,6-	118-96-7	0.142	mg/kg	0.284	U	ASH PIT 1-SB05	AP0015	EXPLOSIVES	REG	9-Dec-08	3	3.7	U	0.142
Trinitrotoluene, 2,4,6-	118-96-7	0.142	mg/kg	0.284	UJ	ASH PIT 1-SB06	AP0017	EXPLOSIVES	REG	8-Dec-08	0.8	1.8	U	0.142
Trinitrotoluene, 2,4,6-	118-96-7	0.153	mg/kg	0.306	U	ASH PIT 1-SB06	AP0018	EXPLOSIVES	REG	8-Dec-08	5	5.8	U	0.153
Trinitrotoluene, 2,4,6-	118-96-7	0.1453	mg/kg	0.2905	UJUJ	ASH PIT 1-SB08	AP0023AP0063	EXPLOSIVES	AVGD	39791	0	1	UU	0.1455
Trinitrotoluene, 2,4,6-	118-96-7	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB08	AP0024	EXPLOSIVES	REG	9-Dec-08	3	5	U	0.161
Trinitrotoluene, 2,4,6-	118-96-7	0.151	mg/kg	0.302	UJ	ASH PIT 1-SB09	AP0026	EXPLOSIVES	REG	8-Dec-08	0	1	U	0.151
Trinitrotoluene, 2,4,6-	118-96-7	0.1615	mg/kg	0.323	UJ	ASH PIT 1-SB09	AP0027	EXPLOSIVES	REG	8-Dec-08	3	4	U	0.161
Vanadium	7440-62-2	20.7	mg/kg	0.199	J	ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		0.0993
Vanadium	7440-62-2	19.3	mg/kg	0.165	J	ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		0.0826
Vanadium	7440-62-2	26.3	mg/kg	0.23	J	ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		0.115
Vanadium	7440-62-2	20.6	mg/kg	0.172	J	ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		0.0861
Vanadium	7440-62-2	29.9	mg/kg	0.209	J	ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		0.105
Vanadium	7440-62-2	15.1	mg/kg	0.196	J	ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		0.098
Vanadium	7440-62-2	32.4	mg/kg	0.205	J	ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		0.102
Vanadium	7440-62-2	24.05	mg/kg	0.1885	JJ	ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		0.09425
Vanadium	7440-62-2	27.9	mg/kg	0.206	J	ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		0.103
Vanadium	7440-62-2	37.6	mg/kg	0.196	J	ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		0.0978
Vanadium	7440-62-2	28.2	mg/kg	0.227	J	ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		0.113
Vanadium	7440-62-2	24.3	mg/kg	0.181	J	ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		0.0903
Vanadium	7440-62-2	21.85	mg/kg	0.19	JJ	ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		0.09535
Vanadium	7440-62-2	18.9	mg/kg	0.194	J	ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		0.0969
Vanadium	7440-62-2	20.7	mg/kg	0.242	J	ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		0.121
Vanadium	7440-62-2	19.1	mg/kg	0.168	J	ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		0.0838
Vanadium	7440-62-2	20.25	mg/kg	7.1		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5		7.1
Vanadium	7440-62-2	17.8	mg/kg	13.1		PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1		13.1
Vanadium	7440-62-2	39.2	mg/kg	8.4		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1		8.4
Vanadium	7440-62-2	26.8	mg/kg	6.3		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4		6.3
Vanadium	7440-62-2	14.4	mg/kg	6.5		PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1		6.5
Vanadium	7440-62-2	23	mg/kg	12.2		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0		12.2
Zinc	7440-66-6	44.4	mg/kg	2.48		ASH PIT 1-SB01	AP0001	METALS	REG	8-Dec-08	0.5	1.5		1.24
Zinc	7440-66-6	57.1	mg/kg	2.07		ASH PIT 1-SB01	AP0002	METALS	REG	8-Dec-08	3.5	5.5		1.03
Zinc	7440-66-6	55.2	mg/kg	2.88		ASH PIT 1-SB02	AP0004	METALS	REG	8-Dec-08	0	1		1.44
Zinc	7440-66-6	72.7	mg/kg	2.15		ASH PIT 1-SB02	AP0005	METALS	REG	8-Dec-08	3	3.8		1.08
Zinc	7440-66-6	57.1	mg/kg	2.61		ASH PIT 1-SB03	AP0007	METALS	REG	9-Dec-08	0	1		1.31
Zinc	7440-66-6	23.1	mg/kg	2.45		ASH PIT 1-SB03	AP0008	METALS	REG	9-Dec-08	3	5		1.23
Zinc	7440-66-6	55.3	mg/kg	2.56		ASH PIT 1-SB04	AP0010	METALS	REG	9-Dec-08	0	1		1.28
Zinc	7440-66-6	69.25	mg/kg	2.355		ASH PIT 1-SB04	AP0011AP0012	METALS	AVGD	39791	3	4		1.18
Zinc	7440-66-6	62.8	mg/kg	2.58		ASH PIT 1-SB05	AP0014	METALS	REG	9-Dec-08	0	1		1.29
Zinc	7440-66-6	92.4	mg/kg	2.44		ASH PIT 1-SB05	AP0015	METALS	REG	9-Dec-08	3	3.7		1.22
Zinc	7440-66-6	85.4	mg/kg	2.84		ASH PIT 1-SB06	AP0017	METALS	REG	8-Dec-08	0.8	1.8		1.42
Zinc	7440-66-6	67.2	mg/kg	2.26		ASH PIT 1-SB06	AP0018	METALS	REG	8-Dec-08	5	5.8		1.13
Zinc	7440-66-6	63.4	mg/kg	2.38		ASH PIT 1-SB08	AP0023AP0063	METALS	AVGD	39791	0	1		1.19
Zinc	7440-66-6	38.1	mg/kg	2.42		ASH PIT 1-SB08	AP0024	METALS	REG	9-Dec-08	3	5		1.21
Zinc	7440-66-6	34.8	mg/kg	3.02		ASH PIT 1-SB09	AP0026	METALS	REG	8-Dec-08	0	1		1.51
Zinc	7440-66-6	63.3	mg/kg	2.09		ASH PIT 1-SB09	AP0027	METALS	REG	8-Dec-08	3	4		1.05
Zinc	7440-66-6	63.15	mg/kg	2.8		PBOW99-SBA101A	PBOW99SBA101APBOW99SBA101A-DUP	METALS	AVGD	36322	0	0.5	MBDMBD	2.8
Zinc	7440-66-6	2.6	mg/kg	5.2	U	PBOW99-SBA102A	PBOW99SBA102A	METALS	REG	10-Jun-99	0	1	MBD	5.2
Zinc	7440-66-6	43.5	mg/kg	3.3		PBOW99-SBA103A	PBOW99SBA103A	METALS	REG	10-Jun-99	0	1	MBD	3.3
Zinc	7440-66-6	74.5	mg/kg	2.5		PBOW99-SBA103B	PBOW99SBA103B	METALS	REG	10-Jun-99	1	4	MBD	2.5
Zinc	7440-66-6	1.3	mg/kg	2.6	U	PBOW99-SBA104B	PBOW99SBA104B	METALS	REG	10-Jun-99	0	1	MBD	2.6
Zinc	7440-66-6	95.8	mg/kg	4.9		PBOW99-SSA101	PBOW99SSA101	METALS	REG	10-Jun-99	0	0	MBD	4.9

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
3-Methylphenol and 4-Methylphenol	65794-96-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
3-Methylphenol and 4-Methylphenol	65794-96-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
3-Methylphenol and 4-Methylphenol	65794-96-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
3-Methylphenol and 4-Methylphenol	65794-96-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Acenaphthene	83-32-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthene	83-32-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthene	83-32-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthene	83-32-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Acenaphthylene	208-96-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthylene	208-96-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthylene	208-96-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Acenaphthylene	208-96-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Aluminum	7429-90-5	31.8	ug/L	200	J	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	11	B	N
Aluminum	7429-90-5	31.9	ug/L	200	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	11	B	N
Aluminum	7429-90-5	83.8	ug/L	200	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	11	B	N
Aluminum	7429-90-5	8770	ug/L	200		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	11		N
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.048	U	N
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.074	U	N
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.073	U	N
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.073	U	N
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.073	U	N
Anthracene	120-12-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Anthracene	120-12-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Anthracene	120-12-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Anthracene	120-12-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Antimony	7440-36-0	3	ug/L	6	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	4.5	U	N
Antimony	7440-36-0	3	ug/L	6	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	4.5	U	N
Antimony	7440-36-0	3	ug/L	6	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	4.5	U	N
Antimony	7440-36-0	3	ug/L	6	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	4.5	U	N
Aroclor 1016	12674-11-2	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1016	12674-11-2	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1016	12674-11-2	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1016	12674-11-2	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.24	U	N
Aroclor 1221	11104-28-2	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1221	11104-28-2	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1221	11104-28-2	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1221	11104-28-2	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.38	U	N
Aroclor 1232	11141-16-5	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1232	11141-16-5	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1232	11141-16-5	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.38	U	N
Aroclor 1232	11141-16-5	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.38	U	N
Aroclor 1242	53469-21-9	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1242	53469-21-9	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1242	53469-21-9	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1242	53469-21-9	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.24	U	N
Aroclor 1248	12672-29-6	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1248	12672-29-6	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1248	12672-29-6	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1248	12672-29-6	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.24	U	N
Aroclor 1254	11097-69-1	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1254	11097-69-1	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1254	11097-69-1	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1254	11097-69-1	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.24	U	N
Aroclor 1260	11096-82-5	0.24	ug/L	0.48	U	AP1-SW01	AP2007	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1260	11096-82-5	0.24	ug/L	0.48	U	AP1-SW02	AP2008	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1260	11096-82-5	0.24	ug/L	0.48	U	AP1-SW03	AP2012	PEST/PCB	REG	19-May-09	0	0	0.24	U	N
Aroclor 1260	11096-82-5	0.24	ug/L	0.48	U	AP1-SW04	AP2013	PEST/PCB	REG	20-May-09	0	0	0.24	U	N
Arsenic	7440-38-2	5	ug/L	10	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	3.6	U	N
Arsenic	7440-38-2	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	3.6	U	N
Arsenic	7440-38-2	5	ug/L	10	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	3.6	U	N
Arsenic	7440-38-2	8.3	ug/L	10	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	3.6	B	N
Barium	7440-39-3	31.9	ug/L	200	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	5	B	N
Barium	7440-39-3	33.8	ug/L	200	J	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	5	B	N
Barium	7440-39-3	36.6	ug/L	200	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	5	B	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Barium	7440-39-3	80	ug/L	200	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	5	B	N
Benzo(a)anthracene	56-55-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)anthracene	56-55-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)anthracene	56-55-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)anthracene	56-55-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Benzo(a)pyrene	50-32-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)pyrene	50-32-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)pyrene	50-32-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(a)pyrene	50-32-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Benzo(b)fluoranthene	205-99-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(b)fluoranthene	205-99-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(b)fluoranthene	205-99-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(b)fluoranthene	205-99-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Benzo(ghi)perylene	191-24-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(ghi)perylene	191-24-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(ghi)perylene	191-24-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(ghi)perylene	191-24-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Benzo(k)fluoranthene	207-08-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(k)fluoranthene	207-08-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(k)fluoranthene	207-08-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzo(k)fluoranthene	207-08-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Benzoic acid	65-85-0	12.5	ug/L	25	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Benzoic acid	65-85-0	12.5	ug/L	25	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Benzoic acid	65-85-0	12.5	ug/L	25	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Benzoic acid	65-85-0	12.5	ug/L	25	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	10	U	N
Benzyl alcohol	100-51-6	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzyl alcohol	100-51-6	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzyl alcohol	100-51-6	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Benzyl alcohol	100-51-6	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Beryllium	7440-41-7	2	ug/L	4	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	1	U	N
Beryllium	7440-41-7	2	ug/L	4	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	1	U	N
Beryllium	7440-41-7	2	ug/L	4	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	1	U	N
Beryllium	7440-41-7	2	ug/L	4	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	1	U	N
Bis(2-chloroethoxy)methane	111-91-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethoxy)methane	111-91-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethoxy)methane	111-91-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethoxy)methane	111-91-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Bis(2-chloroethyl)ether	111-44-4	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethyl)ether	111-44-4	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethyl)ether	111-44-4	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroethyl)ether	111-44-4	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Bis(2-chloroisopropyl)ether	108-60-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroisopropyl)ether	108-60-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroisopropyl)ether	108-60-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bis(2-chloroisopropyl)ether	108-60-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Bis(2-ethylhexyl)phthalate	117-81-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Bis(2-ethylhexyl)phthalate	117-81-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Bis(2-ethylhexyl)phthalate	117-81-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Bis(2-ethylhexyl)phthalate	117-81-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Bromophenyl phenyl ether, 4-	101-55-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bromophenyl phenyl ether, 4-	101-55-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bromophenyl phenyl ether, 4-	101-55-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Bromophenyl phenyl ether, 4-	101-55-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Butyl benzyl phthalate	85-68-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Butyl benzyl phthalate	85-68-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Butyl benzyl phthalate	85-68-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Butyl benzyl phthalate	85-68-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Cadmium	7440-43-9	2.5	ug/L	5	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	1	U	N
Cadmium	7440-43-9	2.5	ug/L	5	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	1	U	N
Cadmium	7440-43-9	2.5	ug/L	5	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	1	U	N
Cadmium	7440-43-9	2.5	ug/L	5	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	1	U	N
Calcium	7440-70-2	1E+05	ug/L	1000		AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	100		N
Calcium	7440-70-2	1E+05	ug/L	1000		AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	100		N
Calcium	7440-70-2	1E+05	ug/L	1000		AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	100		N
Calcium	7440-70-2	2E+05	ug/L	1000		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	100		N
Carbazole	86-74-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Carbazole	86-74-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Carbazole	86-74-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Carbazole	86-74-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Chloro-3-methylphenol, 4-	59-50-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloro-3-methylphenol, 4-	59-50-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloro-3-methylphenol, 4-	59-50-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloro-3-methylphenol, 4-	59-50-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Chloroaniline, 4-	106-47-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloroaniline, 4-	106-47-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloroaniline, 4-	106-47-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloroaniline, 4-	106-47-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Chloronaphthalene, 2-	91-58-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloronaphthalene, 2-	91-58-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloronaphthalene, 2-	91-58-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chloronaphthalene, 2-	91-58-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Chlorophenol, 2-	95-57-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Chlorophenol, 2-	95-57-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Chlorophenol, 2-	95-57-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Chlorophenol, 2-	95-57-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.2	U	N
Chlorophenyl phenyl ether, 4-	7005-72-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chlorophenyl phenyl ether, 4-	7005-72-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chlorophenyl phenyl ether, 4-	7005-72-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chlorophenyl phenyl ether, 4-	7005-72-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Chromium	7440-47-3	5	ug/L	10	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	1.6	U	N
Chromium	7440-47-3	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	1.6	U	N
Chromium	7440-47-3	5	ug/L	10	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	1.6	U	N
Chromium	7440-47-3	13.9	ug/L	10		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	1.6		N
Chrysene	218-01-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chrysene	218-01-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chrysene	218-01-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Chrysene	218-01-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Cobalt	7440-48-4	6.9	ug/L	50	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	0.83	B	N
Cobalt	7440-48-4	25	ug/L	50	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	0.83	U	N
Cobalt	7440-48-4	25	ug/L	50	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	0.83	U	N
Cobalt	7440-48-4	25	ug/L	50	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	0.83	U	N
Copper	7440-50-8	12.5	ug/L	25	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	2.1	U	N
Copper	7440-50-8	12.5	ug/L	25	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	2.1	U	N
Copper	7440-50-8	12.5	ug/L	25	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	2.1	U	N
Copper	7440-50-8	19.2	ug/L	25	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	2.1	B	N
Dibenz(a,h)anthracene	53-70-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenz(a,h)anthracene	53-70-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenz(a,h)anthracene	53-70-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenz(a,h)anthracene	53-70-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dibenzofuran	132-64-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenzofuran	132-64-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenzofuran	132-64-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dibenzofuran	132-64-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dichlorobenzene, 1,2-	95-50-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,2-	95-50-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,2-	95-50-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,2-	95-50-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dichlorobenzene, 1,3-	541-73-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,3-	541-73-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,3-	541-73-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,3-	541-73-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dichlorobenzene, 1,4-	106-46-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,4-	106-46-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,4-	106-46-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dichlorobenzene, 1,4-	106-46-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dichlorobenzidine, 3,3'-	91-94-1	5	ug/L	10	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Dichlorobenzidine, 3,3'-	91-94-1	5	ug/L	10	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Dichlorobenzidine, 3,3'-	91-94-1	5	ug/L	10	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Dichlorobenzidine, 3,3'-	91-94-1	5	ug/L	10	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Dichlorophenol, 2,4-	120-83-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Dichlorophenol, 2,4-	120-83-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Dichlorophenol, 2,4-	120-83-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Dichlorophenol, 2,4-	120-83-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.3	U	N
Diethyl phthalate	84-66-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Diethyl phthalate	84-66-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Diethyl phthalate	84-66-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Diethyl phthalate	84-66-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Dimethyl phthalate	131-11-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dimethyl phthalate	131-11-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dimethyl phthalate	131-11-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dimethyl phthalate	131-11-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dimethylphenol, 2,4-	105-67-9	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Dimethylphenol, 2,4-	105-67-9	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Dimethylphenol, 2,4-	105-67-9	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.2	U	N
Dimethylphenol, 2,4-	105-67-9	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.2	U	N
Di-n-butyl phthalate	84-74-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Di-n-butyl phthalate	84-74-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Di-n-butyl phthalate	84-74-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Di-n-butyl phthalate	84-74-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dinitro-2-methylphenol, 4,6-	534-52-1	5	ug/L	10	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	4	U	N
Dinitro-2-methylphenol, 4,6-	534-52-1	5	ug/L	10	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	4	U	N
Dinitro-2-methylphenol, 4,6-	534-52-1	5	ug/L	10	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	4	U	N
Dinitro-2-methylphenol, 4,6-	534-52-1	5	ug/L	10	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	4	U	N
Dinitrobenzene, 1,3-	99-65-0	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.049	U	N
Dinitrobenzene, 1,3-	99-65-0	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.049	U	N
Dinitrobenzene, 1,3-	99-65-0	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.049	U	N
Dinitrobenzene, 1,3-	99-65-0	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.049	U	N
Dinitrophenol, 2,4-	51-28-5	12.5	ug/L	25	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Dinitrophenol, 2,4-	51-28-5	12.5	ug/L	25	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Dinitrophenol, 2,4-	51-28-5	12.5	ug/L	25	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Dinitrophenol, 2,4-	51-28-5	12.5	ug/L	25	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	10	U	N
Dinitrotoluene, 2,4-	121-14-2	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.062	U	N
Dinitrotoluene, 2,4-	121-14-2	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.062	U	N
Dinitrotoluene, 2,4-	121-14-2	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.062	U	N
Dinitrotoluene, 2,4-	121-14-2	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.062	U	N
Dinitrotoluene, 2,4-	121-14-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,4-	121-14-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,4-	121-14-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,4-	121-14-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Dinitrotoluene, 2,6-	606-20-2	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.089	U	N
Dinitrotoluene, 2,6-	606-20-2	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.089	U	N
Dinitrotoluene, 2,6-	606-20-2	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.089	U	N
Dinitrotoluene, 2,6-	606-20-2	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.089	U	N
Dinitrotoluene, 2,6-	606-20-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,6-	606-20-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,6-	606-20-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Dinitrotoluene, 2,6-	606-20-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Di-n-octyl phthalate	117-84-0	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.5	U	N
Di-n-octyl phthalate	117-84-0	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.5	U	N
Di-n-octyl phthalate	117-84-0	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.5	U	N
Di-n-octyl phthalate	117-84-0	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.5	U	N
Fluoranthene	206-44-0	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluoranthene	206-44-0	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluoranthene	206-44-0	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluoranthene	206-44-0	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Fluorene	86-73-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluorene	86-73-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluorene	86-73-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Fluorene	86-73-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Hexachlorobenzene	118-74-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Hexachlorobenzene	118-74-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Hexachlorobenzene	118-74-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Hexachlorobenzene	118-74-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Hexachlorobutadiene	87-68-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachlorobutadiene	87-68-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachlorobutadiene	87-68-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachlorobutadiene	87-68-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2.5	U	N
Hexachlorocyclopentadiene	77-47-4	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Hexachlorocyclopentadiene	77-47-4	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Hexachlorocyclopentadiene	77-47-4	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Hexachlorocyclopentadiene	77-47-4	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.3	U	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Hexachloroethane	67-72-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachloroethane	67-72-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachloroethane	67-72-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2.5	U	N
Hexachloroethane	67-72-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2.5	U	N
HMX	2691-41-0	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.1	U	N
HMX	2691-41-0	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.1	U	N
HMX	2691-41-0	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.1	U	N
HMX	2691-41-0	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.1	U	N
Indeno(1,2,3-cd)pyrene	193-39-5	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.1	U	N
Indeno(1,2,3-cd)pyrene	193-39-5	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.1	U	N
Indeno(1,2,3-cd)pyrene	193-39-5	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.1	U	N
Indeno(1,2,3-cd)pyrene	193-39-5	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.1	U	N
Iron	7439-89-6	26.6	ug/L	300	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	23	B	N
Iron	7439-89-6	31.1	ug/L	300	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	23	B	N
Iron	7439-89-6	150	ug/L	300	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	23	U	N
Iron	7439-89-6	15100	ug/L	300		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	23		N
Isophorone	78-59-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Isophorone	78-59-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Isophorone	78-59-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Isophorone	78-59-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Lead	7439-92-1	2	ug/L	10	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	2	B	N
Lead	7439-92-1	2.1	ug/L	10	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	2	B	N
Lead	7439-92-1	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	2	U	N
Lead	7439-92-1	15	ug/L	10		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	2		N
Magnesium	7439-95-4	26200	ug/L	5000		AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	100		N
Magnesium	7439-95-4	26300	ug/L	5000		AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	100		N
Magnesium	7439-95-4	26600	ug/L	5000		AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	100		N
Magnesium	7439-95-4	36900	ug/L	5000		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	100		N
Manganese	7439-96-5	247	ug/L	15		AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	0.5		N
Manganese	7439-96-5	396	ug/L	15		AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	0.5		N
Manganese	7439-96-5	488	ug/L	15		AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	0.5		N
Manganese	7439-96-5	836	ug/L	15		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	0.5		N
Mercury	7439-97-6	0.5	ug/L	1	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	0.14	U	N
Mercury	7439-97-6	0.5	ug/L	1	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	0.14	U	N
Mercury	7439-97-6	0.5	ug/L	1	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	0.14	U	N
Mercury	7439-97-6	0.5	ug/L	1	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	0.14	U	N
Methylnaphthalene, 2-	91-57-6	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylnaphthalene, 2-	91-57-6	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylnaphthalene, 2-	91-57-6	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylnaphthalene, 2-	91-57-6	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Methylphenol, 2-	95-48-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylphenol, 2-	95-48-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylphenol, 2-	95-48-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Methylphenol, 2-	95-48-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Naphthalene	91-20-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Naphthalene	91-20-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Naphthalene	91-20-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Naphthalene	91-20-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Nickel	7440-02-0	20	ug/L	40	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	2.3	U	N
Nickel	7440-02-0	20	ug/L	40	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	2.3	U	N
Nickel	7440-02-0	20	ug/L	40	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	2.3	U	N
Nickel	7440-02-0	26.2	ug/L	40	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	2.3	B	N
Nitroaniline, 2-	88-74-4	5	ug/L	10	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 2-	88-74-4	5	ug/L	10	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 2-	88-74-4	5	ug/L	10	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 2-	88-74-4	5	ug/L	10	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Nitroaniline, 3-	99-09-2	5	ug/L	10	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 3-	99-09-2	5	ug/L	10	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 3-	99-09-2	5	ug/L	10	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 3-	99-09-2	5	ug/L	10	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Nitroaniline, 4-	100-01-6	5	ug/L	10	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 4-	100-01-6	5	ug/L	10	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 4-	100-01-6	5	ug/L	10	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
Nitroaniline, 4-	100-01-6	5	ug/L	10	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Nitrobenzene	98-95-3	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Nitrobenzene	98-95-3	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Nitrobenzene	98-95-3	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Nitrobenzene	98-95-3	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.048	U	N
Nitrobenzene	98-95-3	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Nitrobenzene	98-95-3	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Nitrobenzene	98-95-3	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Nitrobenzene	98-95-3	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Nitrophenol, 2-	88-75-5	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Nitrophenol, 2-	88-75-5	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Nitrophenol, 2-	88-75-5	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.3	U	N
Nitrophenol, 2-	88-75-5	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.3	U	N
Nitrophenol, 4-	100-02-7	12.5	ug/L	25	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Nitrophenol, 4-	100-02-7	12.5	ug/L	25	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Nitrophenol, 4-	100-02-7	12.5	ug/L	25	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Nitrophenol, 4-	100-02-7	12.5	ug/L	25	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	10	U	N
Nitrotoluene, 2-	88-72-2	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.062	U	N
Nitrotoluene, 2-	88-72-2	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.061	U	N
Nitrotoluene, 2-	88-72-2	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.061	U	N
Nitrotoluene, 2-	88-72-2	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.061	U	N
Nitrotoluene, 3-	99-08-1	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.093	U	N
Nitrotoluene, 3-	99-08-1	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.092	U	N
Nitrotoluene, 3-	99-08-1	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.092	U	N
Nitrotoluene, 3-	99-08-1	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.092	U	N
Nitrotoluene, 4-	99-99-0	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.073	U	N
Nitrotoluene, 4-	99-99-0	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.072	U	N
Nitrotoluene, 4-	99-99-0	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.072	U	N
Nitrotoluene, 4-	99-99-0	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.072	U	N
n-Nitroso-di-n-propylamine	621-64-7	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
n-Nitroso-di-n-propylamine	621-64-7	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
n-Nitroso-di-n-propylamine	621-64-7	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
n-Nitroso-di-n-propylamine	621-64-7	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
n-Nitrosodiphenylamine	86-30-6	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
n-Nitrosodiphenylamine	86-30-6	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
n-Nitrosodiphenylamine	86-30-6	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	2	U	N
n-Nitrosodiphenylamine	86-30-6	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	2	U	N
Pentachlorophenol	87-86-5	12.5	ug/L	25	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Pentachlorophenol	87-86-5	12.5	ug/L	25	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Pentachlorophenol	87-86-5	12.5	ug/L	25	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	10	U	N
Pentachlorophenol	87-86-5	12.5	ug/L	25	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	10	U	N
Phenanthrene	85-01-8	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenanthrene	85-01-8	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenanthrene	85-01-8	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenanthrene	85-01-8	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Phenol	108-95-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenol	108-95-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenol	108-95-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Phenol	108-95-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Potassium	7440-09-7	2030	ug/L	10000	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	100	B	N
Potassium	7440-09-7	2040	ug/L	10000	J	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	100	B	N
Potassium	7440-09-7	2170	ug/L	10000	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	100	B	N
Potassium	7440-09-7	11800	ug/L	10000		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	100		N
Pyrene	129-00-0	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Pyrene	129-00-0	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Pyrene	129-00-0	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Pyrene	129-00-0	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
RDX	121-82-4	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.072	U	N
RDX	121-82-4	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.071	U	N
RDX	121-82-4	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.071	U	N
RDX	121-82-4	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.071	U	N
Selenium	7782-49-2	5	ug/L	10	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	3.1	U	N
Selenium	7782-49-2	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	3.1	U	N
Selenium	7782-49-2	5	ug/L	10	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	3.1	U	N
Selenium	7782-49-2	5	ug/L	10	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	3.1	U	N
Silver	7440-22-4	5	ug/L	10	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	1.2	U	N
Silver	7440-22-4	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	1.2	U	N
Silver	7440-22-4	5	ug/L	10	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	1.2	U	N
Silver	7440-22-4	5	ug/L	10	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	1.2	U	N
Sodium	7440-23-5	6400	ug/L	10000	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	500	B	N
Sodium	7440-23-5	6850	ug/L	10000	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	500	B	N

Table F-2
Surface Water Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM	FILTERED
Sodium	7440-23-5	7050	ug/L	10000	J	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	500	B	N
Sodium	7440-23-5	9140	ug/L	10000	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	500	B	N
Tetryl	479-45-8	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.075	U	N
Tetryl	479-45-8	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.074	U	N
Tetryl	479-45-8	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.074	U	N
Tetryl	479-45-8	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.074	U	N
Thallium	7440-28-0	5	ug/L	10	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	3.4	U	N
Thallium	7440-28-0	5	ug/L	10	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	3.4	U	N
Thallium	7440-28-0	5	ug/L	10	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	3.4	U	N
Thallium	7440-28-0	5	ug/L	10	U	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	3.4	U	N
Trichlorobenzene, 1,2,4-	120-82-1	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Trichlorobenzene, 1,2,4-	120-82-1	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Trichlorobenzene, 1,2,4-	120-82-1	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1	U	N
Trichlorobenzene, 1,2,4-	120-82-1	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1	U	N
Trichlorophenol, 2,4,5-	95-95-4	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,5-	95-95-4	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,5-	95-95-4	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,5-	95-95-4	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,6-	88-06-2	2.5	ug/L	5	U	AP1-SW01	AP2007	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,6-	88-06-2	2.5	ug/L	5	U	AP1-SW02	AP2008	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,6-	88-06-2	2.5	ug/L	5	U	AP1-SW03	AP2012	SEMIVOLATILES	REG	19-May-09	0	0	1.4	U	N
Trichlorophenol, 2,4,6-	88-06-2	2.5	ug/L	5	U	AP1-SW04	AP2013	SEMIVOLATILES	REG	20-May-09	0	0	1.4	U	N
Trinitrobenzene, 1,3,5-	99-35-4	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Trinitrobenzene, 1,3,5-	99-35-4	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Trinitrobenzene, 1,3,5-	99-35-4	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.048	U	N
Trinitrobenzene, 1,3,5-	99-35-4	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.048	U	N
Trinitrotoluene, 2,4,6-	118-96-7	0.095	ug/L	0.19	U	AP1-SW01	AP2007	EXPLOSIVES	REG	19-May-09	0	0	0.066	U	N
Trinitrotoluene, 2,4,6-	118-96-7	0.095	ug/L	0.19	U	AP1-SW02	AP2008	EXPLOSIVES	REG	19-May-09	0	0	0.066	U	N
Trinitrotoluene, 2,4,6-	118-96-7	0.095	ug/L	0.19	U	AP1-SW03	AP2012	EXPLOSIVES	REG	19-May-09	0	0	0.066	U	N
Trinitrotoluene, 2,4,6-	118-96-7	0.095	ug/L	0.19	UJ	AP1-SW04	AP2013	EXPLOSIVES	REG	20-May-09	0	0	0.066	U	N
Vanadium	7440-62-2	20	ug/L	50	J	AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	0.66	B	N
Vanadium	7440-62-2	25	ug/L	50	U	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	0.66	U	N
Vanadium	7440-62-2	25	ug/L	50	U	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	0.66	U	N
Vanadium	7440-62-2	25	ug/L	50	U	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	0.66	U	N
Zinc	7440-66-6	9.6	ug/L	20	J	AP1-SW02	AP2008	METALS	REG	19-May-09	0	0	3.8	B	N
Zinc	7440-66-6	10.8	ug/L	20	J	AP1-SW03	AP2012	METALS	REG	19-May-09	0	0	3.8	B	N
Zinc	7440-66-6	13.2	ug/L	20	J	AP1-SW01	AP2007	METALS	REG	19-May-09	0	0	3.8	B	N
Zinc	7440-66-6	93.2	ug/L	20		AP1-SW04	AP2013	METALS	REG	20-May-09	0	0	3.8		N

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
3-Methylphenol and 4-Methylphenol	65794-96-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
3-Methylphenol and 4-Methylphenol	65794-96-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
3-Methylphenol and 4-Methylphenol	65794-96-9	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
3-Methylphenol and 4-Methylphenol	65794-96-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Acenaphthene	83-32-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Acenaphthene	83-32-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Acenaphthene	83-32-9	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Acenaphthene	83-32-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Acenaphthylene	208-96-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Acenaphthylene	208-96-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Acenaphthylene	208-96-8	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Acenaphthylene	208-96-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Aluminum	7429-90-5	4490	mg/kg	15		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.82
Aluminum	7429-90-5	7130	mg/kg	13		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.7
Aluminum	7429-90-5	9860	mg/kg	24		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		1.3
Aluminum	7429-90-5	9880	mg/kg	15		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.84
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.044
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.044
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.047
Amino-2,6-dinitrotoluene, 4-	19406-51-0	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.048
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.095
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.096
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.1
Amino-4,6-dinitrotoluene, 2-	35572-78-2	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.1
Anthracene	120-12-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Anthracene	120-12-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Anthracene	120-12-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Anthracene	120-12-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Antimony	7440-36-0	0.5	mg/kg	4.6	J	AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5	B	0.34
Antimony	7440-36-0	0.7	mg/kg	3.8	J	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	B	0.29
Antimony	7440-36-0	1.3	mg/kg	7.3	J	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	B	0.54
Antimony	7440-36-0	2.25	mg/kg	4.5	U	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	U	0.34
Aroclor 1016	12674-11-2	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.011
Aroclor 1016	12674-11-2	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1016	12674-11-2	0.014	mg/kg	0.027	U	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1016	12674-11-2	0.021	mg/kg	0.041	U	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	U	0.021
Aroclor 1221	11104-28-2	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.018
Aroclor 1221	11104-28-2	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.021
Aroclor 1221	11104-28-2	0.014	mg/kg	0.027	U	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	U	0.021
Aroclor 1221	11104-28-2	0.021	mg/kg	0.041	U	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	U	0.033
Aroclor 1232	11141-16-5	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.018
Aroclor 1232	11141-16-5	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.021
Aroclor 1232	11141-16-5	0.014	mg/kg	0.027	U	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	U	0.021
Aroclor 1232	11141-16-5	0.021	mg/kg	0.041	U	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	U	0.033
Aroclor 1242	53469-21-9	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.011
Aroclor 1242	53469-21-9	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1242	53469-21-9	0.014	mg/kg	0.027	U	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1242	53469-21-9	0.021	mg/kg	0.041	U	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	U	0.021
Aroclor 1248	12672-29-6	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.011
Aroclor 1248	12672-29-6	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1248	12672-29-6	0.014	mg/kg	0.027	U	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1248	12672-29-6	0.021	mg/kg	0.041	U	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	U	0.021
Aroclor 1254	11097-69-1	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.011
Aroclor 1254	11097-69-1	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1254	11097-69-1	0.025	mg/kg	0.027	J	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	J	0.013
Aroclor 1254	11097-69-1	0.035	mg/kg	0.041	J	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	J	0.021
Aroclor 1260	11096-82-5	0.011	mg/kg	0.022	U	AP1-SD02	AP1008	PEST/PCB	REG	19-May-09	0	0.5	U	0.011
Aroclor 1260	11096-82-5	0.013	mg/kg	0.026	U	AP1-SD03	AP1012	PEST/PCB	REG	19-May-09	0	0.5	U	0.013
Aroclor 1260	11096-82-5	0.021	mg/kg	0.027	J	AP1-SD01	AP1007	PEST/PCB	REG	19-May-09	0	0.5	J	0.013
Aroclor 1260	11096-82-5	0.113	mg/kg	0.041	J	AP1-SD04	AP1013	PEST/PCB	REG	20-May-09	0	0.5	J	0.021
Arsenic	7440-38-2	4	mg/kg	0.6		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.27
Arsenic	7440-38-2	7.6	mg/kg	0.61		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.27
Arsenic	7440-38-2	9.3	mg/kg	0.51		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.23
Arsenic	7440-38-2	15.9	mg/kg	0.97		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.44
Barium	7440-39-3	31.3	mg/kg	15		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.37
Barium	7440-39-3	35.7	mg/kg	13		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.32

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Barium	7440-39-3	57.5	mg/kg	15		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.38
Barium	7440-39-3	110	mg/kg	24		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.61
Benzo(a)anthracene	56-55-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzo(a)anthracene	56-55-3	0.121	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Benzo(a)anthracene	56-55-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzo(a)anthracene	56-55-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Benzo(a)pyrene	50-32-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzo(a)pyrene	50-32-8	0.112	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Benzo(a)pyrene	50-32-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzo(a)pyrene	50-32-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Benzo(b)fluoranthene	205-99-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzo(b)fluoranthene	205-99-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzo(b)fluoranthene	205-99-2	0.175	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Benzo(b)fluoranthene	205-99-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Benzo(ghi)perylene	191-24-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzo(ghi)perylene	191-24-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzo(ghi)perylene	191-24-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Benzo(ghi)perylene	191-24-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Benzo(k)fluoranthene	207-08-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzo(k)fluoranthene	207-08-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzo(k)fluoranthene	207-08-9	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Benzo(k)fluoranthene	207-08-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Benzoic acid	65-85-0	0.55	mg/kg	1.1	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Benzoic acid	65-85-0	0.65	mg/kg	1.3	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.52
Benzoic acid	65-85-0	1.05	mg/kg	2.1	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.84
Benzoic acid	65-85-0	2.7	mg/kg	5.4	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	2.2
Benzyl alcohol	100-51-6	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Benzyl alcohol	100-51-6	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Benzyl alcohol	100-51-6	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Benzyl alcohol	100-51-6	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Beryllium	7440-41-7	0.3	mg/kg	0.37	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	0.075
Beryllium	7440-41-7	0.5	mg/kg	0.32		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.064
Beryllium	7440-41-7	0.62	mg/kg	0.38		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.076
Beryllium	7440-41-7	1.6	mg/kg	0.61		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.12
Bis(2-chloroethoxy)methane	111-91-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Bis(2-chloroethoxy)methane	111-91-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Bis(2-chloroethoxy)methane	111-91-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Bis(2-chloroethoxy)methane	111-91-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Bis(2-chloroethyl)ether	111-44-4	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Bis(2-chloroethyl)ether	111-44-4	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Bis(2-chloroethyl)ether	111-44-4	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Bis(2-chloroethyl)ether	111-44-4	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Bis(2-chloroisopropyl)ether	108-60-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Bis(2-chloroisopropyl)ether	108-60-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Bis(2-chloroisopropyl)ether	108-60-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Bis(2-chloroisopropyl)ether	108-60-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Bis(2-ethylhexyl)phthalate	117-81-7	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Bis(2-ethylhexyl)phthalate	117-81-7	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.26
Bis(2-ethylhexyl)phthalate	117-81-7	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.42
Bis(2-ethylhexyl)phthalate	117-81-7	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	1.1
Bromophenyl phenyl ether, 4-	101-55-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Bromophenyl phenyl ether, 4-	101-55-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Bromophenyl phenyl ether, 4-	101-55-3	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Bromophenyl phenyl ether, 4-	101-55-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Butyl benzyl phthalate	85-68-7	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Butyl benzyl phthalate	85-68-7	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Butyl benzyl phthalate	85-68-7	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Butyl benzyl phthalate	85-68-7	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Cadmium	7440-43-9	0.23	mg/kg	0.3	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	0.075
Cadmium	7440-43-9	0.32	mg/kg	0.25		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.064
Cadmium	7440-43-9	0.55	mg/kg	0.3		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.076
Cadmium	7440-43-9	0.59	mg/kg	0.48		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.12
Calcium	7440-70-2	10400	mg/kg	320		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		6.4
Calcium	7440-70-2	13700	mg/kg	610		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		12
Calcium	7440-70-2	16800	mg/kg	370		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		7.5
Calcium	7440-70-2	29900	mg/kg	380		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		7.6

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Carbazole	86-74-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Carbazole	86-74-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Carbazole	86-74-8	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Carbazole	86-74-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Chloro-3-methylphenol, 4-	59-50-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Chloro-3-methylphenol, 4-	59-50-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Chloro-3-methylphenol, 4-	59-50-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Chloro-3-methylphenol, 4-	59-50-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Chloroaniline, 4-	106-47-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Chloroaniline, 4-	106-47-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Chloroaniline, 4-	106-47-8	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Chloroaniline, 4-	106-47-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Chloronaphthalene, 2-	91-58-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Chloronaphthalene, 2-	91-58-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Chloronaphthalene, 2-	91-58-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Chloronaphthalene, 2-	91-58-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Chlorophenol, 2-	95-57-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Chlorophenol, 2-	95-57-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Chlorophenol, 2-	95-57-8	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Chlorophenol, 2-	95-57-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Chlorophenyl phenyl ether, 4-	7005-72-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Chlorophenyl phenyl ether, 4-	7005-72-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Chlorophenyl phenyl ether, 4-	7005-72-3	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Chlorophenyl phenyl ether, 4-	7005-72-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Chromium	7440-47-3	7.8	mg/kg	0.75		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.12
Chromium	7440-47-3	11.8	mg/kg	0.64		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.1
Chromium	7440-47-3	15.6	mg/kg	1.2		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.19
Chromium	7440-47-3	16.9	mg/kg	0.76		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.12
Chrysene	218-01-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Chrysene	218-01-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Chrysene	218-01-9	0.149	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Chrysene	218-01-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Cobalt	7440-48-4	4.4	mg/kg	3.7		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.062
Cobalt	7440-48-4	8.9	mg/kg	3.2		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.053
Cobalt	7440-48-4	9.1	mg/kg	6.1		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.1
Cobalt	7440-48-4	9.9	mg/kg	3.8		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.063
Copper	7440-50-8	10.5	mg/kg	1.9		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.16
Copper	7440-50-8	17.1	mg/kg	1.6		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.13
Copper	7440-50-8	24.5	mg/kg	3		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.25
Copper	7440-50-8	38.5	mg/kg	1.9		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.16
Dibenz(a,h)anthracene	53-70-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dibenz(a,h)anthracene	53-70-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dibenz(a,h)anthracene	53-70-3	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Dibenz(a,h)anthracene	53-70-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Dibenzofuran	132-64-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dibenzofuran	132-64-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dibenzofuran	132-64-9	0.15	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Dibenzofuran	132-64-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Dichlorobenzene, 1,2-	95-50-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.056
Dichlorobenzene, 1,2-	95-50-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.068
Dichlorobenzene, 1,2-	95-50-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.11
Dichlorobenzene, 1,2-	95-50-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.28
Dichlorobenzene, 1,3-	541-73-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.056
Dichlorobenzene, 1,3-	541-73-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.068
Dichlorobenzene, 1,3-	541-73-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.11
Dichlorobenzene, 1,3-	541-73-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.28
Dichlorobenzene, 1,4-	106-46-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dichlorobenzene, 1,4-	106-46-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.063
Dichlorobenzene, 1,4-	106-46-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.1
Dichlorobenzene, 1,4-	106-46-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.26
Dichlorobenzidine, 3,3'-	91-94-1	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Dichlorobenzidine, 3,3'-	91-94-1	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Dichlorobenzidine, 3,3'-	91-94-1	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Dichlorobenzidine, 3,3'-	91-94-1	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Dichlorophenol, 2,4-	120-83-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dichlorophenol, 2,4-	120-83-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Dichlorophenol, 2,4-	120-83-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Dichlorophenol, 2,4-	120-83-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Diethyl phthalate	84-66-2	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Diethyl phthalate	84-66-2	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.26
Diethyl phthalate	84-66-2	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.42
Diethyl phthalate	84-66-2	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	1.1
Dimethyl phthalate	131-11-3	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Dimethyl phthalate	131-11-3	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Dimethyl phthalate	131-11-3	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Dimethyl phthalate	131-11-3	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Dimethylphenol, 2,4-	105-67-9	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dimethylphenol, 2,4-	105-67-9	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dimethylphenol, 2,4-	105-67-9	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Dimethylphenol, 2,4-	105-67-9	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Di-n-butyl phthalate	84-74-2	0.18	mg/kg	0.43	J	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	J	0.087
Di-n-butyl phthalate	84-74-2	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Di-n-butyl phthalate	84-74-2	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Di-n-butyl phthalate	84-74-2	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Dinitro-2-methylphenol, 4,6-	534-52-1	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.14
Dinitro-2-methylphenol, 4,6-	534-52-1	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.17
Dinitro-2-methylphenol, 4,6-	534-52-1	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.27
Dinitro-2-methylphenol, 4,6-	534-52-1	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.69
Dinitrobenzene, 1,3-	99-65-0	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.046
Dinitrobenzene, 1,3-	99-65-0	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.047
Dinitrobenzene, 1,3-	99-65-0	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.05
Dinitrobenzene, 1,3-	99-65-0	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.051
Dinitrophenol, 2,4-	51-28-5	0.55	mg/kg	1.1	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Dinitrophenol, 2,4-	51-28-5	0.65	mg/kg	1.3	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.52
Dinitrophenol, 2,4-	51-28-5	1.05	mg/kg	2.1	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.84
Dinitrophenol, 2,4-	51-28-5	2.7	mg/kg	5.4	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	2.2
Dinitrotoluene, 2,4-	121-14-2	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.052
Dinitrotoluene, 2,4-	121-14-2	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.053
Dinitrotoluene, 2,4-	121-14-2	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.056
Dinitrotoluene, 2,4-	121-14-2	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.057
Dinitrotoluene, 2,4-	121-14-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dinitrotoluene, 2,4-	121-14-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dinitrotoluene, 2,4-	121-14-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Dinitrotoluene, 2,4-	121-14-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Dinitrotoluene, 2,6-	606-20-2	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.046
Dinitrotoluene, 2,6-	606-20-2	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.047
Dinitrotoluene, 2,6-	606-20-2	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.05
Dinitrotoluene, 2,6-	606-20-2	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.051
Dinitrotoluene, 2,6-	606-20-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Dinitrotoluene, 2,6-	606-20-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Dinitrotoluene, 2,6-	606-20-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Dinitrotoluene, 2,6-	606-20-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Di-n-octyl phthalate	117-84-0	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Di-n-octyl phthalate	117-84-0	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Di-n-octyl phthalate	117-84-0	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Di-n-octyl phthalate	117-84-0	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Fluoranthene	206-44-0	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Fluoranthene	206-44-0	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Fluoranthene	206-44-0	0.191	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Fluoranthene	206-44-0	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Fluorene	86-73-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Fluorene	86-73-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Fluorene	86-73-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Fluorene	86-73-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Hexachlorobenzene	118-74-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Hexachlorobenzene	118-74-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Hexachlorobenzene	118-74-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Hexachlorobenzene	118-74-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Hexachlorobutadiene	87-68-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Hexachlorobutadiene	87-68-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Hexachlorobutadiene	87-68-3	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Hexachlorobutadiene	87-68-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Hexachlorocyclopentadiene	77-47-4	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Hexachlorocyclopentadiene	77-47-4	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Hexachlorocyclopentadiene	77-47-4	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Hexachlorocyclopentadiene	77-47-4	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Hexachloroethane	67-72-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Hexachloroethane	67-72-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.063
Hexachloroethane	67-72-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.1
Hexachloroethane	67-72-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.26
HMX	2691-41-0	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.075
HMX	2691-41-0	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.076
HMX	2691-41-0	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.08
HMX	2691-41-0	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.082
Indeno(1,2,3-cd)pyrene	193-39-5	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Indeno(1,2,3-cd)pyrene	193-39-5	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Indeno(1,2,3-cd)pyrene	193-39-5	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Indeno(1,2,3-cd)pyrene	193-39-5	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Iron	7439-89-6	9270	mg/kg	7.5		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		1.7
Iron	7439-89-6	19300	mg/kg	6.4		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		1.5
Iron	7439-89-6	21400	mg/kg	12		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		2.8
Iron	7439-89-6	21700	mg/kg	7.6		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		1.7
Isophorone	78-59-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Isophorone	78-59-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Isophorone	78-59-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Isophorone	78-59-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Lead	7439-92-1	7	mg/kg	7.5	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	0.15
Lead	7439-92-1	13	mg/kg	6.4		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.13
Lead	7439-92-1	22.9	mg/kg	12		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.24
Lead	7439-92-1	23.7	mg/kg	7.6		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.15
Magnesium	7439-95-4	1810	mg/kg	610		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		12
Magnesium	7439-95-4	4360	mg/kg	320		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		6.4
Magnesium	7439-95-4	4970	mg/kg	370		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		7.5
Magnesium	7439-95-4	9370	mg/kg	380		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		7.6
Manganese	7439-96-5	165	mg/kg	1.1		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.037
Manganese	7439-96-5	337	mg/kg	1.9		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.064
Manganese	7439-96-5	446	mg/kg	2.3		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.076
Manganese	7439-96-5	1670	mg/kg	9.1		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.3
Mercury	7439-97-6	0.021	mg/kg	0.12	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	0.018
Mercury	7439-97-6	0.024	mg/kg	0.1	J	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	B	0.015
Mercury	7439-97-6	0.11	mg/kg	0.2	J	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	B	0.029
Mercury	7439-97-6	0.14	mg/kg	0.13		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.019
Methylnaphthalene, 2-	91-57-6	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Methylnaphthalene, 2-	91-57-6	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Methylnaphthalene, 2-	91-57-6	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Methylnaphthalene, 2-	91-57-6	0.616	mg/kg	0.42		AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5		0.084
Methylphenol, 2-	95-48-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Methylphenol, 2-	95-48-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Methylphenol, 2-	95-48-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Methylphenol, 2-	95-48-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Naphthalene	91-20-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Naphthalene	91-20-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Naphthalene	91-20-3	0.337	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Naphthalene	91-20-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Nickel	7440-02-0	12	mg/kg	3		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.17
Nickel	7440-02-0	21.3	mg/kg	2.5		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.15
Nickel	7440-02-0	25.7	mg/kg	4.8		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.28
Nickel	7440-02-0	26.7	mg/kg	3		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.17
Nitroaniline, 2-	88-74-4	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Nitroaniline, 2-	88-74-4	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Nitroaniline, 2-	88-74-4	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Nitroaniline, 2-	88-74-4	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Nitroaniline, 3-	99-09-2	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Nitroaniline, 3-	99-09-2	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
Nitroaniline, 3-	99-09-2	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Nitroaniline, 3-	99-09-2	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Nitroaniline, 4-	100-01-6	0.215	mg/kg	0.43	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
Nitroaniline, 4-	100-01-6	0.26	mg/kg	0.52	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Nitroaniline, 4-	100-01-6	0.42	mg/kg	0.84	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
Nitroaniline, 4-	100-01-6	1.1	mg/kg	2.2	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Nitrobenzene	98-95-3	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.058
Nitrobenzene	98-95-3	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.058
Nitrobenzene	98-95-3	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.062
Nitrobenzene	98-95-3	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.063
Nitrobenzene	98-95-3	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Nitrobenzene	98-95-3	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Nitrobenzene	98-95-3	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Nitrobenzene	98-95-3	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Nitrophenol, 2-	88-75-5	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Nitrophenol, 2-	88-75-5	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Nitrophenol, 2-	88-75-5	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Nitrophenol, 2-	88-75-5	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Nitrophenol, 4-	100-02-7	0.55	mg/kg	1.1	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Nitrophenol, 4-	100-02-7	0.65	mg/kg	1.3	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.52
Nitrophenol, 4-	100-02-7	1.05	mg/kg	2.1	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.84
Nitrophenol, 4-	100-02-7	2.7	mg/kg	5.4	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	2.2
Nitrotoluene, 2-	88-72-2	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.044
Nitrotoluene, 2-	88-72-2	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.044
Nitrotoluene, 2-	88-72-2	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.047
Nitrotoluene, 2-	88-72-2	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.048
Nitrotoluene, 3-	99-08-1	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.073
Nitrotoluene, 3-	99-08-1	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.074
Nitrotoluene, 3-	99-08-1	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.079
Nitrotoluene, 3-	99-08-1	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.08
Nitrotoluene, 4-	99-99-0	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.054
Nitrotoluene, 4-	99-99-0	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.055
Nitrotoluene, 4-	99-99-0	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.058
Nitrotoluene, 4-	99-99-0	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.059
n-Nitroso-di-n-propylamine	621-64-7	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
n-Nitroso-di-n-propylamine	621-64-7	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
n-Nitroso-di-n-propylamine	621-64-7	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
n-Nitroso-di-n-propylamine	621-64-7	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
n-Nitrosodiphenylamine	86-30-6	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.087
n-Nitrosodiphenylamine	86-30-6	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.1
n-Nitrosodiphenylamine	86-30-6	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.17
n-Nitrosodiphenylamine	86-30-6	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Pentachlorophenol	87-86-5	0.55	mg/kg	1.1	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.43
Pentachlorophenol	87-86-5	0.65	mg/kg	1.3	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.52
Pentachlorophenol	87-86-5	1.05	mg/kg	2.1	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.84
Pentachlorophenol	87-86-5	2.7	mg/kg	5.4	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	2.2
Phenanthrene	85-01-8	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Phenanthrene	85-01-8	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Phenanthrene	85-01-8	0.306	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Phenanthrene	85-01-8	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Phenol	108-95-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Phenol	108-95-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Phenol	108-95-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Phenol	108-95-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Potassium	7440-09-7	725	mg/kg	750	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	7.5
Potassium	7440-09-7	1170	mg/kg	640		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		6.4
Potassium	7440-09-7	1340	mg/kg	1200		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		12
Potassium	7440-09-7	1740	mg/kg	760		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		7.6
Pyrene	129-00-0	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Pyrene	129-00-0	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Pyrene	129-00-0	0.195	mg/kg	0.42	J	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	J	0.084
Pyrene	129-00-0	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
RDX	121-82-4	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.074
RDX	121-82-4	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.075
RDX	121-82-4	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.079
RDX	121-82-4	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.081
Selenium	7782-49-2	0.32	mg/kg	7.6	J	AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5	B	0.24
Selenium	7782-49-2	0.38	mg/kg	6.4	J	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	B	0.2
Selenium	7782-49-2	1.3	mg/kg	12	J	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	B	0.38
Selenium	7782-49-2	3.75	mg/kg	7.5	U	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	U	0.23

Table F-3
Sediment Data Used in the Screening-Level Ecological Risk Assessment
Ash Pit 1
Plum Brook Ordnance Works, Sandusky, Ohio

PARAMETER	CASNUM	RES	UNIT	REP_LIMIT	VQUAL	LOCATION_CODE	SAMPLE_NO	USER_TEST_GROUP	PURPOSE	SAMPLE_DATE	START_DEPTH	END_DEPTH	LABQUAL	METH_DET_LIM
Silver	7440-22-4	0.099	mg/kg	0.76	J	AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5	B	0.091
Silver	7440-22-4	0.32	mg/kg	0.64	U	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	U	0.076
Silver	7440-22-4	0.375	mg/kg	0.75	U	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	U	0.09
Silver	7440-22-4	0.6	mg/kg	1.2	U	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	U	0.15
Sodium	7440-23-5	83.1	mg/kg	750	J	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	B	37
Sodium	7440-23-5	112	mg/kg	760	J	AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5	B	38
Sodium	7440-23-5	320	mg/kg	640	U	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	U	32
Sodium	7440-23-5	600	mg/kg	1200	U	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	U	61
Tetryl	479-45-8	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.045
Tetryl	479-45-8	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.045
Tetryl	479-45-8	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.048
Tetryl	479-45-8	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.049
Thallium	7440-28-0	1.9	mg/kg	3.8	U	AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5	U	2.6
Thallium	7440-28-0	3.2	mg/kg	6.4	U	AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5	U	2.2
Thallium	7440-28-0	3.75	mg/kg	7.5	U	AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5	U	2.5
Thallium	7440-28-0	6	mg/kg	12	U	AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5	U	8.2
Total organic carbon	10-35-5	21000	mg/kg	0.22		AP1-SD01	AP1007	GEN CHEMISTRY	REG	19-May-09	0	0.5		0.22
Total organic carbon	10-35-5	43000	mg/kg	0.8		AP1-SD04	AP1013	GEN CHEMISTRY	REG	20-May-09	0	0.5		0.8
Trichlorobenzene, 1,2,4-	120-82-1	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Trichlorobenzene, 1,2,4-	120-82-1	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Trichlorobenzene, 1,2,4-	120-82-1	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Trichlorobenzene, 1,2,4-	120-82-1	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Trichlorophenol, 2,4,5-	95-95-4	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Trichlorophenol, 2,4,5-	95-95-4	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Trichlorophenol, 2,4,5-	95-95-4	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Trichlorophenol, 2,4,5-	95-95-4	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Trichlorophenol, 2,4,6-	88-06-2	0.11	mg/kg	0.22	U	AP1-SD02	AP1008	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.043
Trichlorophenol, 2,4,6-	88-06-2	0.13	mg/kg	0.26	U	AP1-SD03	AP1012	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.052
Trichlorophenol, 2,4,6-	88-06-2	0.21	mg/kg	0.42	U	AP1-SD04	AP1013	SEMIVOLATILES	REG	20-May-09	0	0.5	U	0.084
Trichlorophenol, 2,4,6-	88-06-2	0.55	mg/kg	1.1	U	AP1-SD01	AP1007	SEMIVOLATILES	REG	19-May-09	0	0.5	U	0.22
Trinitrobenzene, 1,3,5-	99-35-4	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.044
Trinitrobenzene, 1,3,5-	99-35-4	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.044
Trinitrobenzene, 1,3,5-	99-35-4	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.047
Trinitrobenzene, 1,3,5-	99-35-4	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.048
Trinitrotoluene, 2,4,6-	118-96-7	0.085	mg/kg	0.17	U	AP1-SD01	AP1007	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.044
Trinitrotoluene, 2,4,6-	118-96-7	0.09	mg/kg	0.18	U	AP1-SD04	AP1013	EXPLOSIVES	REG	20-May-09	0	0.5	U	0.044
Trinitrotoluene, 2,4,6-	118-96-7	0.095	mg/kg	0.19	U	AP1-SD02	AP1008	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.047
Trinitrotoluene, 2,4,6-	118-96-7	0.095	mg/kg	0.19	U	AP1-SD03	AP1012	EXPLOSIVES	REG	19-May-09	0	0.5	U	0.048
Vanadium	7440-62-2	12.4	mg/kg	3.7		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.049
Vanadium	7440-62-2	19.2	mg/kg	3.2		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.042
Vanadium	7440-62-2	21.9	mg/kg	3.8		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.05
Vanadium	7440-62-2	25.5	mg/kg	6.1		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.08
Zinc	7440-66-6	33.3	mg/kg	1.5		AP1-SD03	AP1012	METALS	REG	19-May-09	0	0.5		0.28
Zinc	7440-66-6	45.3	mg/kg	1.3		AP1-SD02	AP1008	METALS	REG	19-May-09	0	0.5		0.24
Zinc	7440-66-6	98.9	mg/kg	1.5		AP1-SD01	AP1007	METALS	REG	19-May-09	0	0.5		0.29
Zinc	7440-66-6	137	mg/kg	2.4		AP1-SD04	AP1013	METALS	REG	20-May-09	0	0.5		0.46

RESPONSE TO COMMENTS

Response to External Comments
Draft Baseline Human Health Risk Assessment and
Screening-Level Ecological Risk Assessment,
Ash Pit 1 and Ash Pit 3
Plum Brook Ordnance Works, Sandusky, Ohio,
Dated December 20, 2010
FUDS Project No. G05OH001821

Note that the following comments reference the Baseline Human Health Risk Assessment (BHHRA) for Ash Pit 1 (AP1) and Ash Pit 3 (AP3) and the Screening-Level Ecological Risk Assessment (SLERA) for AP1 and Ash Pit 3 AP3, each of which was issued as a combined AP1/AP3 report. Please note that the U.S. Army Corps of Engineers has decided to issue two separate BHHRA reports, one for AP1 and one for AP3, rather than the combined report issued previously. The AP1 and AP3 SLERAs are likewise being issued as two separate reports.

Comments by Janusz Byczkowski, Ph.D., Ohio Environmental Protection Agency (OEPA) Toxicologist, received February 17, 2011.

Comment 1: **BHHRA Executive Summary AP3 P. ES-5 L# 1 – 7 S. 7.3 P. 7-4 L# 24 and P. 7-5 L# 4. <u>This document states:</u> "…** ***ILCR = 1E-6 (excluding background-related arsenic)*** **[…]** ***ILCR = 3E-6 (excluding background-related arsenic)*****…"and then "…***apparent background-related* **manganese […]** ***appropriately excluded*** **[…]** ***background-related contribution of arsenic*** **[…]** ***appropriately excluded*****…" While in the Section 2.4.3.1 (P. 2-8) at least there is a sentence, that background "…***method* **[…]** ***differs from that shown in current OEPA (2004a) guidance*****…" there is no such an explanation provided either in** ***Executive Summary,*** **in** ***Introduction,*** **or in** ***Recommendations*****. To the contrary, in the** ***Introduction*** **(Sect. 1.5, P. 1-5; L# 17) this document states that "…***The BHHRA was performed consistent with* **[…]** ***Ohio Environmental Protection Agency (OEPA) guidance*****…" and then (P. ES-6, L# 24) "…***background-related contributions of arsenic in AP3 soil are appropriately excluded*****…" Since the** ***Executive Summary, Introduction*** **and** ***Recommendations,*** **are the parts of the document which probably will be the most read by the public, a detailed rationale for deviation from the current OEPA-DERR standard risk assessment guidance should be included as a part of the introduction of the BHHRA document. I suggest a revision of these Documents, which should follow the suggestions listed below:**

a. On ***Distribution Lists*** **(BHHRA, SLERA) please correct the address of Janusz Z. Byczkowski.**

b. Please emphasize in ***Executive Summary*** **that background screening methodology differs from that, currently recommended by OEPA-DERR, and provide justification in the** ***Introduction*****.**

Response 1: a. The corrected address shall be used for future deliverables:

Janusz Z. Byczkowski, Ph.D., D.Sc., DABT.
Div. Emergency and Remedial Response
Lazarus Government Ctr.
P.O. Box 1049
50 W. Town Str., Suite 700
Columbus, OH 43216-1049

b. It is agreed that it is possible that certain stakeholders may only read the executive summary of this document. In the executive summary on page ES-3, 1st full paragraph, we will add text stating that the standard steps of risk assessment, data analysis, exposure assessment, toxicity assessment, risk characterization, uncertainty analysis were executed in the risk assessment. Data analysis for inorganic constituents differs from OEPA-DERR 2004, and is further described in Section 2.4.3.1 Background Screening of Inorganics.

Comment 2: **BHHRA S. 3.2.1 P. 3-19 L# 17 and P. 3-20 L# 3 Also, Tables 2-6 to 2-9; 2-11; 2-13; 2-14; and Appendix B. This document states: "…*One-half the reporting limit is used as the ProUCL input concentration for nondetects*…" The ProUCL ver 4.0.(05) should be used for modeling/calculating reasonable maximum exposure (RMEs) with 100% reporting limit (RL) as input concentration for nondetects (but not for screening, or calculations of background concentration). For screening- selecting COPCs, on the other hand, it is appropriate to use the MAXIMUM concentration in each medium or 1/2 of the Reporting Limit (RL) if the nondetect RL exceeds the toxicity-based screening concentration (=0.1 x RSL for non-carcinogenic or 1.0 x RSL for carcinogenic chemicals). Please revise the exposure concentrations data (EPCs) calculated with ProUCL software, by using 100% RL as an input for RME modeling at NDs mode.**

Response 2: Maximum detected concentrations (MDC) were used in the data analysis screening portion of the risk assessment. The exposure point concentration (EPC) protocol used in the BHHRA is consistent with that which has been performed for PBOW human health and ecological risk assessments for the past decade, consistent with other FUDS assessments across the country and consistent with RAGS Part A (EPA 1989). PBOW EPC protocol was based on RAGS Part A Chapter 5 Data Evaluation Section which say to use ½ the quantitation limit for non-detect results if there is reason to believe that the chemical present in a sample. Quantitation limit is further defined as the lowest level at which a chemical can be accurately reproducibly quantified. This guidance even recommends that individual samples with elevated RLs be excluded from the quantitative risk assessment.

The ProUCL Version 4.00.05 05 User's Guide (EPA, 2010a) states that the full detection limit should be used rather than ½ the detection limit. Section

1.12 of the ProUCL User's Guide cautions that ProUCL does not make distinctions between MDLs, adjusted MDLs, sample quantitation limits, or instrument detection limits, and that, "It is the user's responsibility to supply correct numerical values (should be entered as reported detection limit value) for ND observations in the data set…" With this responsibility in mind, it must be recognized that the RL is not a detection limit, but is a limit of quantitation, which is defined as the concentration at which an analyte can be reported with a specified degree of accuracy (generally 20 percent, depending on the method). The method detection limit (MDL), however, is a true sample-specific detection limit reported for each sample and analyte. It is defined as the lowest concentration of an analyte that can be distinguished from a blank with 99% certainty. Note that the RL is the MDL multiplied by a factor of 3 to 5; that is, the RL (a limit of quantitation) is 3 to 5 times higher than the MDL (detection limit). The detection limits (i.e., MDLs) are not available for some of the historical data collected prior to 2008, but the RLs are available. Use of ½ the RL is a conservative (i.e., high) estimate of the full detection limit, as ½ the RL is 1.5 to 2.5 times higher than the detection limit.

Further, the use of full RLs as "detection limits" in ProUCL is not desirable because goodness-of-fit tests used in the ProUCL upper confidence limit module are based on all values greater than the highest value identified by the ProUCL user as a "detection limit," as described in Section 4.1 of the ProUCL Version 4.00.05 Technical Guide (EPA, 2010b). For example, a hypothetical data set of n=30 may have 29 detections and a single nondetect characterized by an elevated RL value that is greater than all detected values except for 5 samples. In this case, ProUCL bases the distribution only on the 5 samples that are higher than the elevated RL. This may either limit the selection of UCL methods or may result in the selection of a distribution type that fits the 5 highest detections but is inappropriate for the rest of the sample set (i.e., the other 24 detections). As a result, a UCL value that is nonconservative may be selected because the wrong distribution type was selected by ProUCL based only on the five highest detections. Also, EPA (1989) risk assessment guidance directs that "J-" qualified data should be used to calculate the exposure point concentration based on the reported levels. Because many "J" qualified data are less than the RL (but greater than the MDL), the use of even a single RL for a nondetect result will likely eliminate the inclusion of these "J" values in the distribution fitting. Therefore, use of the RL as the "detection limit" value in ProUCL may lead to distribution testing input that eliminates the consideration of J- qualified data, which is inconsistent with the current EPA (1989) risk assessment guidance practice of assuming that J-qualified data are valid detected values.

References cited in this response:

U.S. Environmental Protection Agency (EPA), 2010a, ***ProUCL Version 4.00.04 User Guide***, Draft, Office of Research and Development, Technology Support Center Characterization and Monitoring Branch, Las Vegas, Nevada, April, EPA/600/R-07/038, April.

U.S. Environmental Protection Agency (EPA), 2010b, ***ProUCL Version 4.00.04 Technical Guide***, Draft, Office of Research and Development, Technology Support Center Characterization and Monitoring Branch, Las Vegas, Nevada, EPA/600/R-07/041, May.

U.S. Environmental Protection Agency (EPA), 1989, ***Risk Assessment Guidance for Superfund*, *Volume I, Human Health Evaluation Manual (Part A)***, Interim Final, Office of Emergency and Remedial Response, Washington, D.C., EPA/540/1-89/002, May.

Comment 1: **SLERA ES. P. 1 L# 31. This document states: "*…additional screening criteria (e.g., comparison with background data…*" For comments, see above: BHHRA comment # 1. Please emphasize that background screening methodology differs from that, currently recommended by OEPA-DERR, and provide justification.**

Response 1: See response to HHRA comment 1.b. Text will be added to ES-1 3rd full paragraph stating that background screening for inorganics differs from OEPA-DERR 2004. In section 2.2.3.3 Background Evaluation 2nd full paragraph, will be expanded with rationale for background inorganic screening, and that the background screening differs from OEPA-DERR 2004. In Section 2.2.3.3 a more detailed description of inorganic background screening will be included. The PBOW Project Delivery Team, including members from the U.S. Army Corps of Engineers (USACE), Nashville and Huntington Districts and their contractors, the National Aeronautics and Space Administration (NASA), and the OEPA have strived to cooperate together for more than a decade. Site-specific team agreements have been made over the years, including how background screening for inorganics. The methodology used for background screening and evaluation in the risk assessment for inorganics was previously requested by OEPA risk assessors for soil in 1999 and was again agreed to by the Project Delivery Team in 2002 for groundwater (Shaw, 2005). It has been used for all PBOW risk assessments conducted since 1999 for consistency from AOC to AOC.

Comment 2: **SLERA S. 2.2.2 P. 2-10 L#14 Also, Tables 2-9 to 2-14. This document states: "*…One-half the reporting limit is used as the ProUCL input concentration for nondetects…*" For comments, see above: BHHRA comment # 2. Please revise the exposure concentrations data (EPCs) calculated with ProUCL software, by using 100% RL as an input for RME modeling at NDs mode.**

Response 2: See HHRA response #2.

Comment 3: **SLERA S.5.1 P. 5-2 L# 3 and S. 6.0 P. 6-1 L.# 11. This document states:**

"*…Thallium was a COPEC in soil at AP 3 and was only detected in 3 out of 16 soil samples (Table 2-12)…*" and then: "*…Thallium was only detected in*

***2 out of 16 samples at concentrations exceeding toxicological and background concentrations…*"**

These two statements may appear contradictory, especially that the Table 2-12 is not detailed enough to relate individual detected concentrations to toxicity values or background levels.
Please harmonize the two statements with Table 2-12.

Response 3: The statements are correct as written, as one refers to the overall detection frequency, and the other refers to the number of detections that exceed screening criteria (in looking at Table 2-12, one can see that the minimum detected thallium concentration of 0.5 mg/kg is below both the BSC and ESV). To clear up any confusion, the statement in section 5.1 will be revised consistent with the following, "Thallium was a COPEC in soil at AP3 and was only detected in 3 out of 16 soil samples, *2 of which exceeded the BSC and ESV* (Table 2-12)."