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ENVIRON

September 11, 1998

151745

Ms. Sheri Bianchin
USEPA Region 5
77 West Jackson Blvd
Chicago, IL 60604-3590

Re: Revised Baseline Risk Assessment
ACS NPL Site, Griffith, IN

Dear Ms. Bianchin:

Please find enclosed four copies of the Revised Baseline Risk Assessment for the American Chemical Services (ACS) NPL Site. The ACS Executive Committee has worked with USEPA over the past year to complete this document and has appropriately addressed every concern raised by the Agency during this period. Several of the more significant additions and changes made in response to USEPA's comments are listed below, along with primary location(s) of the information in the enclosed report:

- A detailed future land use evaluation was performed to support the conclusion that continued industrial land use at the ACS Site is a reasonable and appropriate assumption for use in the Revised Baseline Risk Assessment (Section 3.1.2, Appendix A).

- Additional soil/sediment samples were collected in September 1997 at the ACS facility (Area 1) and at several off-Site locations (Areas 5A and 6) (Tables 2-1a, 2-1b, 2-2). Analytical data for these samples were used to estimate potential worker, trespasser and residential exposures to surface soil/sediment in the risk assessment (Tables 2-5a, 2-5b, 2-6).

- The following data provided over the past year have also been added to the database and included in this Baseline Risk Assessment: (1) data collected by USEPA for firepond soil in Area 1 (Table 2-1b), surface water in Areas 4A and 4B (Table 2-4), and ground water from all monitoring wells and several private wells (Tables 2-3a, 2-

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3b), provided to the ACS Committee in August 1997; (2) ground water data collected by Montgomery Watson for all monitoring wells and several private wells in September and December 1997 (Tables 2-3a, 2-3b); and (3) ground water data collected by USEPA for ATMW-4D, provided to the ACS Committee on July 20, 1998 (Table 2-3b).

- Exposures to subsurface soils were initially evaluated for workers performing yearly excavations to repair underground utilities. In addition to such exposures, at the request of USEPA, the Revised Baseline Risk Assessment evaluates construction exposure scenarios assuming less frequent, but more extensive excavations to construct buildings in Areas 2 and 3 (Sections 3.2.2, 3.2.3, 3.3.1.1, 3.4.3, 5, Table 3-1).

- USEPA concerns about subsurface contamination were also addressed by using two different sets of concentrations to evaluate future exposures to surface soil: (1) assuming that future surface soil concentrations are equal to current surface soil concentrations, and (2) assuming that future surface soil concentrations are equal to current subsurface soil concentrations (Section 3.2.1, 3.2.3, 3.3.1, 5, Table 3-1).

- A bounding scenario assuming chronic exposure to maximum concentrations of all detected chemicals in Areas 2 and 3 was also added to the Report, at the request of USEPA (Section 5.3.3.2).

- At the request of USEPA, the area surrounding the ACS Site is now separated into three areas (5A, 5B, and 6) (Figure 3-3). Potential residential risks are estimated for Areas 5A and 6 (Sections 3.2.6, 3.2.8, 3.4.5), and potential worker risks are estimated for Area 5B (Sections 3.2.7, 3.4.6). The off-Site area was originally identified as a single area, with both residents and workers.

- The on-Site area previously identified as "Wetlands" with trespasser receptors is now separated into two areas (4A with wetlands, and 4B without wetlands) (Figure 3-3). Trespassing is evaluated for both areas. In addition, future potential risks associated with routine worker and utility maintenance worker exposure scenarios are evaluated for Area 4B (Section 3.2.5).

- Hypothetical future worker exposures to on-Site ground water are estimated for both outdoor landscaping and indoor showering (Section 3.2).

- Adult and child residential exposures to off-Site ground water in Area 5A were initially evaluated for drinking water ingestion, showering, and outdoor water use (adult: watering the lawn, child: playing in sprinkler used to water the lawn). The Revised Baseline Risk Assessment now evaluates a bath scenario instead of a shower scenario for children, and a swimming scenario instead of a sprinkler scenario for children (Sections 3.2.6, 3.4.5), as requested by USEPA.

- Residential exposures to off-Site ground water are calculated using data from private wells for current exposures and data from Lower Aquifer monitoring wells for potential future exposures (Sections 3.2.6, 3.3.2, 5.1). The issue of potential residential use of the Upper Aquifer was raised at a meeting with USEPA at the end of February. A review of state law and the physical characteristics of the aquifers near the Site, indicates that the clay layer is too shallow for wells to be installed in the Upper Aquifer (Section 3.2.6), and that the regional water quality is better for potable use in the Lower Aquifer. However, at the request of USEPA, a bounding estimate of future off-site ground water exposures is calculated based on current concentrations in the Upper Aquifer (Section 5.3.3).

- USEPA published a revised Exposures Factors Handbook (USEPA 1997) that was made available to the public (including the ACS Technical Committee and ENVIRON) in March 1998. As requested, over the past summer exposure assumptions throughout the Report were updated to use information from that revised guidance (Section 3.4, Tables 3-5, 3-6).

- Dermal risk estimates are included in the body of the Report, and are based on the dermal absorption fractions requested by USEPA (and in USEPA 1998 guidance) (Section 3.4), and on dermal permeability coefficients calculated using the equations from USEPA's January 1992 Dermal Exposure Assessment guidance (Section 3.4, Table 4-1).

- The USEPA (1996) adult blood lead model is used to estimate blood lead levels in the fetuses of female workers of child-bearing age and in the fetuses of female trespassers (9 to 18 years old) (Sections 4.2.2, 5.2).

- A discussion of the potential for vinyl chloride to migrate via soil gas to off-Site residences has been added to the Report (Section 5.3.1).

- Air dispersion modeling for evaluating inhalation exposures of both on-Site receptors and off-Site residents was modified at the request of USEPA to account for potentially simultaneous exposures to emissions from different areas of the Site (Appendix B).

- A discussion of the potential impacts of truck traffic over the On-Site Containment Area has been added to the report (Section 5.3.8).

- Non-TAL/TCL tentatively identified compounds with USEPA toxicity criteria in IRIS or HEAST are included in the baseline risk estimates (Tables 3-2, 3-3, 3-4).

Please feel free to give either one of us a call with any questions you may have.

Sincerely,

Stephen T. Washburn
Principal

Sincerely,

Kristen G. Edelmann
Senior Associate

cc: James Mayka, USEPA
Wendy Carney, USEPA
Linda Nachowicz
Vince Epps, IDEM
ACS Technical Committee

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Date 9/11/98

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EXECUTIVE SUMMARY

The American Chemical Service Inc. (ACS) Site is located in Griffith, Indiana. The Site is zoned as general industrial, and an active chemical manufacturing facility is currently located on a portion of the ACS property. In addition to the active manufacturing facility, the ACS Site includes the former Kapica-Pazmey property and approximately four acres leased by ACS from CSX. Land surrounding the Site is currently zoned for industrial use, but historically has been used for a combination of industrial, commercial, residential, and recreational purposes.

The ACS Site was placed on the National Priority List (NPL) in 1984. The Remedial Investigation (RI) was completed in 1991, with a Feasibility Study (FS) completed in 1992. USEPA issued a Record of Decision (ROD) for the ACS Site in September 1992. A Baseline Human Health Risk Assessment was prepared as part of the RI/FS, and reportedly served as the basis for the development of remediation levels included by USEPA in the ROD. Activities at the Site since the ROD was issued include: installing a perimeter ground water containment system (PGCS); installing a barrier wall and extraction system (BWES); collecting additional characterization data; conducting soil treatability studies; and placing an additional one-foot clay cap over the Off-Site Containment Area.

In the six years since the RI/FS was completed, a substantial amount of new data have been collected at the ACS Site, and significant advances have been made in the field of risk assessment. This report presents a revised baseline risk assessment for the ACS Site based on all currently available Site data, currently accepted risk assessment methodologies, input assumptions consistent with Site conditions, and relevant regulatory guidance. Volume I of the revised baseline risk assessment evaluates potential risk under current and reasonably anticipated future conditions at and surrounding the Site, disregarding the corrective measures and institutional controls that have been put in place to date. The impact of the remedial measures completed at the Site on the revised baseline risk estimates are evaluated in Volume II of the report.

A comprehensive review of information pertinent to future land use patterns surrounding the Site confirms the assumption of continued industrial land use at the Site. However, future land use in off-Site areas is assumed to include non-industrial uses, given the existence of homes in industrially zoned areas adjacent to the Site. The potential for human exposure to Site constituents is evaluated in the revised baseline risk assessment for the following current and reasonably anticipated future land uses:

- Industrial land use at the Site; and
- Industrial/commercial, residential, and recreational land uses surrounding the Site.

The potentially exposed populations under these land uses are:

- On-Site routine workers, excavation workers, and trespassers; and
- Off-Site residents (adults and children) and workers.

Potential exposures are quantitatively evaluated for incidental ingestion of and dermal contact with soil, sediment, ground water and surface water, and inhalation of airborne constituents. Potential exposures via these routes are quantified by multiplying: (1) the concentrations of constituents in an environmental medium at locations of potential exposure over an expected period of exposure; by (2) the estimated intake of the environmental medium by a potentially exposed population. The product of these components is combined with toxicity values to estimate theoretical cancer risk and the potential for adverse noncancer health effects.

Cancer risks are expressed as the theoretical probability that an individual will develop cancer during his or her lifetime as a result of an exposure. In evaluating the potential for adverse noncancer health effects, USEPA generally relies on a hazard index (HI) approach. The hazard index (HI) is the ratio of the calculated dose to the dose below which adverse noncancer effects are not anticipated. If the HI is less than or equal to one, then the exposure is considered to pose little or no potential for deleterious effects.

The conclusions of Volume I of this report are as follows:

Current Exposures

- On-Site:
  For all current on-Site exposure scenarios, central tendency estimates of cumulative potential cancer risks are approximately four-in-one-million (4×10^{-6}) or lower, and high-end estimates are approximately two-in-one-hundred-thousand (2×10^{-5}) or lower. For all current on-Site exposure scenarios, the central tendency and high-end exposure estimates of HI are at or below 1, when segregated according to target organ and effect. This indicates that deleterious noncancer health effects are not expected under current conditions. Potential exposures to lead are calculated to be within USEPA guidelines.

- Off-Site:
  For all current off-Site exposure scenarios, central tendency estimates of cumulative potential cancer risks are approximately two-in-one-hundred-thousand (2×10^{-5}) or lower, and high-end estimates are approximately nine-in-one-hundred-thousand (9×10^{-5}) or lower. Potential cancer risks are driven by the detection of arsenic in

drinking water, at concentrations that are below the Maximum Contaminant Level (MCL) established by USEPA for public drinking water, and are consistent with background levels in ground water. If arsenic in drinking water is not included, potential risks are at or below approximately three-in-one-hundred-thousand (3×10^{-5}) under the high-end exposure scenario. For all current off-Site current exposure scenarios, the central tendency and high-end exposure estimates of HI are at or below 1, when segregated according to target organ and effect. This indicates that deleterious noncancer health effects are not expected under current conditions. Potential exposures to lead are calculated to be within regulatory guidelines.

Hypothetical Future Exposures

- On-Site:

  For all hypothetical future on-Site scenarios, central tendency estimates of cumulative potential lifetime cancer risk are approximately nine-in-one-hundred-thousand (9×10^{-5}) or lower, with central tendency HI values of 20 or lower. High-end estimates of cumulative potential lifetime cancer risk are at or below six-in-ten-thousand (6×10^{-4}) for all hypothetical future on-Site exposure scenarios, with high-end HI values of 30 or lower. With the exception of Area 3 (Kapica-Pazmey Area), potential on-Site exposures to lead under both control tendency and high-end exposure scenarios are expected to be within regulatory guidelines. In Area 3, hypothetical exposures of future routine workers and construction workers to lead could potentially result in blood lead levels exceeding USEPA criteria.

- Off-Site:

  For all hypothetical future off-Site scenarios, central tendency estimates of cumulative potential lifetime cancer risk are approximately three-in-one-hundred-thousand (3×10^{-5}) or lower, with central tendency HI values of 3 or lower. High-end estimates of cumulative potential lifetime cancer risk are two-in-ten-thousand (2×10^{-4}) or lower, with high-end HI values of 6 or lower. When segregated by target organ and effect, the HI values for both the high-end and central tendency estimates are equal to or less than one. Potential cancer risks are driven by the detection of arsenic in drinking water, at concentrations that are below the MCL established by USEPA and are consistent with background levels in ground water. Potential risks are at or below approximately two-in-one-hundred-thousand (2×10^{-5}) under the future high-end scenario if arsenic in drinking water is not included. Potential exposures to lead are calculated to be within regulatory guidelines.

The primary potential risks for each area of the ACS NPL Site are summarized in Table ES-1 below:

Table ES-1
Summary of Primary Potential Risks at the ACS NPL Site

Area/Receptor/Exposure Pathway with Greatest Risk	Estimated High-End Cancer Risk/HI Value		Central Tendency Cancer Risk/HI Value		Chemical(s) Contributing Most Significantly to Potential Risk
Area 1 - On-Site Containment Area and Still Bottoms/Treatment Lagoon					
Current Worker					
Ingestion of surface soil	4×10^{-6}	0.1	4×10^{-7}	0.06	PCB
Inhalation of vapor and particulates	1×10^{-5}	0.7	3×10^{-6}	0.06	Benzene, BCEE
Future Worker					
Dermal contact with ground water while excavating	3×10^{-4}	2[1]	3×10^{-5}	2[1]	Benzene
Inhalation of vapor and particulates	1×10^{-4}	20	2×10^{-5}	10	Benzene, BCEE, Chloroform
Ingestion of soil	9×10^{-5}	5	1×10^{-5}	1	PCB, PCE
Area 2 - Off-Site Containment Area					
Future Worker[2]					
Dermal contact with soil	1×10^{-4}	1	3×10^{-5}	1	PCB
Ingestion of soil	3×10^{-4}	8	3×10^{-5}	2[1]	PCB
Inhalation of vapor and particulates	8×10^{-5}	1	2×10^{-5}	1	BCEE, Benzene, Chloroform
Area 3 - Kapica-Pazmey Area					
Future Worker[2]					
Ingestion of subsurface soil	1×10^{-4}	6	1×10^{-5}	1	PCB, lead
Inhalation of vapor and particulates	1×10^{-4}	3	2×10^{-5}	3	Benzene, TCE
Area 4A - Wetlands					
Current Trespasser					
Ingestion of sediment	3×10^{-6}	0.1	6×10^{-8}	0.03	PCB
Inhalation of vapor and particulates	3×10^{-6}	0.06	7×10^{-8}	0.02	Benzene
Future Trespasser					
Ingestion of sediment	3×10^{-6}	0.1	6×10^{-8}	0.03	PCB
Inhalation of vapor and particulates	3×10^{-6}	0.06	7×10^{-8}	0.02	Benzene

Table ES-1
Summary of Primary Potential Risks at the ACS NPL Site

Area/Receptor/Exposure Pathway with Greatest Risk	Estimated High-End Cancer Risk/HI Value		Central Tendency Cancer Risk/HI Value		Chemical(s) Contributing Most Significantly to Potential Risk
Area 4B - North of Plant					
Current Trespasser					
Ingestion of sediment	2×10^{-6}	0.1	4×10^{-8}	0.03	PCB, B(a)P, As
Ingestion of surface water	3×10^{-6}	0.0004	6×10^{-8}	0.0001	Vinyl chloride
Future Worker					
Dermal contact with ground water while excavating	3×10^{-4}	1	3×10^{-5}	0.9	Benzene
Inhalation of vapors and particulates	6×10^{-5}	20	6×10^{-6}	10	Benzene
Dermal contact with water indoors (Lower Aquifer)	5×10^{-5}	0.1	5×10^{-6}	0.04	Vinyl chloride, Benzene, As
Area 5A - Off-Site East					
Current Resident					
Ingestion of drinking water (private wells)	$7 \times 10^{-5(3)}$	1	2×10^{-5}	0.5	As
Ingestion of soil	2×10^{-5}	2[1]	4×10^{-6}	0.5	As, B(a)P, PCB
Future Resident					
Ingestion of drinking water (lower aquifer)	$1 \times 10^{-4(3)}$	3[1]	2×10^{-5}	1	As
Area 5B - Off-Site North					
Future Utility Maintenance Worker[2]					
Dermal contact with ground water while excavating	3×10^{-5}	0.03	3×10^{-6}	0.03	Benzene
Area 6 - Off-Site West					
Current Resident					
Ingestion of sediment	3×10^{-5}	0.7	6×10^{-6}	0.1	B(a)P, As
Inhalation of vapors and particulates from the Site	2×10^{-5}	0.7	4×10^{-6}	0.5	Benzene, BCEE

Table ES-1
Summary of Primary Potential Risks at the ACS NPL Site

Area/Receptor/Exposure Pathway with Greatest Risk	Estimated High-End Cancer Risk/HI Value		Central Tendency Cancer Risk/HI Value		Chemical(s) Contributing Most Significantly to Potential Risk
Future Resident					
Ingestion of sediment	3×10^{-5}	0.7	6×10^{-6}	0.1	B(a)P, As
Inhalation of vapors and particulates from the Site	3×10^{-5}	0.8	8×10^{-6}	0.5	Benzene, BCEE

Notes:
(1) The HI value is less than or equal to one when segregated by target organ.
(2) There are no worker exposure scenarios under current conditions in Areas 2, 3, or 5B.
(3) The arsenic concentrations in private wells and lower aquifer monitoring wells were less than 5 ug/L (i.e., well below the MCL of 50 ug/L and lower than the regional average of approximately 10 ug/L). When arsenic is excluded from the calculations, potential cancer risks for water ingestion decrease to 4×10^{-8} for current use of private wells and 9×10^{-6} for future use of the lower aquifer.

The findings summarized above are based on an evaluation of the ACS Site assuming that no remediation has occurred or will occur in the future, as required by USEPA for the revised baseline risk assessment. Volume II of this revised baseline risk assessment evaluates the impact of remedial measures that have already been completed at the Site, including installation and operation of the PGCS and BWES. These systems have been installed to prevent further migration of constituents from the Site in the shallow aquifer. Residual concentrations present in the shallow ground water are expected to decrease due to the use of oxygen releasing compounds and natural attenuation processes, with a corresponding decrease in potential human health risks. Volume II evaluates the potential effect of natural attenuation on concentrations of benzene and bis(2-chloroethyl)ether (BCEE) in the off-Site shallow aquifer over time. Benzene and BCEE are the volatile organic compound (VOC) and semivolatile organic compound (SVOC), respectively, that account for the majority of potential risks from exposure to ground water in the shallow aquifer, based on the Volume I analyses.

By preventing off-Site migration of constituents in the shallow aquifer, the BWES and PGCS reduce potential future risks. The overall conclusions of Volume II of this report are as follows:

- Off-Site concentrations of benzene in the upper aquifer, and corresponding potential risks from exposure to that benzene, are predicted to decrease by at least an order of magnitude over the next 20 years. Benzene concentrations in the upper aquifer could also decrease by an order of magnitude or more within five years in locations where subsurface conditions are conducive to biodegradation.

- Off-Site concentrations of BCEE in the upper aquifer, and corresponding potential risks from exposure to BCEE, are predicted to decrease by an order of magnitude within five years.

- Off-Site concentrations of benzene, BCEE, and other constituents subject to degradation in surface water and sediment are also expected to decrease significantly due to the influence of the BWES and PGCS and natural attenuation processes.

In Volume I, data limitations regarding the condition and contents of on-Site drums contributed to overall uncertainty in the estimated off-Site risks, because of the potential for future releases of waste material from drums. The BWES and PGCS eliminate this source of uncertainty because they would prevent future releases from drums to the ground water from migrating off-Site in the upper aquifer.

1.0 INTRODUCTION

This report presents the revised baseline human health risk assessment for the American Chemical Service, Inc. (ACS) National Priority List (NPL) Site, in Griffith, Indiana. The baseline risk assessment is conducted in part to determine the need for remedial action at the Site. That is, if no action is taken, will the Site pose a threat to current or future Site "users", or the nearby community? Furthermore, the risk assessment can be used to provide a basis for development of protective cleanup goals should remedial action be deemed necessary. Land use is an important consideration in the development of the baseline risk assessment, and is also an influence in the remedy selection decision.

The ACS NPL Site (the Site) is located at and near 420 South Colfax Avenue and includes the ACS property, the former Kapica-Pazmey property, and approximately four acres leased by ACS from CSX. Historical activities at the Site have included solvent recovery, chemical manufacturing, incineration of industrial waste, and disposal of hazardous substances. The Site is currently zoned general industrial, and an active chemical manufacturing facility is currently located on a portion of the ACS property and leased CSX property.

The Site was placed on the NPL on September 21, 1984, and a Remedial Investigation (RI) and Feasibility Study (FS) were completed in June 1991 (Warzyn, Inc. 1991a) and June 1992 (Warzyn, Inc. 1992), respectively. USEPA's Record of Decision (ROD) for the Site was issued in September, 1992 (USEPA 1992a). A Baseline Human Health Risk Assessment (BRA) was prepared by Warzyn Inc. (1991b) as part of the RI/FS, and reportedly served as the basis for the development of remediation levels included by USEPA in the ROD. A unilateral Administrative Order for Remedial Design and Remedial Action (RD/RA) was signed by USEPA Region 5 in September 1994 (USEPA 1994a). Activities at the Site since the ROD was issued include installing a perimeter ground water containment system (PGCS); installing a barrier wall and extraction system (BWES); collecting of additional characterization data; conducting of soil treatability studies; and placing an additional one-foot clay cap over the Off-Site Containment Area.

Although the BRA was conducted during the RI/FS, EPA believes that it is reasonable to revise it due to several factors. In the six years since the RI/FS was completed, a substantial amount of new data have been collected at the Site, and significant advances have been made in the field of risk assessment. In addition, it is reasonable to assume that future land use at the Site will remain industrial, in contrast to the conservative assumption made in the original

BRA that residential development may occur on the Site in the future. The purpose of this revised baseline risk assessment is to evaluate potential risk to human health based on consideration of all currently available Site data, currently accepted risk assessment methodologies, input assumptions consistent with Site conditions, and relevant regulatory guidance. This volume of the revised baseline risk assessment (Volume I) evaluates potential risk under current and reasonably anticipated future conditions at and surrounding the Site, in the absence of corrective measures and institutional controls. The impact of the remedial measures completed at the Site on the revised baseline human health risk estimates will be evaluated in Volume II of this report.

The revised baseline human health risk assessment presented herein is consistent with USEPA policies and guidance on risk assessment. The procedures for evaluating the available Site characterization data for usability in the risk assessment and for identifying constituents for quantitative evaluation also follow USEPA guidance. The procedures and results of the data evaluation and constituent identification are presented in Section 2.

Section 3 presents the detailed conceptual Site model and the approaches used to assess exposures to the constituents identified in Section 2. It presents (1) a description of the current and reasonably anticipated future exposure setting on and surrounding the Site; (2) hypothetically exposed populations consistent with current and reasonably anticipated conditions; (3) hypothetical pathways for on-Site and off-Site exposures; (4) estimates of constituent concentrations in each environmental medium at potential points of exposure; and (5) estimates of constituent intake for each potential exposure pathway.

Section 4 presents the toxicity values that are used to evaluate potential cancer risk and chronic (i.e., long-term) noncancer effects associated with the hypothetical exposures estimated in Section 3. It presents the sources of the toxicity values for the constituents identified in Section 2, as well as methods for evaluating constituents lacking USEPA-derived toxicity values.

Section 5 combines the results of the exposure assessment and toxicity assessment to estimate potential cumulative cancer risk and noncancer effects for each of the hypothetical exposure pathways identified in Section 3. Section 5 also includes qualitative and quantitative analyses of uncertainties for key aspects of the baseline risk assessment.

Section 6 lists the references cited in this report. The references cited in the Appendices to this volume are listed in Section 6 as well. All tables and figures are presented at the end of the text. Additional information supporting the revised baseline risk assessment is provided in three Appendices to this volume. Appendix A presents a detailed evaluation of future land use

at the Site. Appendix B provides details regarding the calculation of constituent concentrations in air at and near the Site. Appendix C provides the calculations of potential cancer risks and noncancer effects.

2.0 EVALUATION OF SITE CHARACTERIZATION DATA

The analytical data collected to characterize soil, ground water, sediment, and surface water at and surrounding the Site are evaluated in this section to identify the constituents appropriate for quantitative human health risk assessment. The range of constituent concentrations in various environmental media are also presented.

Characterization data considered in the revised baseline risk assessment are discussed in the following reports prepared by Montgomery Watson (formerly Warzyn, Inc.):

- Remedial Investigation Report. June 1991 (Warzyn, Inc., 1991a);
- Supplemental Soil Sampling Investigation. August 1993 (Warzyn, Inc., 1993);
- Pre-Design Work Plan. August 1995 (Montgomery Watson 1995);
- Dewater/Barrier Wall Alignment Investigation Report. March 1996 (Montgomery Watson 1996a);
- Wetland Technical Memorandum (Phase I). July 1996 (Montgomery Watson 1996b);
- Upper Aquifer Investigation Technical Memorandum (Phase I). March 1996 (Montgomery Watson 1996c);
- 1996 Groundwater Sampling Results Report. January 1997 (Montgomery Watson 1997a);
- Wetland Technical Memorandum (Phase II). February 1997 (Montgomery Watson 1997b);
- Groundwater Monitoring Report. March 1997 (Montgomery Watson 1997c);
- Upper Aquifer Investigation Technical Memorandum (Phase II). July 1997 (Montgomery Watson 1997d);
- Lower Aquifer Investigation Technical Memorandum. July 1997 (Montgomery Watson 1997e);
- June 1997 Groundwater Sampling Results Report (Montgomery Watson 1997f);
- September 1997 Groundwater Sampling Results Report (Montgomery Watson 1998a); and
- December 1997 Groundwater Sampling Results Report (Montgomery Watson 1998b).

Data from these investigations were compiled and provided in electronic format by Montgomery Watson for use in the revised risk assessment. The following additional

characterization data collected by Black & Veatch Special Projects Corp. (on behalf of USEPA), have also been included in the revised risk assessment:

- Fire Pond Soil Analytical Results. January 1997 (Black & Veatch 1997a);
- Results of the December 1996 Outfall Surface Water Sample. February 1997 (Black & Veatch 1997b);
- Analytical Data Comparison of the March 1997 Ground Water Sampling Results. July 1997 (Black & Veatch 1997c); and
- Results of the April 1997 Driveway Surface Water Sample. August 1997 (Black & Veatch 1997d).
- Results of the April 1997 Ground Water Sample from ATMW-4D (Black & Veatch 1997d).

Supplemental soil and sediment sampling was conducted in July and September 1997. Data from these analyses have also been considered in the assessment, including:

- Soil and waste samples collected during the Materials Handling and Treatability Study (Focus Environmental 1997);
- Surface soil samples collected by Montgomery Watson at the ACS facility (Montgomery Watson 1997g);
- Sediment samples collected by USEPA west of the Site (Black Veatch 1997e); and
- Surface soil samples collected by USEPA east of the Site (Black Veatch 1997e).

In the supplemental sampling, sediments were analyzed for semivolatile organics and pesticides/PCBs, and all other samples were analyzed for volatile organics, semivolatile organics, pesticides/PCBs, and inorganics (including metals).

Tables 2-1 through 2-4 list the samples collected in soil, sediment, ground water and surface water from the ACS Site and surrounding areas. Samples are identified by location, sample identification code (Sample ID), and date of collection, and are grouped by Site Area, as described in Section 3.2, and by depth, where applicable.

Section 2.1 describes the procedures used in evaluating the usability of the validated data and the basis for selecting constituents for the quantitative risk assessment. Section 2.2 summarizes the constituents that are included in the exposure assessment presented in Section 3 and the toxicity assessment presented in Section 4.

2.1 Data Evaluation

The evaluation of the analytical data to identify constituents appropriate for quantitative risk assessment follows USEPA's *Guidance for Data Usability in Risk Assessment* (USEPA 1992b) and *Risk Assessment Guidance for Superfund* (USEPA 1989). Considerations pertinent to the evaluation of the data include the following:

- **Qualified Data**
  Data that were qualified as estimated during data validation (i.e., J-qualified data) are included for evaluation. Data that were qualified as rejected during data validation (i.e., R-qualified data) are eliminated. Measured concentrations that were qualified as not detected during data validation (i.e., U-qualified) due to contamination in associated quality control blanks (e.g., analytical method blanks) are considered not detected to avoid false positive determinations.

- **Field Duplicate Samples**
  Data in duplicate samples are averaged to obtain a representative datum for the sample location. When only one datum in a duplicate pair had a detected concentration, the detected concentration is averaged with the reported sample quantization limit (SQL) for the sample in which the analyte was not detected, and the result is considered a detected concentration to reduce the potential for false negative determinations.

- **Constituents Not Detected in Any Sample**
  The analytical data for each environmental medium are reviewed for constituents that were not detected in any sample in the medium, during any sampling event. Constituents not detected in any sample in a medium are excluded from the quantitative risk assessment of that medium.

- **Infrequently Detected Constituents**
  The analytical data for each environmental medium are reviewed for constituents that were detected infrequently in the medium. Constituents detected in 5% or fewer of the ground water samples from a given aquifer and exposure area (as defined in Section 3) are excluded from the quantitative risk assessment of ground water for that aquifer and area. Constituents detected in 5% or fewer of the soil, sediment, or surface water samples, respectively, from a given exposure area (as defined in

Section 3) are excluded from the quantitative risk assessment of that medium for that area.

- **Major Earth Elements and Essential Nutrients**
  Naturally occurring elements that comprise the major elemental content of the earth's crust and that are essential nutrients or typical components in normal diet are excluded from the quantitative risk assessment. These elements include:
  - Aluminum
  - Calcium
  - Iron
  - Magnesium
  - Potassium
  - Sodium

  Each of these elements exists naturally in soil at concentrations of several percent without posing significant public health concerns. USEPA has not established toxicity values for these elements.

- **Tentatively Identified Compounds (TICs)**
  Both the identity and concentrations of TICs are highly uncertain (USEPA 1992c). Due to the relatively large number of TICs identified in Site media (i.e., over 600), those TICs for which USEPA has developed toxicity criteria are included in the risk assessment, unless the tentative identity matches a compound for which samples were specifically analyzed (i.e., TCL/TAL constituents). In those cases, the concentration identified by the specific analysis for that compound is evaluated instead. TICs for which no toxicity criteria are available are discussed in Section 5.3.2.

2.2 Summary of Constituents Included in Quantitative Assessment

The constituents in soil, sediment, ground water, and surface water that are evaluated in the revised quantitative risk assessment are summarized in Tables 2-5, 2-6, 2-7, and 2-8, respectively. The summary tables include the following summary information for each constituent:

- Number of valid sample results;
- Number of detections;
- Minimum detected concentration;
- Arithmetic mean concentration;
- 95% Upper Confidence Limit (UCL) on the arithmetic mean concentration;
- Maximum detected concentration;
- Identity and date of sample in which the maximum concentration was detected; and
- Concentration (UCL or maximum) selected for use in risk calculations.

Tables 2-5 and 2-6 present the summary data by Site Area and depth for constituents detected in soil and sediment, respectively. Table 2-7 presents the summary data by Site Area and aquifer for constituents detected in ground water. Table 2-8 presents the summary data by Site Area for constituents detected in surface water. The Site Areas are described in Section 3.2, and the summary statistics and basis for exposure concentration selection are described in Section 3.3.

3.0 EXPOSURE ASSESSMENT

The purpose of the exposure assessment is to evaluate the nature and magnitude of potential exposures to constituents detected at the Site during the RI and subsequent Site characterization studies. The exposure assessment consists of the following components:

- Characterization of Exposure Setting (Section 3.1);
- Identification of Potential Exposure Routes and Pathways (Section 3.2);
- Exposure Concentrations (Section 3.3); and
- Estimation of Media Intake (Section 3.4).

The results of the exposure assessment are combined with the results of the toxicity assessment (Section 4) to characterize potential risk (Section 5).

3.1 Characterization of Exposure Setting

In the baseline risk assessment, the exposure setting is evaluated with respect to the general characteristics of the Site and Site surroundings, and potentially exposed populations, under both current and reasonably anticipated future land use conditions. Section 3.1.1 provides a general description of the current exposure setting at and around the Site. Section 3.1.2 describes the exposure setting under a reasonably anticipated future land use scenario. Hypothetically exposed populations under current and future conditions are summarized in Section 3.1.3.

3.1.1 Current Exposure Setting

The Site is located at 420 South Colfax Avenue, in an area of the Town of Griffith that historically has been developed primarily for industrial and commercial uses. The part of Griffith in which the Site is located is referred to as the "eastern portion of the Town" in the Master Plan for the Town of Griffith, Indiana (i.e., including all lands east of Broad Street between the Penn Central and C & E Railroads). The entire "eastern portion of the Town," including the Site, is zoned for industrial use. Maps showing the location and zoning of the Site are provided in Figures 3-1 and 3-2, respectively. For the purposes of the baseline risk assessment, on-Site and off-Site areas have been divided into eight Exposure Areas, as shown in Figure 3-3 and described in greater detail in Section 3.2.

ACS, which owns approximately 26 acres of the Site, and leases another four acres from CSX, began operations at the Site as a solvent recovery facility in May 1955. Through the nearly 42 years of continuous operation, ACS has modernized, modified, and expanded operations at the Site. For example, in the 1960s ACS added facilities to manufacture small batches of specialty chemicals, and in the 1970s built an epoxidation plant to produce a plasticizer. ACS currently employs over 40 full-time workers and intends to continue specialty chemical manufacturing and epoxidation operations at the Site. As a result, ACS has established a strong and consistent presence in the Town of Griffith.

The ACS property is bisected by the Chesapeake & Ohio (C & O) Railroad (see Figure 3-3, Areas 1 and 2). The active facility is located in Area 1, north of the railroad, and reportedly contains two areas where drums were buried: the On-Site Containment Area and the Still Bottoms/Treatment Lagoon Area. In the On-Site Containment Area, an estimated 400 to 2,500 drums containing sludge and semi-solids of unknown types are located approximately one to five feet below ground surface (Warzyn, Inc. 1991a; Focus Environmental 1997; GeoPhysical 1998). The Still Bottoms Pond and Treatment Lagoon #1 were located in the mid-southern portion of Area 1, and were filled in with crushed drums partially full of sludge materials in the early 1970s (Warzyn, Inc. 1991a). Currently, the Still Bottoms/Treatment Lagoon Area is covered by crushed gravel, aboveground holding tanks, and a parking lot. The surface throughout Area 1, including the On-Site Containment Area and Still Bottom Treatment Lagoon Area, is generally devoid of vegetation and covered by approximately six inches of aggregate and/or coarse sand and gravel. ACS provides regular maintenance of this cover.

The undeveloped portion of the ACS property (Area 2 on Figure 3-3) is located south of the C & O Railroad. This area includes the "Off-Site Containment Area," which was used for waste disposal between 1958 and 1975, when it was bermed and capped with clay (Warzyn, Inc. 1991a). A variety of wastes are reportedly present below the cover, including general refuse, still bottoms, ash from the on-Site incinerator, and the remains of an estimated 25,000 to 55,000 drums (Focus Environmental 1997). According to ACS, Inc., most of the drums in Area 2 are not intact, having been punctured or crushed prior to disposal (Warzyn, Inc. 1992, Montgomery Watson 1995). Observations in test pits (Focus 1997) confirm this. Currently, Area 2 is generally covered by a one-foot deep clay cover and temporary spoils piles generated during remediation activities at the Site. The spoils piles have PVC coverings.

In addition to the ACS property, the Site includes two acres that also have a history of industrial use. These two acres are located south of the ACS property and adjacent to the

Griffith Municipal Landfill (Area 3 on Figure 3-3). Kapica Drum, Inc. began drum reconditioning operations on this portion of the Site in 1951. Pazmey Corporation bought the property in February 1980 and continued drum reconditioning operations until March 1987, when Darija Djurovic purchased the property for automobile storage and repair.

The Site also includes four acres that ACS leases from CSX, located to the north of the active facility (Area 4B on Figure 3-3). Area 4B is currently undeveloped and heavily vegetated. It is bordered to the west and north by wetlands.

Land surrounding the Site is currently zoned for industrial use, but historically has been used for a combination of industrial, residential, and recreational purposes. In the following paragraphs, current land uses in the vicinity of the Site are described in a clockwise fashion, beginning at the northeast corner. The area surrounding the Site and the roads and railroads immediately adjacent to the Site are labeled in Figure 3-3. Zoning in the area is indicated in Figure 3-2 (where I-1 and I-2 indicate areas targeted for industrial use, while R-1 and R-2 indicate areas zoned for residential use).

Located northeast of the Site, beyond the intersection of Colfax Avenue and the Grand Trunk Railroad right-of-way, are the Oak Ridge Prairie County Park and the Griffith Airport. Immediately east of the Site and north of the C & O Railroad right-of-way, the land is undeveloped and zoned general industrial. To the east of Colfax Avenue and south of the C & O Railroad right-of-way are several small businesses. To the east of Colfax Avenue and along Reder Road, several small businesses and several single family residences are present (this area is labeled Area 5A on Figure 3-3). South of the intersection of Reder Road and Colfax Avenue, on Arbogast Avenue, are a private residence and a small industrial building. The area was zoned for industrial use after the residences were built, with the intention that any future development in the area would be industrial. The pre-existing residences in the industrial zone are considered conforming uses, and a zoning ordinance cannot force changes in these existing uses. However, new residences would be considered non-conforming and the ordinance can prevent construction of a non-conforming use. In addition, if the pre-existing residential use is discontinued, the ordinance can also prevent it from being resumed (Sargent 1997).

To the west and southwest of the Site, south of the C & O Railroad right-of-way, are the Griffith Municipal Landfill and Town of Griffith Municipal Garage. Beyond the municipal landfill and west of the Chicago and Erie (C & E) Railroad right-of-way, are vacant land and a residential development (Area 6 on Figure 3-3). This area is zoned for residential use.

North of the C & O Railroad right-of-way to the west of the Site (Area 4A on Figure 3-3), and north of the Grand Trunk Railroad right-of-way (Area 5B on Figure 3-3)

the land is primarily vacant, and classified as wetlands. Further to the north, along Main Street, are small businesses and an industrial park.

3.1.2 Reasonably Anticipated Future Exposure Setting

Reasonably anticipated future exposure settings for evaluation in the baseline risk assessment have been developed based on USEPA's "Land Use in the CERCLA Remedy Selection Process" (USEPA 1995a). This guidance presents a framework and specific factors to be used in determining the reasonably anticipated land use for the purpose of estimating potential future risks. Based on USEPA guidance (1995a), a comprehensive review of information pertinent to future land use patterns on and around the Site has been conducted, as presented in Appendix A.

Site-specific information consulted in developing the reasonably anticipated future exposure setting at the ACS Site included the following:

- Master Plan for Future Land Use, Griffith, Indiana;
- Official Zoning Map for Town of Griffith;
- Personal communications with the Building Commissioner of Griffith;
- Information from the Northwestern Indiana Regional Planning Commission (NIRPC)[1];
- U.S. Census data;
- U.S. topographic, wetland inventory, and flood plain maps;
- Declarations of Land Use Restriction of Real Property; and
- Information from the Historic Landmarks Foundation of Indiana.

The Master Plan for Griffith (Vilizan-Leman 1975) is used by the Town government to guide future development in Griffith.

A comprehensive review of information pertinent to future land use patterns surrounding the Site confirms that the assumption of continued industrial land use at the Site is appropriate (see Appendix A). Given the history of industrial land use at the Site, ACS's plans for continuing operations, the Town of Griffith's plans for continuing industrial/commercial development surrounding the Site, and the unsuitability of the Site's location for potential residential development, the probability is small that the location of the Site would support residential use in the future. The limited population growth expected in the future and Griffith's plans to direct the potential growth to parts of the city

[1] NIRPC is a multi-purpose, area-wide planning agency representing local governments within Lake, Porter, and LaPorte Counties; at least two-thirds of the Commission must be local officials.

away from the Site further underscore the small probability of future residential land use at the Site.

Thus, the future exposure setting for all on-Site areas is assumed to be industrial/ commercial. The future exposure setting for all off-Site areas is assumed to also include residential use, given the existence of homes in the industrially zoned areas adjacent to the Site.

3.1.3 Summary of Potentially Exposed Populations

Based on the exposure settings described in Sections 3.1.1 and 3.1.2, the baseline risk assessment evaluates the following land uses, under both current and reasonably anticipated scenarios:

- Industrial land use at the Site; and
- Industrial/commercial, residential, and recreational land uses surrounding the Site.

The hypothetical populations considered in the risk assessment under these land use scenarios are:

- **On-Site Workers - Routine Operations**
  The majority of workers at the ACS facility are employed in manufacturing functions which take place within manufacturing buildings. These workers rarely, if ever, perform job functions that bring them into direct contact with soil or ground water at the Site. Routine incidental contact with outdoor areas at the facility may occur during breaks and walks to and from parking lots. The extent of such outdoor activities is expected to vary seasonally, and to differ from area to area at the Site.

- **On-Site Workers - Utility Maintenance Excavation**
  A small number of the facility's workers may be involved in occasional outdoor maintenance activities (e.g., replacing the aggregate covering the Site), or occasional excavation activities (e.g., to maintain underground utility lines at the Site) in addition to routine manufacturing work. The extent of contact during excavation activities is expected to vary seasonally, and to differ from area to area at the Site.

- **On-Site Workers - Construction**
  Several areas of the Site are not developed and may require construction of buildings prior to industrial use. Such construction could involve more extensive excavation than for utility line maintenance. Contact during construction activities would be limited to the building season (i.e., nine months of the year).

- **On-Site Trespassers**
  Public access to portions of the Site is controlled by perimeter fencing that is inspected monthly. In addition, the presence of the active ACS facility discourages unauthorized entry to the Site. Several outdoor recreational areas are located nearby, further reducing the potential for trespassing at the Site. Trespassing has been observed in the unfenced portions of the Site, but not in the fenced portions.

- **Off-Site Residents**
  The nearest residences to the Site are located east of the Site along Reder Road and Colfax Avenue. Additional residences are located beyond the Griffith Municipal Landfill and C&E railroad right-of-way, west and southwest of the Site.

- **Off-Site Workers**
  Various commercial and industrial properties are located to the north, east, and south of the Site.

3.2 Identification of Potential Human Exposure Routes and Pathways

The potential routes of human exposure evaluated in the baseline risk assessment are ingestion, inhalation, and dermal contact. In some cases, chemicals may migrate through an "exposure pathway" from a source to a location where exposure through one or more of these routes could hypothetically occur.

For an exposure pathway to be complete, the following elements are required: (1) a source and a mechanism of constituent release; (2) a transport medium; (3) a point of potential human contact with the affected medium (i.e., an exposure area); and (4) an exposure route at the point of contact. Based on a consideration of exposure routes and complete exposure pathways, the following eight exposure areas have been evaluated in this risk assessment:

On-Site Areas

- Area 1: On-Site Containment and Still Bottoms/Treatment Lagoon Area
- Area 2: Off-Site Containment Area
- Area 3: Kapica-Pazmey Area
- Area 4A: Wetlands Area
- Area 4B: North Area

Off-Site Areas

- Area 5A: Off-Site - East
- Area 5B: Off-Site - North
- Area 6: Off-Site - West

These areas represent potential points of contact with affected media, based on the current and reasonably expected future exposure settings at and around the ACS Site. Each exposure area is shown in Figure 3-3.

Sections 3.2.1 through 3.2.8 below describe the exposure areas included in the baseline risk assessment, and the potential exposure routes and pathways that are quantitatively evaluated for each area. Hypothetical exposures quantified in the exposure assessment are identified for each exposure area in Table 3-1.

3.2.1 Area 1: On-Site Containment and Still Bottoms/Treatment Lagoon Area

Area 1 is the active manufacturing area of the ACS property, and consists of approximately 15 acres located north of the C & O Railroad. It is surrounded by a fence and includes the On-Site Containment Area and the Still Bottoms/Treatment Lagoon Area. Current and potential future receptors evaluated in the risk assessment for Area 1 are: (1) routine workers; and (2) utility maintenance workers. Trespassing has not been observed in Area 1 under current conditions, but trespassers are assumed to be an additional potential future receptor in this area. Due to physical restraints posed by the shallow ground water table in this area, any future construction would not involve extensive excavation, so a construction worker scenario is not evaluated for Area 1.

Following closure of the disposal areas at the ACS facility (i.e., the On-Site Containment Area and the Still Bottoms/Treatment Lagoon Area) in the 1970s, wastes were covered with at least a foot of clean fill material. In addition, ACS currently maintains a six-inch aggregate cover over most of the manufacturing area. This cover is added to and regraded periodically, as needed. Although current and future on-facility workers may contact the surface material during routine activities in Area 1, the aggregate

and clean fill cover is expected to eliminate any current direct contact with subsurface material. However, for future use, the risk assessment assumes that the aggregate cover may not be maintained and exposure of on-facility workers to subsurface soil could occur (e.g., as a result of excavations that could bring subsurface soils to the surface). Because the future composition of surface soil cannot be predicted with certainty, and may be some combination of what is currently considered surface and subsurface, the risk assessment includes two approaches for estimating future risks to on-facility workers and trespassers based on: (1) surface soil concentrations only (0 - 2 feet) (Approach 1); and (2) subsurface soil concentrations only (2 - 10 feet) (Approach 2).

It has been assumed that both current and future exposure of on-Site and off-Site receptors could potentially occur via inhalation of vapors emitted from undisturbed soil above the ground water table in Area 1. Vapor emissions from ground water would be significantly less than emissions from soil above the ground water table. Potential off-Site inhalation exposures are evaluated for off-Site residents nearest to Area 1, and thus are considered conservative, screening-level estimates.

Exposures could also hypothetically occur in limited portions of Area 1 if excavation through the aggregate and clean fill is necessary to maintain underground utilities. To conservatively estimate hypothetical exposures, it is assumed that excavations could occur anywhere in Area 1. Due to the shallow depth to ground water in Area 1 (approximately two to eight feet below ground surface) (Warzyn, Inc. 1991a), exposure to both subsurface soil and ground water in an excavation pit may occur during maintenance of utility lines, which are typically located three to seven feet below ground surface. Under current conditions, contact with these media is not expected because all workers performing excavations at the ACS Site are required to wear personal protective equipment as specified in the *ACS Site Safety and Health Plan* (ACS 1997). The soil excavation procedures state that, in addition to clothing that prevents direct contact with soil or ground water, respirators are required in certain circumstances. Thus, inhalation, ingestion, and dermal contact exposures of excavation workers are not expected under current conditions.

As a conservative measure, the baseline risk assessment evaluates potential future exposures by underground-utility maintenance workers, assuming that protective equipment may not be worn during excavation activities. In such cases, the primary potential routes of exposure for excavation workers would be incidental ingestion of soil, dermal contact with soil, dermal contact with ground water entering into an excavation pit, and inhalation of vapor and particulates from soil and exposed ground water.

Incidental ingestion of ground water is judged to be relatively insignificant and is not evaluated.

Since Area 1 is currently used by ACS for Manufacturing operations, USEPA has requested an evaluation of the potential adverse consequences of truck traffic over the drum landfill. Extremely limited data are available regarding specific constituent concentrations in the drummed materials, preventing a quantitative analysis of risks posed by trucks driving over the drum landfill. However, to address USEPA's request, a discussion of the potential impact of truck traffic over the drums in Area 1 is presented in Section 5.3.

Off-Site residents could also conceivably be exposed to vapor emissions from soil and ground water during periods of excavation in Area 1, under both current and future conditions. These potential inhalation exposures are evaluated for the off-Site residents nearest to Area 1, and are thus considered conservative, screening level estimates.

In the past, ACS has used lower aquifer production wells for process water in a closed system. Currently, all production wells are sealed and the ACS facility relies on municipal water only. In addition, ACS has placed a deed restriction on the property to restrict use of ground water for drinking water and irrigation. Thus, exposure to ground water in Area 1 is unlikely to occur. However, in the event that production wells are reinstalled in the future to supplement the municipal water (e.g., for irrigation purposes if Area 1 is landscaped in the future, or for showering), it is assumed that workers could conceivably be exposed to lower aquifer ground water in the future.

3.2.2 Area 2: Off-Site Containment Area

Area 2 is the Off-Site Containment Area. It consists of approximately 11 acres, and is bounded to the north by the C&O Railroad, to the west by the Griffith Municipal Landfill, to the south by the former Kapica-Pazmey property, and to the east by Colfax Road. Area 2 is owned by ACS and is fenced, but has not been developed. No trespassing has been observed in Area 2 and the fence is checked monthly. Thus, under current land use, the only potential receptors are in other areas who may inhale emissions from Area 2. Although ACS has no plans to sell this property, or to develop it for any purpose, it is conceivable that Area 2 could be developed for industrial use in the future. Should this area be developed for industrial purposes, potentially exposed individuals in Area 2 could hypothetically include routine workers, utility maintenance workers, construction workers, and trespassers.

The portion of Area 2 where waste disposal reportedly occurred was covered by more than a foot of clay after the disposal activities ceased. If intact, such a clay cap would

eliminate direct contact with subsurface materials and reduce the magnitude of vapor emissions. Although the initial clay cap was disturbed in several locations during Site characterization and remediation activities, a new clay cap (one-foot deep) has been placed over Area 2.

Under current conditions, it is assumed that exposures of off-Site residents could occur via inhalation of vapors from undisturbed subsurface soil in Area 2. Potential exposures of off-Site residents are evaluated by estimating vapor concentrations in air at the off-Site residences nearest to Area 2, and thus are considered conservative, screening-level estimates.

If Area 2 were to be developed for industrial purposes, exposures of future routine workers could hypothetically occur via direct contact with surface soils and inhalation of vapor emissions from surface and subsurface soil. The future composition of surface soil cannot be predicted with certainty, and may be some combination of what is currently considered surface and subsurface. Due to ongoing remediation investigations and activities, the current surface concentrations have not been characterized. Therefore, the risk assessment includes an estimate of potential future risks to on-facility workers based on subsurface soil concentrations only.

In addition, future excavation activities to maintain underground utilities could also result in exposures to subsurface soil in Area 2 if personal protective equipment were not required. To quantify potential exposures during underground-utility maintenance, it is assumed that excavations could occur to a depth of less than 10 feet anywhere in Area 2. The primary potential routes of exposure for utility maintenance workers in Area 2 are ingestion of soil, dermal contact with soil, and inhalation of vapor and particulates from exposed soil. Since the water table is somewhat deeper in Area 2 than in Area 1 (generally 10 to 16 feet below ground surface, except at locations immediately adjacent to Area 1), contact with ground water in an excavation pit is not likely to occur and is not evaluated.

If Area 2 were to be developed for industrial purposes, building construction involving excavation of soils may also occur. Exposures of future construction workers could hypothetically occur via incidental ingestion of and dermal contact with soil and inhalation of vapor and particulate emissions from soil. Two construction scenarios are evaluated: (1) the construction of a slab-on-grade building, such as a warehouse, assuming footings excavated to a depth of four feet; and (2) construction of a building requiring excavations to a depth of up to 10 feet.

Off-Site residents could also be exposed via inhalation of vapor and particulate emissions from soil during periods of excavation for utility maintenance or construction in

Area 2, under future conditions. These potential exposures are evaluated for off-Site residences nearest to Area 2, and thus are considered conservative, screening-level estimates.

As mentioned previously, municipal water is readily available to the Site. Thus, future industrial development of Area 2 is likely to include connection to the municipal supply rather than construction of wells, and exposure to on-Site ground water is unlikely to occur. However, in the event that on-Site production wells are established in the future to supplement the municipal water (e.g., for irrigation purposes or for showering), it is assumed that workers could conceivably be exposed to lower aquifer ground water in the future.

3.2.3 Area 3: Kapica-Pazmey Area

The 2-acre Kapica-Pazmey Area is located to the south of the Off-Site Containment Area and is bounded to the west and south by the Griffith Municipal Landfill. As with Area 2, this area is currently fenced and undeveloped, but could conceivably be developed for industrial purposes in the future. Thus, for Area 3, the only potential current receptors are receptors in other areas who may inhale emissions from Area 3.

Potential exposures of off-Site residents may occur via inhalation of vapor and particulate emissions from soil in this area. Potential exposures of off-Site residents are evaluated at the residences nearest to Area 3, and thus are considered conservative, screening-level estimates.

If Area 3 is developed for industrial purposes, exposures of future routine workers could occur via ingestion and dermal contact with surface soil, and inhalation of vapor and particulate emissions from soil. Because the future composition of surface soil cannot be predicted with certainty, and may be some combination of what is currently considered surface and subsurface, the risk assessment includes two approaches for estimating future risks to on-facility workers and trespassers based on: (1) surface soil concentrations only (0 - 2 feet) (Approach 1); and (2) subsurface soil concentrations only (2 - 10 feet) (Approach 2).

In addition, future excavation activities to maintain underground utilities could result in exposures to subsurface soil in Area 3 if protective equipment were not required. To quantify potential exposures during underground-utility maintenance, it is assumed that excavations could occur to a depth of 10 feet anywhere in Area 3. The primary potential routes of exposure for excavation workers are ingestion of soil, dermal contact with soil, and inhalation of vapor and particulates from exposed soil. Due to the depth of the water

table in Area 3 (approximately 10 to 16 feet below ground surface), contact with ground water in an excavation pit is not expected to occur and thus is not evaluated.

If Area 3 were to be developed for industrial purposes, building construction involving excavation of soils may also occur. Exposures of future construction workers could hypothetically occur via incidental ingestion of and dermal contact with soil and inhalation of vapor and particulate emissions from soil. Two construction scenarios are evaluated: (1) the construction of a slab-on-grade building, such as a warehouse, assuming footings excavated to a depth of four feet; and (2) construction of a building requiring excavations to a depth of up to 10 feet.

Off-Site residents may also be exposed to vapor and particulate emissions from soil during periods of excavation for utility maintenance or construction in Area 3, under future conditions. These potential inhalation exposures are evaluated for off-Site residents nearest to Area 3, and thus are considered conservative, screening-level estimates.

As mentioned previously, municipal water is readily available to the Site. Thus, future industrial development of Area 3 is likely to include connection to the municipal supply rather than construction of wells, and exposure to on-Site ground water is unlikely to occur. However, in the event that on-Site production wells are established in the future to supplement the municipal water (e.g., for irrigation purposes or for showering), it is assumed that workers could conceivably be exposed to lower aquifer ground water in the future.

3.2.4 Area 4A: Wetlands Area

Area 4A is located between the Grand Trunk Railroad and the C&O Railroad right-of-ways, west of the fence line of Area 1. This approximately 25-acre area is primarily wetlands and is unlikely to be developed in any way due to Federal Clean Water Act prohibitions on wetland development (42 U.S.C. 1311 and 1344).

Under current and future conditions, potential exposure of trespassers may occur via ingestion and dermal contact with soil/sediment and surface water, and via inhalation of vapor emitted from surface water in Area 4A. Potential exposures of nearby residents and workers may also occur via inhalation of vapor from surface water in this Area. Potential inhalation exposures of off-Site residents are evaluated by estimating exposure at the off-Site residences nearest to Area 4A, and thus are considered conservative, screening-level estimates.

3.2.5 Area 4B: North Area

Area 4B consists of six acres located north of Area 1 and south of the Grand Trunk Railroad right-of-way, and is heavily vegetated and undeveloped. This area is evaluated separately from Area 4A because it is not classified as wetlands, and thus could potentially be developed for industrial purposes in the future. Under current land use, trespassers are the only potential receptors in Area 4B. Should this area be developed for industrial purposes, future receptors could include routine workers, excavation workers for utility maintenance, and trespassers. Due to physical restraints posed by the shallow ground water table in this area, any future construction would not involve extensive excavation, so a construction worker scenario is not evaluated for Area 4B.

Under current and future conditions, potential exposure of trespassers may occur via ingestion and dermal contact with soil/sediment and surface water, and via inhalation of vapor emitted from ground water in Area 4B. Potential exposures of nearby residents and workers may also occur via inhalation of vapor from this area. Potential exposures of off-Site residents are evaluated by estimating exposure at the off-Site residences nearest to Area 4B, and thus are considered conservative, screening-level estimates.

Should this area be developed for industrial purposes in the future, potential exposure of workers may occur via ingestion and dermal contact with soil/sediment and surface water, and via inhalation of vapor emitted from ground water in Area 4B. No constituents have been detected in subsurface soil from this Area, so the evaluation of potential future exposures is conservatively based on surface soil concentrations only.

As a conservative measure, the baseline risk assessment evaluates potential future exposures by underground-utility maintenance workers, assuming that protective equipment may not be worn during excavation activities. In such cases, the primary potential routes of exposure for excavation workers would be incidental ingestion of soil, dermal contact with soil, dermal contact with ground water entering into an excavation pit, and inhalation of vapor and particulates from soil and exposed ground water. Ingestion of ground water is judged to be relatively insignificant and is not evaluated.

As mentioned previously, municipal water is readily available to the Site. Thus, future industrial development of Area 4B is likely to include connection to the municipal supply rather than construction of wells, and exposure to on-Site ground water is unlikely to occur. However, in the event that on-Site production wells are established in the future to supplement the municipal water (e.g., for irrigation purposes or for showering), it is assumed that workers could conceivably be exposed to lower aquifer ground water in the future.

3.2.6 Area 5A: Off-Site - East

Area 5A consists of off-Site properties to the east and southeast of the Site that are zoned for industrial use only, but include existing residential development. Current and future potential receptors in Area 5A include both off-Site residents and off-Site workers. As off-Site worker exposures are expected to be lower than potential residential exposures in Area 5A, only residential exposures are quantified in the risk assessment. Risks are calculated for both child and adult residents.

As discussed in Sections 3.2.1 through 3.2.5, residents could be exposed via inhalation of vapor and particulates from on-Site areas, both during routine operations and during excavation in those areas. Site-related constituents may also migrate to off-Site soils via deposition of airborne particulates or via ground water discharge to the surface. Residences near the Site are not located at ground water discharge points and deposition of particulate emissions from the Site is not expected to be significant. However, as a conservative measure, the baseline risk assessment evaluates potential residential exposure to off-Site soil based on the results of supplemental off-Site samples collected by USEPA in September 1997.

Most residents of Griffith rely on the municipal water supply system for drinking water (Warzyn, Inc. 1991b). Conditions at the Site do not and cannot affect the quality of the municipal water supply, as this water is drawn from Lake Michigan (NIPSC 1992). However, given available information regarding ground water use adjacent to the Site, off-Site residential exposures to constituents in ground water in Area 5A can potentially occur during potable use through ingestion, dermal contact and inhalation. Potential exposures of off-Site adult residents to constituents in ground water during outdoor use are via incidental ingestion and dermal contact during gardening, lawn care, and other nonpotable uses. Off-Site child residents could hypothetically be exposed to constituents in ground water used to fill an outdoor swimming/wading pool.

Two ground water aquifers are present in the vicinity of the Site, with a continuous clay layer separating the two systems (Warzyn, Inc. 1991a). In the Site monitoring wells, the average depth to the top of the clay confining layer is about 15 to 20 feet below ground surface (bgs). A thorough survey of private wells in the area performed by Warzyn (now Montgomery Watson) during the Remedial Investigation (Warzyn, 1991) indicated that all private wells in the vicinity of the Site (on Reder Rd., Colfax Ave., and Arbogast St.) are screened in the lower aquifer, at depths ranging from 45 to 65 feet below ground surface. Appendix L of the RI provides the private well logs of these and other wells in Griffith. The majority of the logs provide descriptions of the formations at the well location, and document the presence of the clay layer and that the well is screened below the clay layer. Well records were not available for two wells in Area 5A,

along Reder Road. However, constituent concentrations collected from these two private wells (and all of the other private wells) are significantly lower than concentrations measured in the upper aquifer in that area, and are similar to those measured in the lower aquifer. Thus, there is no evidence that any private wells are currently screened above the clay layer in Areas 5A or 5B, or are being influenced by ground water quality in the upper aquifer.

Indiana has not assigned any designation to the upper aquifer, or to other aquifers in the state. According to the ROD (USEPA 1992a), ground water in the upper and lower aquifers is considered Class II under U.S. EPA guidelines for ground water classification, and the water could therefore theoretically be used for drinking water. However, in the vicinity of the Site, the clay confining layer that divides the aquifers is too shallow for wells to be installed in the upper aquifer. The depth of the clay layer averages less than 20 feet below ground surface at and around the Site. Montgomery Watson has contacted several licensed drillers in the Griffith area. The drillers indicated that they would not install a shallow well (i.e., within about 30 feet of the ground surface) because of professional concerns about the following: (1) a property with its own water supply is likely to have a septic system that could contaminate such a shallow well, and (2) the yield of the well may not be adequate.

Furthermore, Indiana state regulations require that "a well must be cased to a depth of at least twenty-five (25) feet below the ground surface unless otherwise approved by the division" (310 IAC 16-4-1 Casing). As shown below, the depth to clay at off-Site monitoring well locations ranges from 11 to 32 feet bgs, with an average of 19 feet bgs in Area 5A and 13 feet bgs in Area 5B.

Depth to the Clay Confining Layer OffSite (Areas 5A and 5B)

Location	Area	Depth to Clay (ft)
MW-06	5A	32
MW-07	5A	20.5
MW-11	5B	20.3
MW-12	5A	20.2
MW-17	5A	NA
MW-18	5A	20
MW-19	5A	23
MW-20	5A	NA
MW-22	5A	20.5
MW-28	5A	27.5
MW-36	5A	15

Depth to the Clay Confining Layer OffSite (Areas 5A and 5B)		
Location	**Area**	**Depth to Clay (ft)**
MW-37	5B	14
MW-38	5B	11.5
MW-39	5B	11
MW-40	5B	13.5
MW-41	5A	13
MW-42	5A	14
MW-43	5A	18
MW-44	5A	11
MW-45	5A	11
MW-47	5A	13
MW-48	5B	11.5
MW-50	5A	29.5

Only three of the 23 monitoring wells indicated a depth to clay of greater than 25 feet bgs, all located toward the western edge of Area 5A, adjacent to the ACS Site. The deepest, 32 feet bgs at MW-06, is located just south of the Site and west of Colfax Ave. Crossing Colfax, going east, the clay layer rises toward the surface, so that within about 600 feet of MW-06 the depth to clay is only 20 feet bgs. Because depth to clay is so shallow, any new wells would need to extend through the clay into the lower aquifer, absent a divisional approval.

In addition to state law and the shallow depth of the clay layer, the background quality of water in the upper aquifer as compared to the lower aquifer supports a preference for well installation into the lower aquifer. According to Indiana's Department of Natural Resources "Water Resource Availability in the Lake Michigan Region, Indiana" (1994), much of the ground water in Indiana has a high iron and manganese content. The Federal government has established Secondary Maximum Contaminant Levels (SMCLs) for iron and manganese (0.3 mg/L and 0.05 mg/L, respectively), based on taste, odor, and color. The table below summarizes off-Site (i.e., Areas 5A and 5B combined) iron and manganese concentrations in the upper and lower aquifers. Upper aquifer average concentrations are based on data from wells outside the plumes (i.e., wells MW-6, MW-45, MW-48 are excluded). As shown, background concentrations in both aquifers are higher than SMCLs for iron and manganese, but the lower aquifer water is of better quality than the upper aquifer water.

Off-Site Iron and Manganese Concentrations in Ground Water			
Chemical	SMCL (mg/L)	Off-Site Upper Aquifer Conc. Outside the Plumes(mg/L) Average (Max)	Off-Site Lower Aquifer Conc. (mg/L) Average (Max)
Iron	0.3	7.7 (47.5)	3.7 (13.15)
Manganese	0.05	0.51(1.6)	0.11 (0.26)

Thus, due to state regulations, the shallow depth to the clay layer in the vicinity, and the better background quality of the lower aquifer, any new wells would be expected to extend through the clay into the lower aquifer. Therefore, the risk assessment uses concentrations in the lower aquifer to estimate future concentrations in residential wells. However, as a bounding scenario, the risk assessment also evaluates hypothetical risks from residential use of upper aquifer water in Section 5.3.

3.2.7 Area 5B: Off-Site North

Area 5B consists of off-Site properties to the north of the Site that are zoned for industrial use. The area immediately north of the Site in Area 5B is primarily vacant, and classified as wetlands. There are no residences in Area 5B within approximately half a mile of the Site, and the wetlands portion of Area 5B is unlikely to be developed in any way due to Federal Clean Water Act prohibitions on wetland development (42 U.S.C. 1311 and 1344). Future potential receptors in the non-wetlands portions of Area 5B are off-Site workers. Constituents have been detected only in upper aquifer water in a vacant portion of this area, so exposures are evaluated only for those future workers who may potentially contact upper aquifer water. The clay layer averages 13 feet in depth below ground surface in Area 5B, which precludes installation of a well in the upper aquifer. Thus, workers performing excavation for utility maintenance are the only receptors likely to contact upper aquifer water.

To conservatively estimate hypothetical exposures, it is assumed that excavations could occur anywhere in Area 5B. Due to the shallow depth to ground water in Area 5B, exposure to ground water in an excavation pit may occur during maintenance of utility lines, which are typically located three to seven feet below ground surface.

As a conservative measure, the baseline risk assessment evaluates potential future exposures by underground-utility maintenance workers, assuming that protective equipment may not be worn during excavation activities. In such cases, the primary

potential routes of exposure for excavation workers would be dermal contact with ground water entering into an excavation pit and inhalation of vapor from exposed ground water.

3.2.8 Area 6: Off-Site - West

Area 6 consists of off-Site properties to the west and southwest of the Site in an area that is zoned for residential use. Current and future potential receptors in Area 6 include both off-Site residents and off-Site workers. As off-Site worker exposures are expected to be lower than potential residential exposures in Area 6, only residential exposures are quantified in the risk assessment. Risks are calculated for both child and adult residents.

As discussed in Sections 3.2.1 through 3.2.5, residents could be exposed via inhalation of vapor and particulates from on-Site areas, both during routine operations and during excavation in those areas. Furthermore, surface water from Area 4A (i.e., the wetlands area) discharges to a low-lying area between the Chesapeake and Ohio railroad right-of-way and the Griffith Municipal landfill. Water intermittently present in this area flows to the west, towards Area 6. Therefore, in addition to inhalation exposures of vapor and particulate from on-Site areas, potential residential exposures to sediment are evaluated for Area 6. Exposures to ground water are not evaluated, however, because Area 6 is not located downgradient of the Site.

3.3 Exposure Concentrations

Constituent concentrations have been measured in soil, ground water, surface water, and sediment at various locations at and around the ACS Site. These measured concentrations are used in estimating potential exposure concentrations, i.e., chemical concentrations at the hypothetical points of contact discussed in Section 3.2. Approaches used to estimate exposure concentrations in the various environmental media (i.e., soil, ground water, surface water, sediment, and ambient air) are presented in the following sections.

3.3.1 Exposure Concentrations in Soil

USEPA guidance (USEPA 1989, 1992d) recommends using a conservative estimate of the arithmetic mean of measured concentrations for the exposure point concentration, when evaluating long-term exposures. The 95% upper confidence limit (UCL) on the arithmetic mean of measured concentrations is usually used in calculating Lifetime Average Daily Doses (LADDs) and Average Daily Doses (ADDs), although the maximum measured concentration is used when the 95% UCL exceeds the maximum detected concentration (USEPA 1989). In calculating the 95% UCL, assumptions about the distribution of the concentration data are necessary. In the baseline risk assessment, 95% UCL

concentrations are calculated using the USEPA (1992d) default equation for normally distributed data, unless the distribution of a constituent is clearly lognormal based on the Shapiro-Wilk test (Gilbert 1987). In such cases, the USEPA (1992d) equation for lognormally distributed data is used.

In evaluating exposures for a given area, all soil data from the relevant depth intervals from the area are used in calculating the 95% UCL concentration estimates. This approach is conservative because soil sampling and analysis at the Site have been biased toward locations and depths where concentrations are believed to be highest. Random sampling, which would be appropriate for more accurately quantifying exposures, would be expected to result in lower 95% UCL concentration estimates. Furthermore, there is no indication that long-term exposures of trespassers, routine workers, or excavation workers would be limited to any specific location within an area.

For evaluating potential surface contact exposures, the lower of the 95% UCL and maximum detected concentration of a constituent is obtained using soil samples collected within two feet of the ground surface for current scenarios and for the first estimate for future scenarios (Approach 1), and from two to 10 feet for the second estimate for future scenarios (Approach 2). For evaluating potential exposures during utility maintenance excavation activities, the lower of the 95% UCL and maximum detected concentration of a constituent is obtained using soil samples collected from a depth of 0 to 10 feet for the current and future scenarios, except in Area 4B. No wastes were disposed of in Area 4B and no constituents were detected in the subsurface soil sample from this Area (SB-096). Therefore, in Area 4B, the lower of the 95% UCL and maximum detected concentrations for all samples collected within a depth of two feet were used to evaluate potential future exposures during utility maintenance.

At the request of EPA, an additional bounding estimate of potential exposures to soil is evaluated using the maximum concentration of each constituent detected in Areas 2 and 3. Such a bounding estimate represents "worst-case" evaluation using currently available data, since the maximum concentrations for the different constituents do not all occur at the same location, and the 95% UCL concentration is significantly lower than the maximum detected concentration for many constituents. As previously discussed, USEPA (1989, 1992d) guidance recommends the use of the 95% UCL in evaluating long-term exposures, when the maximum exceeds the 95% UCL. The results of this "worst-case" evaluation are presented in Section 5.3 (Uncertainty Analysis).

3.3.1.1 Exposure Concentrations in Soil for Utility Maintenance and Construction Scenarios

As discussed in Section 3.2, workers may contact soils extending from the ground surface to the bottom of an excavation during excavation activities for utility maintenance or construction. For utility maintenance in Areas 1, 2, 3, and 4B, excavations are assumed to extend to 10 feet below ground surface. For hypothetical future building construction in Areas 2 and 3, two excavation depths are evaluated: (1) 4 feet below ground surface, and (2) 10 feet below ground surface. Neither utility maintenance nor building construction scenarios are evaluated for Area 4A because it is a wetland. Building construction scenarios are not evaluated for Area 1 or Area 4B because of the shallow depth to ground water in these areas.

Concentrations of some constituents in surface soil differ from those present in the subsurface due to higher migration potential from the surface soil (e.g., volatilization, surface water runoff), historical activities at the Site (e.g., placement of a cover over buried wastes), and other factors. Therefore, where sufficient data are available, a stratified approach was used to calculate exposure concentrations for excavation workers: weighted averages were calculated based on the volume of soil in the surface (0-2 ft) and subsurface (2 ft below ground surface to bottom of excavation) horizons. The calculations for Areas 1, 2, 3, and 4B are described separately below.

<u>Area 1</u>

Surface Samples (0-2'): 9 soil area samples and 5 discrete soil samples
Subsurface Samples (2-10'): 9 test pit/spoils pile samples and 57 soil boring samples
Calculation of exposure concentration for utility maintenance:
It was assumed that surface soil samples characterize concentrations present from the surface to two feet below ground surface (bgs), and that subsurface soil samples characterize concentrations present from 2 to 10 feet bgs. For all chemicals detected at least once within a depth of 10 ft bgs, the concentration in non-detect samples was assumed equal to one-half the detection limit for that sample. Chemicals not detected within 10 ft bgs were not included in this analysis. The 95% UCL was then calculated separately for each soil horizon (i.e., 0 to 2 ft and 2 to 10 ft). The lower of the 95%

UCL and maximum detected concentration for each chemical in each horizon was used to calculate the weighted average for an excavation through both horizons:

$$C_{s_{10\ ft\ exc}} = \frac{(C_{s_{0-2\ ft}} \cdot 2) + (C_{s_{2-10\ ft}} \cdot 8)}{10}$$

If a chemical was not detected in one of the two horizons (i.e., either from 0 to 2 ft or from 2 to 10 ft), the exposure concentration in that horizon was conservatively assumed to be either the 95% UCL for the horizon based on one-half detection limits, or the maximum detected concentration in the other horizon, whichever was lower.

Area 2

Surface Samples (0-2'): none

Subsurface Samples (2-4'): 7 test pit/spoils pile samples and 1 soil boring sample

Subsurface Samples (2-10'): 7 test pit/spoils pile samples and 21 soil boring samples

Calculation of exposure concentration for utility maintenance and building construction:

For Area 2, because there are no surface soil data, it was assumed that the subsurface soil concentrations characterize the concentrations throughout an excavation. This assumption is believed to be conservative because it does not account for the lower concentrations expected to be present in the clay cap placed over Area 2 wastes in the 1970's, and in the additional one-foot clay cap installed during recent remediation activities to limit surface water infiltration. For all chemicals detected at least once within the assumed excavation depth (4 ft bgs or 10 ft bgs), the concentration in non-detect samples was assumed to be equal to one-half the detection limit for that sample. Chemicals not detected within the excavation depth were not included in this analysis. For each chemical, the lower of the 95% UCL or the maximum concentration in the 2 to 4 ft interval, or in the 2 to 10 ft interval, was then used to calculate the exposure concentration for an excavation through a 4-ft or 10-ft excavation, respectively.

Area 3

Surface Samples (0-2'): 2 soil area samples and 12 soil boring samples (analyzed only for PCBs)

Subsurface Samples (2-4'): 4 test pit/spoils pile samples and 2 soil boring samples

Subsurface Samples (2-10'): 5 test pit/spoils pile samples and 25 soil boring samples

Calculation of exposure concentration for utility maintenance and building construction:

As with Area 1, it was assumed that surface soil samples characterize concentrations present from the surface to two feet below ground surface, and that subsurface soil samples characterize concentrations present from two feet below ground surface to the bottom of the excavation. For all chemicals detected at least once within the assumed excavation depth (4 ft bgs or 10 ft bgs), the concentration in non-detect samples was assumed to be equal to one-half the detection limit for that sample. Chemicals not detected within the excavation depth were not included in this analysis. The 95% UCL was then calculated separately for each soil horizon (i.e., 0 to 2 ft, 2 to 4 ft, and 2 to 10 ft). For each chemical in each horizon, the lower of the 95% UCL or the maximum concentration was then used to calculate the weighted average for an excavation through both horizons of a 10-ft or 4-ft excavation:

$$C_{s_{10\ ft\ exc}} = \frac{(C_{s_{0-2\ ft}} \cdot 2) + (C_{s_{2-10\ ft}} \cdot 8)}{10}$$

$$C_{s_{4\ ft\ exc}} = \frac{(C_{s_{0-2\ ft}} \cdot 2) + (C_{s_{2-4\ ft}} \cdot 2)}{4}$$

If a chemical was not detected in one of the horizons (i.e., either from 0 to 2 ft or from the deeper horizon of the excavation), the concentration in that horizon was conservatively assumed to be either the 95% UCL for the horizon based on one-half detection limits, or the maximum detected concentration in the other horizon, whichever was lower.

Area 4B

Surface Samples (0-2'): No surface soil samples, 6 sediment samples

Subsurface Samples (2-10'): 1 soil boring sample (no constituents detected)

Calculation of exposure concentration for utility maintenance:

Surface sediment concentrations were assumed to characterize the concentrations throughout an excavation in Area 4B. This assumption is extremely conservative since no waste disposal occurred in this area and no chemicals were detected in the

soil boring sample collected at depth. For each chemical, the exposure concentration was assumed to be the 95% UCL on the arithmetic mean, or the maximum concentration, whichever was lower for the surface sediments.

3.3.2 Exposure Concentrations in Ground Water

As discussed in Section 3.2, workers are not currently exposed to on-Site ground water. However, in the future, on-Site worker exposure to constituents in lower aquifer ground water could occur if on-Site ground water wells are established to supplement the available municipal supply. Potential exposure concentrations for Areas 1, 2, 3, and 4B are conservatively estimated using the maximum detected concentration for each constituent in lower aquifer water, based on all production well and on-Site lower aquifer monitoring well data.

In addition, future worker exposure to constituents in upper aquifer ground water may occur through dermal contact with ground water during utility maintenance excavation activities in Areas 1, 4B, and 5B, where the depth to ground water is shallowest. In other areas, the ground water is considerably deeper and direct exposures would not be expected. The exposure concentrations in Areas 1 and 4B are estimated using the maximum detected concentrations for each constituent in ground water, based on data from the upper aquifer monitoring wells located in or immediately adjacent to each Area. Consistent with USEPA Region 5 policy, hypothetical future worker exposures to constituents in off-Site upper aquifer water in Area 5B are estimated using data from wells at the center of the off-Site plume. Of the four upper aquifer wells in Area 5B, only Well MW-48 is in the center of the plume.

As discussed in Section 3.2.6, off-Site residential exposure to constituents in ground water may occur in Area 5A through ingestion, dermal contact, and inhalation of vapors during household use and through incidental ingestion and dermal contact during gardening, swimming and other outdoor activities. Potential current exposures to constituents in ground water are estimated using data from existing private wells. The existing private well with constituent concentrations corresponding to the highest overall potential risk is conservatively used to evaluate current off-Site residential exposures. Hypothetical future exposures to constituents in lower aquifer water are estimated using the maximum concentration for each constituent detected in any off-Site well in Area 5A. This approach is considered conservative because the maximum concentrations for all constituents do not all occur in the same well.

As discussed in Section 3.2, the shallow depth of the clay layer in the vicinity of the Site and other factors are expected to preclude installation of wells into the upper aquifer.

However, as a bounding estimate, future residential exposures to upper aquifer water are evaluated and presented in Section 5.3 (Uncertainty Analysis). Consistent with USEPA Region 5 policy, hypothetical future exposures to constituents in upper aquifer water are estimated using the lower of the 95% UCL and maximum detected concentration data from wells at the center of the off-Site plume (i.e., Wells MW-45 and MW-06 in Area 5A).

3.3.3 Exposure Concentrations in Sediment and Surface Water

Exposures of trespassers to sediments and surface water in Areas 4A and 4B, and of residents to sediments in Area 6, are evaluated under both current and future scenarios. Exposures of trespassers to these media in Areas 1 and 2 are evaluated as future scenarios, since these areas are currently fenced, and no trespassing has been observed. Exposures of workers to sediments and surface water in Area 1 are evaluated under both current and future scenarios, while exposures to these media in Areas 2 and 4B are evaluated under future scenarios since Areas 2 and 4B are not currently developed. In each of these areas, exposure concentrations are based on the lower of the 95% UCL and the maximum detected concentration.

3.3.4 Exposure Concentrations in Air

Exposure concentrations in ambient air resulting from potential vapor and particulate emissions from soil, and resulting from potential vapor emissions from ground water and surface water, are estimated using mathematical models in combination with the exposure concentrations in soil, ground water, and surface water. The vapor and particulate emission models for unsaturated soil, the vapor emission model for exposed and covered ground water, and the air dispersion model for estimating on-source and off-source air concentrations are all recommended by USEPA (USEPA 1992c, 1996a). Details of these models are presented in Appendix B; major features and assumptions in the emission and dispersion modeling are discussed below.

The model used to estimate vapor emissions from unsaturated soil is described by Jury et al. (1990) and by USEPA in its *Soil Screening Guidance* (USEPA 1996a). The model estimates the average vapor flux from the soil surface over a defined period of exposure under unsteady-state conditions, with the assumption that constituents in soil extend to a finite depth (i.e., to the water table) and that no clean cover is present. Default values recommended by USEPA (1996a) are used for all soil properties, unless Site-specific data are available. Chemical-specific transport properties (i.e., K_{oc}, Henry's

law constant, diffusivity in air, and diffusivity in water) compiled by USEPA (1996a) are also used in the calculation of vapor flux.

The model used for estimating potential vapor emissions from exposed ground water and surface water is recommended by USEPA (1992e). It estimates the steady-state vapor flux of constituents using an overall mass transfer coefficient, which accounts for mass transfer of a chemical through water-air interfacial films. The concentration of a constituent in the exposed ground water is assumed to remain constant at the estimated exposure concentration. Henry's law constants compiled by USEPA (1996a) are used in the calculation of the overall mass transfer coefficients.

The model for estimating vapor emissions from ground water below a layer of cover soil is a one-dimensional steady-state diffusion model using Fick's Law. The model estimates the steady-state vapor flux of constituents from the water table, through the region of capillary rise, and through pore space in soil above the capillary fringe. The concentration of a constituent in the ground water is assumed to remain constant at the estimated exposure concentration. Henry's law constants and diffusion coefficients compiled by USEPA (1996a) are used in the calculations.

The particulate emission model (USEPA 1992e) for undisturbed soils is based on the suspension of surface soil by wind erosion. It estimates the emission of respirable soil particles, defined as being 10 μm in diameter or smaller (i.e., PM_{10}). The key parameters in the model that influence particulate emission are the threshold friction velocity for the soil and the mean annual wind speed. For the threshold friction velocity, which is correlated to the mode of the soil aggregate size distribution, USEPA's default mode aggregate size of 0.5 mm is used. A mean annual wind speed of 10.2 miles per hour (or 4.56 m/s) from the National Oceanic and Atmospheric Administration (NOAA 1993) for South Bend, Indiana is used. USEPA (1996a) default values are used for other model parameters, unless Site-specific data are available as noted in Appendix B.

Particulate emissions resulting from potential on-facility excavation in Areas 1 and 4B are expected to be insignificant, since the water table in these areas is very shallow, so that little dry soil would be exposed and become susceptible to airborne transport. Particulate emissions during hypothetical future excavations and construction in Areas 2 and 3 are evaluated using empirical data compiled by USEPA (1995b) which pertain to dust emission from "heavy construction operations."

Under non-excavation conditions, on-facility and off-Site air concentrations are estimated using USEPA's Industrial Source Complex (ISCST3) model (USEPA 1995a). ISCST3 is an advanced steady-state Gaussian plume model that calculates chemical concentrations at specific downwind locations as a function of wind speed, atmospheric

stability, temperature gradient, mixing height and downwind distance. ISCST3 utilizes local hourly meteorological data records to define the conditions for dispersion. Data from the closest stations were used: Michiana Airport in South Bend, Indiana for surface meteorological conditions, and Bishop Airport in Flint, Michigan for upper air data. The on-facility workers in each area are assumed to move freely throughout the area, and the applicable area-wide dispersion factor is estimated from the average of the dispersion factors developed for each receptor location within the area. Off-facility receptors are assumed to be located near the intersection of Colfax Avenue and Reder Road for Area 5A, along the Grand Trunk Railroad right-of-way for Area 5B, and along the Chicago & Erie Railroad right-of-way for Area 6.

Other major assumptions used in the modeling are:

- The emission source is represented as a non-buoyant, zero-momentum area source;
- Suspended particles from the source remain suspended before reaching the receptor (i.e., there is negligible deposition and resuspension); and
- The physical setting of the facility and its immediate surroundings can be modeled as a rural environment with no significant obstructions (e.g., tall buildings, abrupt topography).

For excavation activities, on-Site concentrations in air are estimated using a simple "box" model, while off-Site concentrations are estimated using USEPA's ISCST3 model. The "box" model, which allows for screening level calculations near a ground level emission source, is discussed in detail in Appendix B.

Results of air emission and dispersion modeling were compared to ambient air monitoring conducted at the Site in July 1997 (Focus 1997). Daily eight-hour ambient air samples were collected approximately 100 feet upwind and 100 feet downwind of the material handling activities in Area 2 during on-Site excavation, trenching, and screening. Modeled emissions were estimated using: (1) maximum soil concentrations in Area 2; and (2) the lower of the maximum and 95% UCL soil concentrations in Area 2. These emissions were combined with maximum eight-hour average dispersion estimates for receptors located approximately 100 feet from a source, based on ISCST3. Modeled ambient air concentrations based on maximum Area 2 soil concentrations ranged from five-fold to 200-fold higher than the maximum measured ambient air concentrations. Modeled ambient air concentrations based on the lower of the maximum or 95% UCL soil

concentrations more closely approximated the measured concentrations (i.e., modeled concentrations ranged from 0.9 to 30 times the measured concentrations). Thus, ambient air concentrations estimated in the risk assessment using the EPA emission models and the ISCST3 dispersion model are likely to be conservative estimates of potential concentrations. The comparison of air modeling results to the Focus (1997) monitoring results is presented in Appendix B.

Indoor air concentrations from indoor use of ground water are estimated by applying a volatilization factor of 0.5 L/m^3 to the estimated concentrations of volatile organic compounds in ground water. The volatilization factor is based on experimental data on the volatilization of radon from household uses of water and is recommended by USEPA (1991c). The volatilization factor is also consistent with the results of a three-compartment, mass balance model (McKone 1987) simulating the transfer of VOCs from household uses of tap water and the distribution of the VOCs inside a home. The volatilization factor of 0.5 L/m^3 was also used to estimate air concentrations in on-Site showers used by workers.

3.4 *Estimation of Media Intake*

Potential exposures via the pathways identified in Section 3.2 are calculated by multiplying the estimated constituent concentrations in environmental media (identified in Section 3.3) by the estimated intake of the environmental media by potentially exposed populations. The product of these two components is called the potential dose (USEPA 1992c). The potential dose is combined with toxicity values (presented in Section 4) to estimate theoretical carcinogenic risk and the potential for noncancer health effects (presented in Section 5). Since inhalation toxicity values are typically reported in units of concentration rather than potential dose, the air concentration over the period of exposure is estimated (rather than potential dose), and combined with the inhalation toxicity values to estimate potential inhalation risks.

Potential dose is calculated differently when evaluating theoretical carcinogenic risk than when evaluating the potential for noncarcinogenic effects. For evaluating carcinogenic risk, intake is averaged over a lifetime (USEPA 1989) and the potential dose is called the lifetime average daily dose (LADD). For evaluating noncarcinogenic effects, intake is averaged over the period of exposure and the potential dose is called the average daily dose (ADD). The LADD and ADD of a constituent for a specific route of exposure (e.g., soil ingestion) are generally calculated using the following equations:

$$LADD_{route} = Concentration_{medium} \cdot Intake_{lifetime,\ route} \qquad \textbf{Equation (4)}$$

The general equation for estimating intake is as follows:

$$Intake = \frac{CR \cdot EF \cdot ED}{BW \cdot AT}$$

Equation (5)

where:

Intake = Unit dose, $kg_{soil}/kg_{body\ weight}$-day

CR = contact rate, which is either:

- soil ingestion rate (IR), mg/day
- drinking water rate (DR), L/day;
- dermal contact rate for soil exposures, mg/day, which is the product of the exposed skin surface area (SA), soil-to-skin adherence factor (AD), and absorption factor (ABS);
- dermal contact rate for water exposures, cm^3/day, which is the product of the skin surface area (SA), skin permeability coefficient (K_p), and exposure time.

EF = exposure frequency, days/year, which includes an exposure time (ET) term for the inhalation pathway;

ED = exposure duration, years;

BW = body weight, kg; and

AT = averaging time (AT), days, which is a lifetime of 70 years for carcinogens (AT_{carc}), and which is equal to the exposure duration for noncarcinogens ($AT_{noncarc}$).

It should be noted that the general equation for inhalation intake does not include body weight (BW) or contact rate (CR), because the inhalation toxicity factors are already adjusted for these terms. The specific equations used to calculate media intakes for each route of exposure are presented in Appendix C.

Estimates of media intake are developed for the following hypothetical populations (receptors) and exposure scenarios, as identified in Section 3.2:

3.4.1 On-Site Routine Worker (Areas 1, 2, 3, 4B)

- incidental soil/sediment ingestion
- dermal contact with soil/sediment
- inhalation of vapors and particulates in ambient air
- incidental ingestion of ground water outdoors

- dermal contact with ground water outdoors and indoors
- inhalation of vapors from indoor ground water use
- incidental ingestion of surface water outdoors (Areas 1, 2, 4B only)
- dermal contact with surface water outdoors

3.4.2 On-Site Utility Maintenance Worker (Areas 1, 2, 3, 4B)

- incidental soil/sediment ingestion
- dermal contact with soil/sediment
- inhalation of vapors and particulates in ambient air
- dermal contact with ground water while excavating (Areas 1 and 4B only)

3.4.3 On-Site Construction Worker (Areas 2 and 3)

- incidental soil ingestion
- dermal contact with soil
- inhalation of vapors and particulates in ambient air

3.4.4 Hypothetical On-Site Trespasser (Areas 1, 2, 3, 4A, 4B)

- incidental ingestion of soil and/or sediment
- dermal contact with soil and/or sediment
- inhalation of vapors and particulates in ambient air
- incidental ingestion of surface water (Areas 1, 2, 4A, 4B only)
- dermal contact with surface water (Areas 1, 2, 4A, 4B only)

3.4.5 Off-Site Resident (Areas 5A and 6)

- incidental ingestion of soil (Area 5A only)
- dermal contact with soil (Area 5A only)
- incidental ingestion of sediment (Area 6 only)
- dermal contact with sediment (Area 6 only)
- inhalation of vapors and particulates in ambient air
- incidental ingestion of ground water used outdoors (Area 5A only)
- dermal contact with ground water used outdoors (Area 5A only)
- ingestion of drinking water (Area 5A only)
- dermal contact with ground water while showering (Area 5A only)
- inhalation of vapors from household use of ground water (Area 5A only)

3.4.6 Off-Site Utility Maintenance Worker (Area 5B)

- inhalation of vapors in ambient air
- dermal contact with ground water while excavating

According to USEPA (1995c) guidance, variability in the factors affecting exposure within a potentially exposed population should be considered in estimating potential current and future exposures. As one means of characterizing the distribution of possible exposures in a population, USEPA (1995c) recommends that both high-end and central tendency estimates of exposure be developed. Central tendency (i.e., typical) estimates represent the average, or most likely, exposures in the population. High-end (often referred to as reasonable maximum) estimates represent the exposures "above the 90th percentile of the population distribution, but not higher than the individual in the population who has the highest exposure." (USEPA 1995c). The exposure factors for estimating central tendency and high-end intakes for each of the potential receptor groups are presented in the following sections and summarized in Tables 3-5 and 3-6, respectively. The factors discussed below apply to both current and future land use scenarios, unless otherwise noted.

3.4.1 On-Site Routine Worker

The exposure factors used in the baseline risk assessment for workers engaged in routine industrial activities at the Site are discussed below.

3.4.1.1 Contact Rates

- **Incidental Ingestion Rate of Surface Soil**
  The current and future routine worker is assumed to ingest 100 mg of soil per day under the high-end scenario, and 50 mg of soil per day under the typical scenario. Consistent with USEPA guidance (1991a, 1997c), these ingestion rates are based on the adult soil ingestion rates presented in Calabrese et al. (1990).

- **Dermal Contact with Surface Soil: Exposed Skin Surface Area, Soil-Skin Adherence Factor, and Absorption Factor**
  Dermal contact is estimated from the product of exposed skin surface area, soil-skin adherence factor, and chemical-specific absorption factor. The

product of the exposed skin surface area and the soil-skin adherence factor is known as the dermal soil loading.

Based on USEPA (1998b, 1998c), soil adherence is assumed to be 0.08 mg/cm^2-event for adults. USEPA (1992f) recommends assuming that a skin area corresponding to 25% of the total body skin area is exposed to soil. Accordingly, surface area is assumed to be 5,800 cm^2 for the high-end scenario and 5,000 cm^2 for the typical scenario.

USEPA's (1998b) chemical-specific absorption factors are conservatively used in this assessment. The generic absorption factors recommended in USEPA (1998b) guidance of 10% for organics and 1% for inorganics are used for all other chemicals.

- **Incidental Ingestion Rate of Surface Water**

  Current and future workers in Area 1 could contact surface water in the fire pond, and future workers could contact surface water that is intermittently present in ditches in Area 2 and Area 4B. Under the high-end and typical scenarios, the routine worker is assumed to ingest 0.05 liters of surface water per contact event. This ingestion rate is conservatively based on USEPA's (1989) ingestion rate for swimming of 0.05 L/hour, along with the assumption that the worker would be in contact with the water for up to an hour per day. The ingestion rate is very conservative, considering that the worker is not swimming in the water, and thus the potential for incidental ingestion is much lower.

- **Incidental Ingestion Rate of Ground Water Used Outdoors**

  There is currently no on-Site use of ground water at the Site. For future worker scenarios, it is assumed that an on-Site well could be installed in the lower aquifer. The future routine worker could hypothetically contact lower aquifer ground water while engaging in outdoor work that involves the use of ground water from an on-Site well, such as hosing off asphalt surfaces or watering a lawn. In order to quantify hypothetical exposures under this pathway, it is assumed that the routine worker is watering the lawn. Under the high-end scenario, the routine worker is assumed to ingest 0.1 liters of lower aquifer ground water per day while watering a lawn. This ingestion rate is conservatively based on USEPA's (1989) ingestion rate for swimming of 0.05 L/hour, along with the assumption that the worker would water the

lawn for up to two hours per day, consistent with the upper end of USEPA's (1997c) time estimate of one to two hours per day for gardening. The 0.1 L/day ingestion rate is very conservative, considering that the worker is not swimming in the water.

Under the typical scenario, the routine worker is assumed to ingest 0.05 liters of lower aquifer ground water per day while engaging in outdoor work that would involve ground water. This ingestion rate is also based on USEPA's (1989) ingestion rate for swimming of 0.05 L/hour, but with the expectation that the worker would typically water the lawn for approximately one hour per day, consistent with USEPA's (1997c) time estimate of one to two hours per day for gardening. For the reasons discussed above, the 0.05 L/hour ingestion rate is considered conservative for the typical scenario.

- **Dermal Contact with Ground Water Used Outdoors and with Surface Water: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**

  Dermal contact with constituents in water is estimated from the product of the exposed skin surface area and the chemical-specific dermal permeability coefficient (K_p). Consistent with exposed skin surface areas for soil exposure, the future routine worker is assumed to have 5,800 cm^2 of exposed skin for the high-end scenario and 5,000 cm^2 of exposed skin for the typical scenario of exposure to either surface water or ground water used outdoors. It is conservatively assumed that the entire exposed skin surface area would come into direct contact with water.

  Chemical-specific permeability coefficients (K_p) were estimated using Equation 5.8 from USEPA (1992f), while a default K_p value of 10^{-3} cm/hour was assigned to those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established, based on USEPA (1992f) which states that the limiting permeability coefficient in the viable epidermis ranges from 0.1 to 1.0 cm/hr and that "... it seems reasonable to expect that experimentally measured permeability coefficients for chemical penetration across the skin from aqueous media (assuming that the chemical does not alter the barrier properties) are limited to one cm/hour" (p. 4-21).

  As described above for incidental ingestion of ground water, the future routine worker is assumed to be engaged in work that would involve use of

ground water for two hours per day under the high-end scenario, and one hour per day under the typical scenario. As described above for incidental ingestion of surface water, the future routine worker is assumed to be in contact with surface water for one hour per day under both the high end and typical scenarios.

- **Dermal Contact with Ground Water Used Indoors: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**
  If an on-Site well is installed in the future, it is assumed that workers could use the water for showering, thereby exposing the total body surface area to ground water. The high-end surface area is assumed to be 23,000 cm^2 corresponding to the 95th percentile of measured total body surface areas for men (USEPA 1992f, 1997c). The central tendency surface area is assumed to be 20,000 cm^2, based on the mean total body surface areas for men (USEPA 1992f, 1997c).

3.4.1.2 Exposure Frequency

- **Frequency of Incidental Ingestion of Soil and Indoor Dust**
  Under high-end scenario, the routine worker is expected to have an exposure frequency of 250 days/year, based on a 5-day work week for 50 weeks per year, consistent with USEPA (1991a) guidance. Under the typical scenario, the routine worker is expected to have an exposure frequency of 219 days/ year, based on an average for all full and part-time workers (USEPA 1993a). These frequencies account for both outdoor ingestion of surface soil and indoor ingestion of dust.

- **Frequency of Dermal Contact with Soil and Indoor Dust**
  For routine workers, the frequency of dermal contact is assumed to be the same as the frequency of incidental ingestion. Thus, the exposure frequency is 250 days per year for the high-end scenario and 219 days/year for the typical scenario, accounting for both outdoor contact with surface soil and indoor contact with dust.

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air, including Exposure Time (ET) Term**
  Under the high-end scenario, the routine worker is expected to have an inhalation exposure frequency of 250 days/year, based on 5-day work week for 50 weeks per year, consistent with USEPA (1991a) guidance. As discussed above, under the typical scenario, workers are expected to have an inhalation exposure frequency of 219 days per year. Because of the high activity level expected for a worker, and therefore elevated inhalation rate, the exposure frequency is not adjusted by an exposure time (ET) term to account for the hours per day a receptor is at the Site. Thus, the inhalation rate for the worker would correspond to 2.5 m^3/hr.

- **Frequency of Incidental Ingestion of Surface Water**
  Current and future workers in Area 1 could contact surface water in the fire pond, and future workers could contact surface water that is intermittently present in ditches in Area 2 and Area 4B. Under the high-end scenario, the routine worker is assumed to incidentally ingest surface water approximately once a week during the summer months, or 12 days per year. Under the typical scenario, the routine worker is assumed to incidentally ingest surface water once a month during the summer months, or three days per year.

- **Frequency of Dermal Contact with Surface Water**
  Frequency of dermal contact with surface water is expected to be the same as the frequency of incidental ingestion of surface water. Thus, the exposure frequency for a worker is 12 days per year for the high-end scenario and three days per year for the typical scenario.

- **Frequency of Incidental Ingestion of Ground Water Used Outdoors**
  Under the hypothetical future ground water use scenario, the frequency with which a routine worker may incidentally ingest lower aquifer ground water during outdoor activities, such as watering a lawn, is assumed to be 40 days per year for both the high-end and typical scenarios, based on USEPA (1997c) guidance on gardening frequency. Use of gardening frequency to estimate hypothetical on-Site water use frequency is conservative because it assumes that all gardening events involve water use.

- **Frequency of Dermal Contact with Ground Water Used Outdoors**
  Under the hypothetical future ground water use scenario, the frequency with which a routine worker may contact lower aquifer ground water during outdoor activities is expected to be 40 days per year for both the high-end and typical scenarios, based on USEPA (1997c) guidance on gardening frequency. Use of gardening frequency to estimate hypothetical on-Site water use frequency is conservative because it assumes that all gardening events involve water use.

- **Frequency of Dermal Contact with Ground Water Used Indoors**
  If an on-Site well is installed in the future, it is assumed that workers could use the water for showering during each work day. Thus, the exposure frequency for dermal contact is 250 days per year for the high-end scenario and 219 days per year for the typical scenario.

- **Frequency of Inhalation of Vapors from Ground Water During Indoor Use**
  If an on-Site well is installed in the future, it is assumed that workers could use the water for showering during each work day. Thus, the exposure frequency for inhalation exposures is 250 days per year for the high-end scenario and 219 days per year for the typical scenario.

3.4.1.3 Exposure Duration

For the high-end scenario, the routine worker is expected to work at the facility for 20 years, based on the 99th percentile for worker tenure at one location (USEPA 1993a). For the typical scenario, the routine worker is expected to work at the facility for five years, based on the recommended central tendency value for worker tenure at one location (USEPA 1993a).

3.4.1.4 Body Weight

For both the high-end and typical scenarios, the body weight of the routine worker is assumed to be 70 kg, based on the mean adult body weight presented in USEPA (1993a, 1997c).

3.4.1.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for carcinogenic risks is equal to a lifetime of 70 years in days (i.e. 25,550 days). For both the high-end and typical scenarios, the averaging time for noncarcinogenic effects is equal to the exposure duration in days. For year-round exposures, such as soil ingestion, the averaging time is equal to the number of days in a year multiplied by the number of years of exposure. For seasonal exposures, such as dermal contact with surface water, the averaging time is equal to the number of days in the season multiplied by the number of years of exposure. For example, the high-end scenario averaging time for a worker contacting surface water is calculated: (3 months/12 months) x (365 days/yr) x (20 years), which equals 1,825 days.

3.4.2 On-Site Utility Maintenance Worker

The exposure factors discussed below correspond to a hypothetical future scenario in which workers engage in excavation activities in order to maintain underground utility lines without wearing the proper personal protective equipment currently required by ACS health and safety protocols.

3.4.2.1 Contact Rates

- **Incidental Ingestion Rate of Surface and Subsurface Soil**
  For the high-end scenario, the excavation worker is assumed to ingest 480 mg of soil per day, based on USEPA (1991a, 1993a). Under the typical scenario, the excavation worker is assumed to ingest 100 mg of soil per day, based on USEPA (1993a).

- **Dermal Contact with Surface and Subsurface Soil: Exposed Skin Surface Area, Soil-Skin Adherence Factor, and Absorption Factor**
  Dermal contact with soil is estimated from the product of the exposed skin surface area, the soil-skin adherence factor, and the chemical-specific absorption factor. The product of the exposed skin surface area and the soil-skin adherence factor is known as the dermal soil loading.

  Based on USEPA (1998b, 1998c), soil adherence is assumed to be 0.08 mg/cm^2-event for adults. USEPA (1992f) recommends assuming that a skin area corresponding to 25% of the total body skin area is exposed to soil.

Accordingly, surface area is assumed to be 5,800 cm^2 for the high-end scenario and 5,000 cm^2 for the typical scenario.

The estimates for absorption factors for the excavation workers are assumed to be the same as those for the routine worker (as described in Section 3.4.1.1).

- **Dermal Contact with Ground Water While Excavating: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**
  The dermal contact rate for water exposures is obtained from the product of the exposed skin surface area and the chemical-specific permeability coefficient. The estimates for exposed skin surface area for the excavation workers are assumed to be the same as those for the routine worker (as described in Section 3.4.1.1). That is, the exposed skin surface area is 5,800 cm^2 for high-end exposures, and 5,000 cm^2 for typical exposures. The entire exposed skin area is conservatively assumed to come in direct contact with ground water during excavation.

  K_p values were estimated using Equation 5.8 from USEPA (1992f), and a default K_p value of 10^{-3} cm/hour was assigned to those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established based on USEPA (1992f).

  For the high-end and typical scenarios, the excavation worker is conservatively assumed to be engaged in excavation work that would bring him in contact with ground water for eight hours per day, in Areas 1 and 4B only.

3.4.2.2 Exposure Frequency

- **Frequency of Incidental Ingestion of Surface and Subsurface Soil**
  Excavation activities for utility maintenance are assumed to be conducted for two work-weeks per year (i.e, 10 days/year) for the high-end scenario and one work-week (i.e., 5 days/year) for the typical scenario, based on the time estimated to maintain underground utility lines.

- **Frequency of Dermal Contact with Surface and Subsurface Soil**
  The frequency of dermal contact with soil during utility maintenance is assumed to be the same as the frequency of incidental ingestion. Thus, the

exposure frequency is assumed to be 10 days per year for the high-end scenario and five days/year for the typical scenario.

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air**
  As noted above, the utility maintenance worker is assumed to be engaged in activities to maintain underground utility lines for 10 days per year under the high-end scenario and five days per year under the typical scenario. Because of the high activity level expected for a utility maintenance worker, and therefore elevated inhalation rate, the exposure frequency is adjusted by an exposure time (ET) term to account for the difference between a resident's typical breathing rate and that of an excavation worker. Thus, the inhalation rate for the utility maintenance worker would correspond to 3.5 m^3/hr.

- **Frequency of Dermal Contact with Ground Water While Excavating**
  The frequency with which a worker may have dermal contact with water while excavating is assumed to be equal to the frequency an excavation worker may incidentally ingest soil. Thus, the exposure frequency is assumed to be 10 days per year for the high-end scenario and five days/year for the typical scenario.

3.4.2.3 Exposure Duration

For the high-end scenario, the worker is expected to work at the facility for 20 years, based on the 99th percentile for worker tenure at one location (USEPA 1993a). For the typical scenario, the worker is expected to work at the facility for five years, based on the USEPA guidance (USEPA 1993a) central tendency value for worker tenure at one location.

3.4.2.4 Body Weight

For both the high-end and typical scenarios, the body weight of the excavation worker is assumed to be 70 kg, based on the mean adult body weight presented in USEPA (1993a, 1997c).

3.4.2.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for carcinogenic risks is equal to a lifetime of 70 years in days (i.e., 25,550 days). For both the high-end and typical scenarios, the averaging time for noncarcinogenic effects is equal to the exposure duration in days, calculated as the product of the exposure frequency and the exposure duration.

3.4.3 On-Site Construction Worker

The exposure factors discussed below correspond to a hypothetical future scenario in which workers engage in building construction activities in Areas 2 and 3 without wearing the proper personal protective equipment currently required by ACS health and safety protocols.

3.4.3.1 Contact Rates

- **Incidental Ingestion Rate of Surface and Subsurface Soil**
  For the high-end scenario, the construction worker is assumed to ingest 480 mg of soil per day, based on USEPA (1991a, 1993a). Under the typical scenario, the construction worker is assumed to ingest 100 mg of soil per day, based on USEPA (1993a).

- **Dermal Contact with Surface and Subsurface Soil: Exposed Skin Surface Area, Soil-Skin Adherence Factor, and Absorption Factor**
  Dermal contact with soil is estimated from the product of the exposed skin surface area, the soil-skin adherence factor, and the chemical-specific absorption factor. The product of the exposed skin surface area and the soil-skin adherence factor is known as the dermal soil loading.

  Based on USEPA (1998b, 1998c), soil adherence is assumed to be 0.08 mg/cm^2-event for adults. USEPA (1992f) recommends assuming that a skin area corresponding to 25% of the total body skin area is exposed to soil. Accordingly, surface area is assumed to be 5,800 cm^2 for the high-end scenario and 5,000 cm^2 for the typical scenario.

  The estimates for absorption factors for the construction workers are assumed to be the same as those for the routine worker (as described in Section 3.4.1.1).

3.4.3.2 Exposure Frequency

- **Frequency of Incidental Ingestion of Surface and Subsurface Soil**
  Construction activities are assumed to be conducted five days per week for nine months for the high end scenario, or 196 days per year. For the typical scenario, construction activities are assumed to be conducted five days per week for three months, or 65 days per year.

- **Frequency of Dermal Contact with Surface and Subsurface Soil**
  The frequency of dermal contact is assumed to be the same as the frequency of incidental ingestion. Thus, the exposure frequency is assumed to be 196 days per year for the high-end scenario and 65 days per year for the typical scenario.

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air**
  As noted above, the construction worker is assumed to be at the Site for 196 days per year under the high-end scenario and 65 days per year under the typical scenario. Because of the high activity level expected for a construction worker, and therefore elevated inhalation rate, the exposure frequency is adjusted by an exposure time (ET) term to account for the difference between a resident's typical breathing rate and that of an excavation worker. Thus, the inhalation rate for the construction worker would correspond to 3.5 m^3/hr.

3.4.3.3 Exposure Duration

For both the high-end and typical scenarios, the construction worker is expected to work at the Site during the period of construction, or nine months for the high-end scenario and three months for the typical scenario. In the exposure calculation, the exposure duration is expressed as one year because the fraction of the year is accounted for in the exposure frequency.

3.4.3.4 Body Weight

For both the high-end and typical scenarios, the body weight of the construction worker is assumed to be 70 kg, based on the mean adult body weight presented in USEPA (1993a, 1997c).

3.4.3.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for carcinogenic risks is equal to a lifetime of 70 years in days (i.e., 25,550 days). For both the high-end and typical scenarios, the averaging time for noncarcinogenic effects is equal to the exposure period in days: nine months (274 days) for the high-end scenario, and three months (91 days) for the typical scenario.

3.4.4 Hypothetical On-Site Trespasser

Potential exposures to trespassers on the Site are estimated using exposure factors for adolescents, 9 to 18 years of age. Although other age groups could trespass at the Site, adolescent exposures are expected to be more significant than those for adults due to the lower body weight of a 9 to 18 year old, and more significant than those of younger children, who are subject to greater adult supervision.

The exposure factors discussed below were approved for Areas 4A and 4B under the current scenario, and Areas 1, 2, 3, 4A, and 4B under the future scenario. Based on Site-specific observations, and because Areas 1, 2, and 3 are surrounded by a maintained fence, trespassing is considered negligible under the current scenario for Areas 1, 2, and 3.

3.4.4.1 Contact Rates

- **Incidental Ingestion Rate of Surface Soil/Sediment**
  The hypothetical trespasser is assumed to ingest 100 mg of soil per day under the high-end scenario, and 50 mg of soil per day under the typical scenario. Consistent with USEPA guidance (1991a, 1997c), these ingestion rates are based on the adult soil ingestion rates presented in Calabrese et al. (1990). These ingestion rates are conservative in that they assume that all of the soil ingested each day is from the Site.

- **Dermal Contact with Surface Soil/Sediment: Exposed Skin Surface Area, Soil-Skin Adherence Factor, Absorption Factors**
  The trespasser is assumed to contact soil/sediment while walking through On-Site Areas 1, 2, and 3 (future only), or while loitering in On-Site Areas 4A and 4B (current and future).

  Based on USEPA (1998b, 1998c), soil adherence is assumed to be 0.08 mg/cm^2-event for trespassers. USEPA (1992f) recommends assuming

that a skin area corresponding to 25% of the total body skin area is exposed to soil. Accordingly, surface area is assumed to be 4,400 cm^2 for the high-end scenario which is 25% of the 95th percentile of total body surface areas for 9 to 18 year olds. Similarly, surface area is assumed to be 3,600 cm^2 for the typical scenario, using 25% of the 50th percentile total body surface areas for this age group.

As described above for other receptors, USEPA's (1998b) chemical-specific absorption factors are conservatively used in this assessment. The generic absorption factors recommended in USEPA (1998b) guidance of 10% for organics and 1% for inorganics are used for all other chemicals.

- **Incidental Ingestion Rate of Surface Water**

  Under the high-end and typical scenarios, the trespasser is assumed to ingest 0.1 liters and 0.05 liters of water per day, respectively, while engaging in recreational activities on-Site such as splashing water in the marsh in Area 4A or the occasional puddle in Area 4B. The ingestion rate is conservatively based on the amount of water expected to be ingested while swimming, 0.05 L/hour, presented in USEPA (1989), and the assumption that the trespasser will contact surface water for two hours per day.

- **Dermal Contact with Surface Water: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**

  Dermal contact with constituents in water is estimated from the product of the exposed skin surface area and the chemical-specific permeability coefficient. The body surface areas provided in USEPA (1992f) were used to estimate the exposed surface areas for a trespasser between the ages of 9 and 18. For the high-end scenario, the trespasser is assumed to have an exposed skin surface area of 4,400 cm^2, based on the assumption that 25% of the trespasser's total body surface area has the potential to contact water and using the 95th percentile of total body surface areas for this age group. For the typical scenario, the trespasser is assumed to have an exposed skin surface area of 3,600 cm^2, using 25% of the 50th percentile total body surface areas for this age group.

  Chemical-specific K_p values were estimated using Equation 5.8 from USEPA (1992f), and a default K_p value of 10^{-3} cm/hour was assigned to

those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established based on USEPA (1992f).

The trespasser is expected to be on facility property for up to four hours per day under the high-end scenario and two hours per day under the typical scenario, consistent with USEPA Region 5 guidance. It is assumed that half the time spent at the Site would involve direct contact with marsh or puddle water (i.e., two hours/day and one hour/day for the high-end and typical scenarios, respectively).

3.4.4.2 Exposure Frequency

- **Frequency of Incidental Ingestion of Soil/Sediment**
  For Areas 4A and 4B under current land use and all Areas under future land use, the standard default Region 5 trespasser scenario is assumed: the frequency of trespassing is 54 days per year under the high-end scenario and 12 days per year under the typical scenario. The high-end scenario assumes trespassing one day per week in April, May, September, and October and three days per week during the summer months of June, July, and August. The typical scenario assumes one day per week during the summer months of June, July, and August.

- **Frequency of Dermal Contact with Soil/Sediment**
  Dermal contact with soil/sediment is assumed to occur with the same frequency as soil/sediment ingestion. Thus, the exposure frequency is 54 days per year for the high-end scenario and 12 days per year for the typical scenario, for current exposure in Areas 4A and 4B and future exposures in all Areas.

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air, including Exposure Time (ET) Term**
  The frequency that a trespasser inhales vapor or airborne particulate matter from the Site is assumed to be equal to the exposure frequency described above for contact with soil. For the inhalation pathway, the exposure frequency is adjusted with an exposure time (ET) term to account for the hours per day a receptor is expected to inhale Site contaminants. Consistent with the standard default Region 5 trespasser scenario, the trespasser is

assumed to visit the Site and potentially inhale Site contaminants for four out of 24 hours per day for the current high-end scenarios for Areas 4A and 4B and for future high-end scenarios for all on-Site Areas.

- **Frequency of Incidental Ingestion of Surface Water**
  Under the high-end scenario, the trespasser is assumed to incidentally ingest surface water approximately once a week during the summer months, or 14 days per year. Under the typical scenario, the trespasser is assumed to incidentally ingest surface water once a month during the summer months, or three days per year.

- **Frequency of Dermal Contact with Surface Water**
  The frequency that a trespasser may have dermal contact with surface water is assumed to be equal to the frequency that a trespasser may incidentally ingest surface water as described above.

3.4.4.3 Exposure Duration

An exposure duration of 10 years is assumed for the hypothetical trespasser under the high-end scenario, based on the total years in the 9 to 18-year-old age group. Typical exposure durations are likely to be much shorter than this given that the Site is an active manufacturing facility. In addition, the availability of recreational areas nearby (e.g., Oak Ridge Prairie Park) makes extended trespassing at the Site less likely. Therefore, an exposure duration of two years is assumed for the trespasser under the typical scenario.

3.4.4.4 Body Weight

A body weight of 50 kg is used for the trespasser under both the high-end and typical scenario, based on the average body weight for individuals ages 9 to 18 years (USEPA 1997c).

3.4.4.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for evaluating carcinogenic risks is equal to a lifetime of 70 years in days (i.e., 25,550 days). For both the high-end and typical scenarios, the averaging time for evaluating noncarcinogenic effects is equal to the exposure duration in days. Since trespassing is expected to be a seasonal exposure (i.e., occurring during only three to seven months

of the year), the averaging time is equal to the number of days in the season multiplied by the number of years of exposure. For example, the high-end scenario averaging time for a trespasser contacting sediment in Area 4A is calculated: (7 months/12 months) x (365 days/year) x (10 years), which equals 2,129 days.

3.4.5 Off-Site Resident

Potential exposures to residential receptors are estimated using exposure factors for adults and for children (ages one to six).

3.4.5.1 Contact Rates

- **Incidental Ingestion Rate of Soil and Sediment**
  Under the high-end scenario, the adult and child resident are assumed to ingest 100 mg of soil/sediment per day and 400 mg of soil/sediment per day, respectively, based on USEPA (1993a, 1997c). Under the typical scenario, the adult and child resident are assumed to ingest 50 mg/day and 100 mg/day, respectively, based on USEPA (1997c).

- **Dermal Contact with Soil and Sediment: Exposed Skin Surface Area, Soil-Skin Adherence Factor, and Absorption Factor**
  Adult and child residents in Area 5A are assumed to contact soil in their yards. The adult and child residents in Area 6 are assumed to contact sediment from a stream in their yard.

  Based on USEPA (1998b, 1998c), soil adherence is assumed to be 0.08 mg/cm^2-event for adults and 0.3 mg/cm^2-event for children. USEPA (1992f) recommends assuming that a skin area corresponding to 25% of the total body skin area is exposed to soil. Accordingly, adult surface area is assumed to be 5,800 cm^2 for the high-end scenario and 5,000 cm^2 for the typical scenario. Surface area for child residents is assumed to be 2,100 cm^2 for the high-end scenario and 1,800 cm^2 for the typical scenario.

  As described above for other receptors, USEPA's (1998b) chemical-specific absorption factors are conservatively used in this assessment. The generic absorption factors recommended in USEPA (1998b) guidance of 10% for organics and 1% for inorganics are used for all other chemicals.

- **Incidental Ingestion Rate of Ground Water During Outdoor Activities**
  Residents may contact ground water while engaging in outdoor activities that could hypothetically involve the use of ground water from a private well, such as watering a lawn or washing a car. To evaluate this pathway, the adult resident is assumed to use ground water while gardening. The child resident is assumed to be exposed to ground water used in a swimming/ wading pool.

  Under both the high-end and typical scenarios, the adult resident is assumed to ingest 0.05 liters of water per day. This ingestion rate is conservatively based on the amount of water expected to be ingested while swimming, 0.05 L/hour, presented in USEPA (1989) and the expectation that the resident would water the lawn for one hour per day, based on the estimated time spent gardening (USEPA 1997c).

  The child resident is assumed to ingest 0.15 liters per day under the high-end scenario and 0.05 liters per day under the typical scenario. These ingestion rates are based on USEPA guidance for ingestion while swimming (USEPA 1989) and the assumption that a child spends three hours per day swimming/wading under the high-end scenario and one hour per day swimming/wading under the typical scenario (USEPA 1997c).

- **Ingestion Rate of Drinking Water**
  Based on the 90th percentile drinking water ingestion rates provided by USEPA (1989, 1991a), high-end drinking water rates of two L/day for adults and one L/day for children were used for ingestion of drinking water obtained from ground water. For typical exposures, adults are expected to drink 1.4 L/day and children are expected to drink 0.5 L/day, based on average drinking water ingestion rates (USEPA 1989, 1997c).

- **Dermal Contact with Ground Water During Outdoor Activities: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**
  Dermal contact with constituents in water is estimated from the product of the exposed skin surface area and the permeability constant for a chemical. The adult resident is assumed to use ground water for watering the lawn. The assumed exposed skin surface areas while watering the lawn are 5,800 cm^2 for the high-end scenario and 5,000 cm^2 for the typical scenario

(USEPA 1992f). For both the high-end and typical scenarios, the adult resident is expected to water the lawn for one hour per day (USEPA 1997c).

The child resident is assumed to be exposed to ground water in a swimming/wading pool. The assumed skin surface areas are 8,400 cm^2 for the high-end scenario and 7,200 cm^2 for the typical scenario. These are based on the total body surface area of boys and girls, ages one to six (USEPA 1997c). A child resident is assumed to swim/wade for three hours per day and one hour per day for the high-end and typical scenarios, respectively (USEPA 1997c).

Chemical-specific K_p values were estimated using Equation 5.8 from USEPA (1992f), and a default K_p value of 10^{-3} cm/hour was assigned to those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established based on USEPA (1992f).

- **Dermal Contact with Ground Water While Showering or Bathing: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**

  Whole body exposure is used for both the high-end and typical showering/bathing scenarios (i.e., 23,000 and 20,000 cm^2 for adults and 8,400 and 7,200 cm^2 for children).

  Based on USEPA (1997c), the high-end exposure time for a shower is 35 minutes per day and the typical exposure time for a shower is 10 minutes per day. Based on USEPA (1997c), the high-end exposure time for bathing is 45 minutes per bath and the typical exposure time is 20 minutes.

  Chemical-specific K_p values were estimated using Equation 5.8 from USEPA (1992f), and a default K_p value of 10^{-3} cm/hour was assigned to those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established based on USEPA (1992f).

3.4.5.2 Exposure Frequency

- **Frequency of Incidental Ingestion of and Dermal Contact with Soil**

  Under both the typical and high-end scenario, adult and child residents in Area 5A are assumed to have an exposure frequency of 350 days per year (USEPA 1991a).

- **Frequency of Incidental Ingestion of Sediment**

  The adult resident in Area 6 is assumed to ingest sediment from a stream in his yard during periodic removal of dead branches and leaves from the stream. For the high-end scenario, the resident is assumed to clean out the stream one day per month in the Spring (3 months) and Fall (3 months) for a total of 6 days per year. For the typical scenario, the resident is assumed to clean out the stream for one day in the Spring and one day in the Fall for a total of two days per year.

  The child resident is expected to ingest sediment when playing in and around a stream in his yard. A child is only expected to play near the stream when weather conditions make this form of play appealing, i.e., the water and mud are not too cold. According to data compiled by NOAA (1993), mean temperatures in South Bend, Indiana, are about 70 degrees or warmer for only three months per year (i.e., June, July and August), based on 30 years of data. Thus, playing near the stream would be most attractive to children during the summer months. The sediment would not be available for contact when it is frozen or snow covered. According to data compiled by NOAA (1993), the mean temperatures in South Bend, Indiana, are below freezing for three months per year (i.e., December, January and February). Thus, the sediment is not available for contact during the winter. On this basis, it is assumed that the child resident will play near the stream for four days a week during the summer (13 weeks) and one day per week during the Spring (13 weeks) and Fall (13 weeks) for a total of 78 days per year, under the high end scenario. For the typical scenario, the child resident is assumed to play near the stream for four days a week during the summer only for a total of 52 days per year.

- **Frequency of Dermal Contact with Sediment**

  The frequency with which a resident has dermal contact with sediment is assumed to be the same as the frequency a resident may incidentally ingest sediment. Thus, the exposure frequency is six days per year and two days per year for the high-end and typical scenarios, respectively, for the adult resident, and 78 days per year and 52 days per year for the high-end and typical scenarios, respectively, for the child resident.

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air, including Exposure Time (ET) Term**

  The resident is assumed to experience inhalation exposures for 350 days/year for the high-end and typical exposure scenarios, based on USEPA (1991a, p. 5) guidance which states "...the common assumption that workers take two weeks of vacation per year can be used to support a value of 15 days per year spent away from home (i.e., 350 days/year spent at home)." The resident is expected to be home for 24 hours per day for the high end scenario. For the typical scenario, the resident is assumed to be home for 18.4 hours out of a 24 hour day (76% of the time), based on recent USEPA (1997c) guidance which states that residents spend 16.4 hours indoors and 2 hours outdoors at one's residence. This is consistent with USEPA (1997c) guidance which states that the average adult spends 64% of his time at home.

  In addition, hypothetical residential inhalation exposures are assumed to occur during on-Site excavation activities for 10 days/year under the high-end scenario and five days/year under the typical scenario, based on the number of days per year workers are expected to excavate on-Site to maintain underground utility lines. Residential inhalation exposure during excavation activities is only assumed to occur for eight out of 24 hours per day, based on the length of a standard work day.

- **Frequency of Incidental Ingestion of Ground Water During Outdoor Activities**

  For the high-end and typical scenarios, the adult resident is assumed to ingest ground water while watering the lawn for 40 days per year, based on the suggested gardening frequency in USEPA (1992f, 1997c).

  For the high-end scenario, the child resident is assumed to ingest ground water while swimming/wading for 36 days per year, which corresponds to the 90th percentile swimming frequency of young children of 12 days per month from mid-June through mid-September (USEPA 1997c).

  For the typical scenario, the child resident is assumed to swim in a home swimming/wading pool 9 days per year. This corresponds to the 50th percentile swimming frequency of young children of three times per month (USEPA 1997c) from mid-June to mid-September.

- **Frequency of Ingestion of Drinking Water**
  For both the high-end and typical scenarios, the resident is assumed to ingest drinking water for 350 days/year, based on the days per year residents are assumed to spend at home (USEPA 1991a).

- **Frequency of Dermal Contact with Ground Water During Outdoor Activities**
  The frequency with which a resident may contact ground water while outdoors is assumed to be equal to the frequency a resident may ingest water outdoors as described above. Thus, the adult resident is assumed to contact ground water outdoors 40 days per year. The child resident is assumed to contact ground water outdoors 36 days per year under the high-end scenario and 9 days per year under the typical scenario.

- **Frequency of Dermal Contact with Ground Water While Showering/ Bathing**
  For both the high-end and typical scenarios, the adult resident is assumed to shower in ground water for 350 days/year, based on the days per year residents are assumed to spend at home (USEPA 1991a) and an assumed showering frequency of once per day (USEPA 1997c). The child resident (ages 1-6 years) is assumed to take a bath five days per week for the high-end scenario and three days per week for the typical scenario.

- **Frequency of Inhalation of Vapors from Ground Water During Household Use including Exposure Time (ET) Term**
  For both the high-end and typical scenarios, the adult and child residents are assumed to inhale contaminants from ground water in their homes for 350 days/year, based on the days per year residents are assumed to spend at home (USEPA 1991a). For the inhalation pathway, the exposure frequency is adjusted by an exposure time (ET) term to account for the hours per day a receptor is expected to inhale contaminants indoors. For the high-end scenario, the residents are assumed to be in their home 23.3 hours per day based on the 90th percentile value for the estimated time spent indoors at home presented in USEPA (1997c) guidance. For the typical scenario, the residents are assumed to be in their home 16.4 hours per day based on the

50th percentile value for the estimated time spent indoors at home presented in USEPA (1997c) guidance.

3.4.5.3 Exposure Duration

For the high-end scenario, the adult resident is assumed to live adjacent to the Site for 30 years, based on the 90th percentile for individuals living at one residence (USEPA 1989, 1991a). For the typical scenario, the adult resident is assumed to live adjacent to the facility for 9 years, based on the median number of years that individuals live at one residence (USEPA 1989, 1991a). Under both the high-end and typical scenarios, the child resident is assumed to live adjacent to the Site for six years, based on the number of years in the child's one to six year old age group.

3.4.5.4 Body Weight

For both the high-end and typical scenarios, the body weight of the adult resident is assumed to be 70 kg based on the mean adult body weight (USEPA 1997c, 1993a). For both the high-end and typical scenarios, the body weight of the child resident is assumed to be 15 kg based on the mean body weight for a child (USEPA 1991a, 1997c).

3.4.5.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for evaluating carcinogenic risks is equal to a lifetime of 70 years (i.e., 25,550 days). For both the high-end and typical scenarios, the averaging time for evaluating noncarcinogenic effects is equal to the exposure duration in days. For year-round exposures, such as showering or bathing, the averaging time is equal to the number of days in a year multiplied by the number of years of exposure. For seasonal exposures, such as swimming in an outdoor pool, the averaging time is equal to the number of days in the season multiplied by the number of years of exposure. For example, the averaging time for a child swimming/wading scenario is calculated:
(3 months/ 12 months) x (365 days/year) x (6 years), which equals 548 days.

3.4.6 Off-Site Utility Maintenance Worker (Area 5B)

The exposure factors used in the baseline risk assessment for future utility maintenance workers engaged in excavation activities in Area 5B are discussed below.

3.4.6.1 Contact Rates

- **Dermal Contact with Ground Water While Excavating: Exposed Skin Surface Area, Dermal Permeability Coefficient, and Exposure Time**
  The dermal contact rate for water exposures is obtained from the product of the exposed skin surface area and the chemical-specific permeability coefficient. The estimates for exposed skin surface area for the excavation workers are assumed to be the same as those for the routine worker (as described in Section 3.4.1.1). That is, the exposed skin surface area is 5,800 cm^2 for high-end exposures, and 5,000 cm^2 for typical exposures. The entire exposed skin area is conservatively assumed to come in direct contact with ground water during excavation.

  K_p values were estimated using Equation 5.8 from USEPA (1992f), and a default K_p value of 10^{-3} cm/hour was assigned to those inorganic constituents that are not listed in USEPA (1992f). An upper limit of one cm/hour for K_p was established based on USEPA (1992f).

  For the high-end and typical scenarios, the excavation worker is conservatively assumed to be engaged in excavation work that would bring him in contact with ground water for eight hours per day, in Areas 1 and 4B only.

3.4.6.2 Exposure Frequency

- **Frequency of Inhalation of Vapor and Particulates in Ambient Air**
  As noted above, the utility maintenance worker is assumed to be engaged in activities to maintain underground utility lines for 10 days per year under the high-end scenario and five days per year under the typical scenario. Because of the high activity level expected for a utility maintenance worker, and therefore elevated inhalation rate, the exposure frequency is not adjusted by an exposure time (ET) term to account for the hours per day a receptor is at the Site. Thus, the inhalation rate for the utility maintenance worker would correspond to 2.5 m^3/hr.

- **Frequency of Dermal Contact with Ground Water While Excavating**
  The frequency with which a worker may have dermal contact with water while excavating is assumed to be equal to the frequency a utility

maintenance worker may incidentally ingest soil. Thus, the exposure frequency is assumed to be 10 days per year for the high-end scenario and five days/year for the typical scenario.

3.4.6.3 Exposure Duration

For the high-end scenario, the worker is expected to work at the facility for 20 years, based on the 99th percentile for worker tenure at one location (USEPA 1993a). For the typical scenario, the worker is expected to work at the facility for five years, based on the USEPA guidance (USEPA 1993a) central tendency value for worker tenure at one location.

3.4.6.4 Body Weight

For both the high-end and typical scenarios, the body weight of the excavation worker is assumed to be 70 kg, based on the mean adult body weight presented in USEPA (1993a, 1997c).

3.4.6.5 Averaging Times

For both the high-end and typical scenarios, the averaging time for carcinogenic risks is equal to a lifetime of 70 years in days (i.e., 25,550 days). For both the high-end and typical scenarios, the averaging time for noncarcinogenic effects is equal to the exposure duration in days, calculated as the product of the exposure frequency and the exposure duration.

4.0 TOXICITY ASSESSMENT

The primary objectives of a toxicity assessment are to: (1) identify the types of toxic effects associated with chemicals of potential concern; (2) characterize the conditions (e.g., route and duration) of exposure under which these effects might occur; and (3) determine the relationship between the magnitude of human exposure and the potential for adverse health effects. The following sections discuss the compilation of USEPA-derived toxicity values, and approaches to evaluating potential cancer risk and noncancer effects when USEPA-derived toxicity values are unavailable.

4.1 USEPA Toxicity Values

The USEPA Integrated Risk Information System (IRIS) is used as the primary source of USEPA-derived toxicity values for chemicals of potential concern at the ACS NPL Site. When a toxicity value is not available in IRIS for a constituent, the most current version of the USEPA Health Effects Assessment Summary Tables (HEAST) is used to obtain toxicity values. The toxicity values compiled from IRIS are current as of August 1998 (USEPA 1998a). The toxicity values compiled from HEAST are current as of the July 31, 1997 edition (USEPA 1997a).

For evaluating carcinogenic risks associated with the potential exposures at and near the Site, USEPA-derived cancer slope factors (CSFs) and unit risk factors (URFs) are compiled for constituents having a USEPA weight-of-evidence classification of group A, B, or C. The CSFs are 95% upper confidence bounds on the risk per unit dose. The risk of developing cancer from exposure to a chemical substance is expected to be less than the risk calculated using the CSF or URF value.

For evaluating noncarcinogenic effects associated with the potential exposures, USEPA-derived reference doses (RfDs) and reference concentrations (RfCs) are used. The chronic RfD and chronic RfC values represent conservative estimates of the daily exposure which can be received by individuals in the general population, including sensitive subpopulations, that are likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA 1989). The subchronic RfD and subchronic RfC values represent conservative estimates of the daily exposure which can be received by individuals in the general population, including sensitive subpopulations, that are likely to be without an appreciable risk of deleterious effects during a portion of a lifetime (e.g., exposure periods between two weeks and seven years)

[USEPA 1989]. USEPA's derivations of RfDs and RfCs typically incorporate several uncertainty (or modifying) factors which, in combination, can be as large as 10,000-fold.

Oral CSFs and oral RfDs are used for evaluating oral exposures. For evaluating inhalation exposures, URFs and RfCs are used where available. Dermal exposures are evaluated using oral CSFs and oral RfDs, as discussed in Section 4.2.3. Subchronic toxicity values are used for exposures with averaging periods of less than one year (e.g., swimming exposures that occur only during summer months). The toxicity values compiled from IRIS and HEAST are presented in Table 4-1, along with their associated reference citations.

As shown in Table 4-1, IRIS provides several CSFs and URFs for polychlorinated biphenyls (PCBs, including Aroclors 1242, 1248, 1254, and 1260). The cancer potency of PCB mixtures is determined using a tiered approach that depends, in part, on the route of exposure. The "high risk and persistence" CSFs and URFs apply to exposures to PCBs via sediment or soil ingestion, dust inhalation, dermal exposure (if an absorption factor has been applied), and early-life exposures. The "low risk and persistence" CSFs and URFs apply to exposures via ingestion of water-soluble congeners, inhalation of evaporated congeners, and dermal exposure (if no absorption factor has been applied). Table 4-1 provides the upper-bound slope factors for both tiers.

4.2 Constituents Without Published USEPA Toxicity Values

4.2.1 Constituents Without Toxicity Values in IRIS or HEAST

Several of the constituents detected at or near the Site do not have toxicity values in IRIS or HEAST. USEPA's National Center for Environmental Assessment (NCEA) has provided toxicity values for the following constituents without any values in IRIS or HEAST: 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-hexanone, trichloroethene, naphthalene, and cobalt. NCEA has also provided toxicity values for the following constituents which have IRIS and/or HEAST values for some toxicity types, but not for others: benzene, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, chloromethane, ethylbenzene, hexachlorobutadiene, tetrachloroethene, toluene, xylenes (total), and bis(2-ethylhexyl)phthalate.

The toxicity values for the following constituents presented in Table 4-1 are derived from similar chemicals with toxicity values from IRIS, HEAST or NCEA:

- **m,p-Xylene**
  The toxicity values (RfDs) for xylenes (total) are used for the m,p-xylene isomers.

- **o-Xylene**
  The toxicity value (subchronic RfD) for xylenes (total) is used for the o-xylene isomer.

- **Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene**
  These carcinogenic polycyclic aromatic hydrocarbons (PAHs) are assigned oral CSF values following USEPA guidance (1993b), which provides cancer potency values for carcinogenic PAHs relative to benzo(a)pyrene.

- **alpha- and gamma-Chlordane**
  The toxicity values (CSF, URF, RfD, RfC) for Chlordane from IRIS are used for the isomers alpha- and gamma-Chlordane.

- **Chromium (total)**
  In the RI and subsequent characterization studies, chromium was measured as chromium (total), rather than speciated chromium (III) and chromium (VI). Hexavalent chromium, unlike trivalent chromium, is evaluated by USEPA as a human carcinogen. Consistent with the ratio applied in USEPA (1998a), it was assumed that environmental samples from the ACS Site contain six times as much trivalent as hexavalent chromium. Thus, the RfD for Cr(III) is applied to 86% of the total chromium dose and the RfD and slope factor for Cr(VI) are applied to 14% of the total chromium dose.

- **Endosulfan I**
  The toxicity values (RfDs) for Endosulfan are used for Endosulfan I.

4.2.2 Lead

4.2.2.1 Child Lead Exposures

USEPA typically evaluates the health effects of lead in children by using blood lead levels as an index of exposure, rather than through a comparison of lead uptake to an RfD. For evaluating exposure of children to lead in soil, other environmental media, and the diet, USEPA has developed an Integrated Exposure Uptake Biokinetic (IEUBK) model to estimate blood lead levels (USEPA 1994b). Current USEPA Office of Solid Waste and Emergency Response (OSWER) guidance calls for the

establishment of cleanup goals so that a typical child or group of children with similar exposure would have an estimated risk of no more than 5 percent exceeding a blood lead level of 10 μg/dL (USEPA 1996b, 1994c). USEPA (1994c, p. 8) states that "This 10 μg/dL blood lead level is based upon analyses conducted by the Centers for Disease Control and EPA that associate blood lead levels of 10 μg/dL and higher with health effects in children; however, this blood lead level is below a level that would trigger medical intervention." The IEUBK model is used in this assessment to evaluate the potential for elevated (>10 μg/dL) blood lead levels in child residents under current and future land use exposure scenarios.

4.2.2.2 Adult Lead Exposures

Blood lead levels are also used to evaluate exposures of adults to lead. The Occupational Safety and Health Administration (OSHA) non-mandatory criterion for exposed workers is 30 μg/dL blood lead. According to 29 CFR 1910.1025, blood lead levels of workers (male and female) planning to have children should remain below 30 μg/dL, although the permissible level is 40 μg/dL (USDOL 1994). Although the IEUBK model predicts blood lead levels, the model is not appropriate for estimating adult blood lead levels because it is based on a number of pharmacokinetic parameters that are specific to children.

Because the IEUBK model is not applicable to adults, USEPA (1996b) has developed an interim method for assessing risks associated with adult exposures to lead in soil. USEPA's blood lead model for adults estimates blood lead levels resulting from exposure to lead at a Site as the sum of a baseline component and a Site-related component. The baseline component accounts for non-Site-related (i.e., background) uptake of lead through diet, air, water, and soil/dust. The Site-related contribution to blood lead level is predicted by correlating Site-related uptake of lead from soil with blood lead level using a biokinetic slope factor (BKSF). The calculation of total blood lead level in an adult is calculated as follows (USEPA 1996b):

$$PbB_{adult,central} = PbB_{adult,0} + \frac{PbS \cdot BKSF \cdot IR_s \cdot AF_s \cdot EF_s}{AT} \qquad \textbf{Equation (6)}$$

where:

$PbB_{adult,central}$ = central estimate of blood lead levels in adults exposed to Site soils (μg Pb/dL blood);

$PbB_{adult,0}$ = typical or baseline blood lead level in adults in the absence of exposures to the Site (μg Pb/dL blood);

PbS = average Site soil lead concentration (mg/kg);

BKSF = biokinetic slope factor relating theoretical increase in typical adult blood lead level to average daily lead uptake (μg Pb/dL blood increase per μg Pb/day);

IR_s = ingestion rate of soil (g/day)

AF_s = gastrointestinal absorption fraction for lead ingested from soil (unitless);

EF_s = exposure frequency for contact with Site soils (days/year); and

AT = averaging time; the total period during which Site soil contact may occur (days/year).

The blood lead level calculated using the above empirical model, $PbB_{adult,central}$, represents a geometric mean corresponding to typical exposure patterns and typical lead concentrations in soil. Variations in blood lead level within an adult population (e.g., workers) are estimated by multiplying the calculated geometric mean blood lead level by an appropriate geometric standard deviation (GSD), as follows:

$$PbB_{adult,0.95} = PbB_{adult,central} \cdot GSD_{adult}^{z} \qquad \textbf{Equation (7)}$$

where:

$PbB_{adult,0.95}$ = 95th percentile blood lead level among adults having exposures to the specified Site soil concentration, i.e., there is a 95 percent likelihood that an adult who experiences such exposures would have a blood lead level no greater than $PbB_{adult,0.95}$ (μg Pb/dL blood);

$PbB_{adult,central}$ = central estimate of blood lead levels in adults exposed to Site soils (μg Pb/dL blood);

GSD_{adult} = geometric standard deviation of blood lead in an adult population (unitless); and

z = standard normal deviate used to calculate a specific percentile from a lognormal distribution of blood lead levels (unitless).

Equation (7) can be refined to calculate the percentile of a worker population associated with a target blood lead level (e.g., 30 μg/dL), by calculating the z value as follows:

$$z\ value = \frac{\log\ (Target\ PbB_{adult,\ percentile}) - \log\ (PbB_{adult,\ central})}{\log\ (GSD_{adult})}$$ **Equation (8)**

The probability that a blood lead level of an adult exposed to lead exceeds the target blood lead level can be determined by looking up the percentile corresponding to the z value in a standard normal distribution table.

In order to protect potential fetuses of exposed workers, USEPA (1996b) guidance includes an additional parameter, $R_{fetal/maternal}$, in the adult blood lead model for female workers of child bearing age, as follows:

$$PbB_{fetal,0.95} = PbB_{adult,central} \cdot GSD_{adult}^{z} \cdot R_{fetal/maternal}$$ **Equation (9)**

where:

$PbB_{fetal\ .0.95}$ = 95th percentile blood lead level among fetuses born to exposed workers, i.e., there is 95 percent likelihood that a fetus born to an exposed worker would have a blood lead level no greater than $PbB_{fetal\ .0.95}$ (μg Pb/dL blood);

$PbB_{adult.central}$ = central estimate of blood lead levels in adults exposed to Site soils (μg Pb/dL blood);

GSD_{adult} = geometric standard deviation of blood lead in an adult population (unitless);

z = standard normal deviate used to calculate a specific percentile from a lognormal distribution of blood lead levels (unitless); and

$R_{fetal/maternal}$ = theoretical constant of proportionality between fetal blood lead level at birth and maternal blood lead level (unitless).

Equation (9) can also be refined to calculate the percentile of a fetus population associated with a target blood lead level (e.g., 10 μg/dL), by first calculating the z value and then

looking up the percentile corresponding to the z value in a standard normal distribution table:

$$z = \frac{\log(Target\ PbB_{fetus,percentile}) - \log(PbB_{fetus,central} * R_{fetal/maternal})}{\log(GSD_{adult})}$$

Equation (10)

In this baseline risk assessment, USEPA's adult blood lead model is used to evaluate the theoretical blood lead levels in current and future routine workers (men and women) and future construction workers (men and women). The model is also used to evaluate theoretical blood lead levels in potential fetuses of current and future female routine workers of child-bearing age, future female construction workers of child-bearing age, and current and future female trespassers (age 9 to 18) at the ACS Site, due to exposure to lead in on-Site soil.

USEPA (1996b) recommends that the adult blood lead model not be used for scenarios in which the exposure duration is less than 90 days, or for scenarios in which the exposure frequency is less than one day/week. Since the high-end exposure frequency for the excavation worker is assumed to be 10 days/year (see Section 3.4.2.2), the USEPA adult blood lead model is not used to assess the theoretical blood lead levels in this population.

The exposure parameters to be used in the adult blood lead model for workers and trespassers are the same as the default exposure parameters presented in USEPA (1996b) guidance, with the exception of the following Site-specific adjustments:

- Baseline blood lead level ($PbB_{adult,0}$): A geometric mean baseline blood lead level of 2.6 μg/dL is used for the workers (men and women). This value is derived from data for white males and females ages 17 to 65 from Phase 1 of the Third National Health and Nutritional Examination Survey (NHANES III). The baseline blood lead level for white males and females ages 17 to 65 is used since the ethnicity of the majority of the population in Griffith, Indiana, and the majority of the workforce at the ACS Site is white, and this age group is representative of the working years.

  A geometric mean baseline blood lead level of 1.7 μg/dL is used for the female workers of child-bearing age and female trespassers in order to predict theoretical blood lead levels in potential fetuses. This value is derived from data for white females ages 17 to 45 from Phase I of NHANES III. The baseline blood lead level of white females ages 17 to 45 is used since the majority of the population in Griffith,

Indiana, and the majority of the workforce at the ACS Site is white, and this age group is representative of the child-bearing years. It should be noted that use of this value for female trespassers (age 9 to 18) is considered conservative, given that the geometric mean blood lead level for white females between the ages of 12 and 19 is reported to be 1.0 μg/dL, based on Phase 1 of the NHANES III data (Brody et al. 1994).

- Average Site soil lead concentration (PbS): Lead concentrations in surface soil (0 to 2 feet below ground surface) in Area 1 are used for current exposures during routine activities. Because the future composition of surface soil cannot be predicted with certainty, and may be some combination of what is currently considered surface and subsurface, estimates of potential future surface lead concentrations are based on: (1) current surface soil concentrations only (0 to 2 feet); and (2) current subsurface soil concentrations only (2 to 10 feet). In Area 2, surface concentrations have not been characterized due to ongoing remediation investigations and activities, and the presence of a clay cap (at least one-foot deep). Therefore only the average subsurface soil concentration is used to evaluate future exposures in Area 2. Lead concentrations have not been measured in subsurface soil from Area 4B, so only the average surface soil concentration is used to evaluate future exposures in Area 4B.

  Under the future construction scenario, it is expected that exposure to both surface and subsurface soils will occur. Therefore, estimates of potential future lead concentrations for the construction scenario are based on: (1) the average of current surface and subsurface soil concentrations from 0 to 4 feet, weighted for the 0 to 2 foot and 2 to 4 foot intervals; and (2) the average of current surface and subsurface soil concentrations from 0 to 10 feet, weighted for the 0 to 2 foot and 2 to 10 foot intervals.

- Exposure Frequency (EF_s): An exposure frequency of 219 days per year is used for the routine workers (men and women) and for female routine workers of child-bearing age, based on the typical Site-specific exposure frequency estimated for routine workers as described in Section 3.4.1.2. An exposure frequency of 65 days per year is used for the construction workers (men and women) and for female construction workers of child-bearing age. An exposure frequency of 12 days per year is used for the trespassers, based on the typical Site-specific exposure frequency estimated for trespassers as described in Section 3.4.4.2.

- Averaging Time (AT): An averaging time of 91 days is used for the trespassers, based on the typical Site-specific averaging time estimated for trespassers as described in Section 3.4.4.5.

- Ingestion Rate (IR_s): A soil ingestion rate of 0.1 g/day (100 mg/day) is used for construction workers (men and women) and for female construction workers of child-bearing age, based on the typical soil ingestion rate of 100 mg/day for construction workers described in Section 3.4.3.1.

4.2.3 Route-to-Route Extrapolation

USEPA-derived dermal toxicity values are not available for any chemical. Therefore, a quantitative evaluation of cancer risk and noncancer effects for this route of exposure is not possible without performing independent evaluations of toxicity data in the open literature to derive toxicity values, or using toxicity values available for another route of exposure to approximate toxicity values for dermal exposure (USEPA 1989). Given the large number of chemicals evaluated at the ACS Site, this baseline risk assessment is based on a route-to-route extrapolation using available USEPA-derived toxicity values to allow a quantitative analysis of the dermal exposure pathways. For the analysis, oral CSFs and RfDs are used to evaluate dermal exposures.

Oral toxicity values may be based on either administered or absorbed doses. USEPA (1989) recommends that oral toxicity values which are expressed as administered doses be adjusted to absorbed doses for evaluation of the dermal pathway. Such adjustment should be performed when "a scientifically defensible data base exists and demonstrates that the gastrointestinal absorption of the chemical in question, from a medium similar to the one employed in the critical study, is significantly less than 100% (e.g., 50%)." (USEPA 1997b). USEPA (1997b) recommends a cutoff of 50% absorption to reflect the variability in the analysis of absorption values, and provides recommended gastrointestinal (GI) absorption values for several chemicals. Cadmium is the only chemical that meets the criterion of less than 50% GI absorption (with approximately 3-5% absorption from food and 5% absorption from water). However, the oral toxicity criteria for cadmium are based on absorbed doses: the RfDs for diet and water were estimated assuming 2.5% absorption from diet and 5% absorption from water, respectively. Therefore, in this assessment, oral toxicity criteria are used without adjustment to evaluate dermal exposures.

5.0 RISK CHARACTERIZATION

This section provides a characterization of the potential human health risks associated with the exposure scenarios evaluated in Section 3, using the toxicity values discussed in Section 4. For all constituents except lead, the potential cancer risks and noncancer effects are evaluated in Section 5.1. Potential exposures to lead are evaluated in Section 5.2. Uncertainties associated with the risk characterization are presented in Section 5.3.

5.1 Cancer Risks and Noncancer Effects

Substances classified as potential carcinogens are assumed by USEPA to pose a cancer risk at all finite exposure levels. In characterizing cancer risks, therefore, a "no-threshold" assumption is generally applied by USEPA for all potentially carcinogenic substances. Although the "no-threshold" assumption may not apply for some classes of carcinogens that act through a mechanism that requires a threshold dose to be exceeded prior to initiation of the carcinogenic process, USEPA's "no-threshold" assumption is conservatively applied for all potential carcinogens in this baseline risk assessment. Actual risks are anticipated to be less than those estimated using the "no-threshold" approach and USEPA toxicity values.

Given the assumed "no threshold" approach for evaluating substances classified as carcinogenic, USEPA characterizes cancer risk as the upper bound probability of developing cancer as a result of lifetime exposure to a substance. Thus, estimates of lifetime average daily dose (LADD) for each constituent for each route of potential exposure are multiplied by the route-specific cancer slope factor (CSF) or Unit Risk Factor (URF) for the constituent to estimate hypothetical incremental lifetime cancer risk, as follows:

$$Cancer\ Risk = LADD_{route} \cdot CSF_{route} \quad or \quad LADD_{route} \cdot URF_{route} \qquad \textbf{Equation (11)}$$

Based on the "no-threshold" approach, the potential cancer risk associated with exposure to a carcinogenic substance is zero only if the exposure is zero. A 1 in 10,000 (1×10^{-4}) cancer risk indicates that an exposed individual is estimated to have an incremental risk of developing cancer of approximately 1 in 10,000 over a lifetime, as a result of the specific exposure. To put these risks into some context, in the United States, "men have a 1 in 2 lifetime risk of developing cancer, and for women the risk is 1 in 3" (American Cancer Society 1997).

In evaluating the potential for adverse noncancer health effects, USEPA generally relies on a hazard quotient approach. The hazard quotient (HQ) is the ratio of the calculated dose to the dose below which adverse effects are not anticipated. If the HQ is less than or equal to 1, it is assumed that there is little or no potential for deleterious effects as a result of the exposure. If the HQ exceeds 1, it is assumed that the potential exists for noncancer health effects to occur as a result of the exposure. It should be emphasized that an HQ value of greater than 1 does not indicate that adverse health effects are expected to occur, but rather that they have the potential to occur, and that a closer evaluation may be warranted.

To calculate an HQ value, the estimated average daily dose (ADD) for each constituent for each route of potential exposure is divided by the route-specific noncancer reference dose (RfD) or reference concentration (RfC) for the constituent, as follows:

$$Hazard\ Quotient = \frac{ADD_{route}}{RfD_{route}} \quad or \quad \frac{ADD_{route}}{RfC_{route}} \qquad \textbf{Equation (12)}$$

Central tendency and high-end estimates of LADDs and ADDs used in calculating potential cancer risks and adverse noncancer effects have been calculated using the central tendency and high-end exposure factors presented in Section 3.3, and are presented separately for each Area in Appendix D. Corresponding central tendency and high-end estimates of potential cancer risks and HQ values are also presented in Appendix D.

Both central tendency and high-end estimates of cancer risk and HQ values have been calculated to account for potential variabilities in doses received across a potentially exposed population. Potential variabilities in susceptibility (i.e., toxicity) across the exposed population are addressed by using USEPA toxicity values in calculating both the central tendency and high-end estimates. These USEPA toxicity values are developed using approaches which are intended to be protective of especially susceptible members of the general population, and are thus considered to be conservative, i.e., more likely to overestimate than to underestimate risk. For example, RfDs and RfCs typically incorporate an uncertainty factor of 10 to account for the presence of potentially susceptible individuals, such as children or the elderly, while CSFs and URFs are based on the 95th upper confidence limit (UCL) of the estimated cancer potency.

Potential cancer risk and noncancer effects associated with cumulative exposure to the combination of constituents at each Area are estimated following USEPA guidance (USEPA 1989), as follows:

$$Cancer\ Risk_{cumulative} = \sum Cancer\ Risk_i \qquad \textbf{Equation (13)}$$

$$HI = \sum HQ_i \qquad \textbf{Equation (14)}$$

where:

$Cancer\ Risk_{cumulative}$	=	cumulative cancer risk from all constituents
$Cancer\ Risk_i$	=	cancer risk for the *i*th constituent
HI	=	cumulative hazard index from all constituents
HQ_i	=	hazard quotient for the *i*th constituent

According to USEPA (1989, 1991b), the cumulative baseline cancer risk and hazard index (HI) for a Site should include all media and pathways that the high-end exposure scenario indicates are appropriate to combine. However, according to USEPA guidance, high-end cancer and noncancer risk estimates for more than one pathway should *not* be combined unless an individual is likely to consistently face the high-end exposure via more than one pathway simultaneously. As a conservative measure, cumulative cancer risks and HI values have been calculated by summing across all exposure pathways under each scenario in this baseline risk assessment.

As discussed in USEPA (1989), "application of the hazard index equation to a number of compounds that are not expected to induce the same type of effects or that do not act by the same mechanism, although appropriate as a screening-level approach, could overestimate the potential for effects" (p. 8-14). Thus, consistent with USEPA (1989) guidance, exposures to compounds are segregated by effect and mechanism of action in those instances where the HI value calculated by summary across all constituents exceeds 1.0 in the risk assessment.

The central tendency and high-end estimates of cumulative cancer risks and HIs for each potentially exposed population are presented by route of exposure and by Area in Tables 5-1 through 5-3. Uncertainties associated with the risk characterization are discussed in Section 5.3. It should be emphasized that the current water exposures in off-Site Area 5A are based on the maximum drinking water concentrations from PW-S, since the concentrations in PW-S result in the maximum carcinogenic risks.

5.1.1 Current Exposure Scenarios

The central tendency and high-end estimates of cumulative cancer and noncancer risks for current scenarios are shown in Tables 5-1a and 5-1b, respectively. As shown in Table 5-1a, the central tendency estimates of cumulative cancer risk are approximately two-in-one-hundred-thousand (2×10^{-5}) or lower for all on-Site and off-Site current exposure scenarios. The estimated cumulative cancer risks under the high-end exposure scenarios, shown in Table 5-1b, are approximately nine-in-one-hundred-thousand (9×10^{-5}) or lower for all scenarios. These risks are driven by the detection of arsenic in drinking water, at concentrations below the Maximum Contaminant Level (MCL) set by USEPA, and below the average concentration in Indiana ground water. Central tendency and high-end risks are at or below approximately three-in-one-hundred-thousand (3×10^{-5}) if arsenic in drinking water is not included.

Central tendency estimates of HI (shown in Table 5-1a) are all at or below 1 for all current exposure scenarios. The high-end estimates of HI values for the current scenarios are discussed below:

- For current workers in Area 1, trespassers in Areas 4A and 4B, and adult residents in Areas 5A and 6, cumulative HI values are at or below 1.

- For current child residents in Area 5A, the cumulative high-end HI value is approximately 3. The HI in Area 5A is primarily driven by ingestion of antimony, PCBs, and arsenic in soil, and ingestion of arsenic and barium in private well water. These chemicals have different target organs; antimony affects blood chemistry, PCBs affect the immune system, arsenic affects the skin, and barium affects blood pressure. The HI for each of these target organs and effects is less than one. In addition, the concentrations of antimony and PCBs in soil are below USEPA's generic soil screening levels for residential soil ingestion, and the maximum arsenic concentration in soil (3.4 mg/kg) is within background levels for Indiana (2 to 15 mg/kg, Dragun 1991). Furthermore, concentrations of arsenic and barium in private well water are below USEPA's Maximum Contaminant Levels (MCLs) for drinking water.

- For current child residents in Area 6, the cumulative high-end HI value is approximately 1 due to ingestion of arsenic and antimony in sediment and inhalation of benzene vapor from the Site. These chemicals have different target organs: arsenic affects the skin, and antimony and benzene affect the blood. The HI for each of these target organs is less than one. In addition, the concentration of antimony in

soil is below USEPA's generic soil screening level for residential soil ingestion, and the maximum arsenic concentration in soil (3.4 mg/kg) is within background levels for Indiana (2 to 15 mg/kg, Dragun 1991).

5.1.2 Future Exposure Scenarios

The central tendency and high-end estimates of cumulative cancer and noncancer risk for future scenarios are shown in Tables 5-2a and 5-2b, respectively. The primary distinctions between the current and future scenarios are as follows:

- In the future, Areas 2, 3, 4B, and 5B are assumed to be developed for industrial use, and therefore the potential for future worker exposures exists.

- In the future, surface soils may consist of some mixture of current surface (0-2 ft) and subsurface (2-10 ft) soils as a result of hypothetical future excavation activities. Because the extent of such mixing cannot be predicted, future surface soil concentrations in on-Site areas are conservatively estimated using two approaches: (1) assuming future surface soil concentrations equal current surface soil concentrations; and (2) assuming future surface soil concentrations equal current subsurface soil concentrations. Both of these approaches are evaluated for Areas 1 and 3. Surface soil concentrations have not been measured in Area 2 due to ongoing Site investigation and remediation activities and due to the presence of a clay cap (applied in the 1970's to cover waste, and another one foot layer applied in the past year to reduce water infiltration). Thus, for Area 2, only subsurface soil concentrations are available to estimate future soil exposures. No chemicals were detected in the subsurface soil sample from Area 4B (analyzed for organic compounds only), which is consistent with the fact that this area is undeveloped and no waste disposal occurred in this area. Thus, for Area 4B, only surface samples are available to estimate future soil exposures.

- Future risks of excavation workers are estimated assuming that excavation workers do not wear personal protective equipment.

- In the future, fences currently surrounding Areas 1, 2, and 3 may be removed or not adequately maintained, increasing the potential for trespassing.

As shown in Table 5-2a, the central tendency estimates of cumulative potential cancer risk are approximately nine-in-one-hundred-thousand (9×10^{-5}) or lower for all on-Site and off-Site future exposure scenarios. The high-end estimates of cumulative risk for the future scenario are discussed below:

- For Area 1, potential future cumulative cancer risks are at or below 4×10^{-4}. The greatest hypothetical risks are to workers who are exposed to subsurface soils (i.e., routine workers at 4×10^{-4}, and utility maintenance workers at 4×10^{-4}). For routine workers evaluated using subsurface soil concentrations, the potential cancer risk is primarily driven by incidental ingestion of and dermal contact with PCBs and by inhalation of benzene and other volatile organic compound vapors in subsurface soils assumed to be moved to the surface in the future. For utility maintenance workers wearing no personal protective equipment, the potential cancer risk is primarily driven by dermal contact with benzene in upper aquifer ground water while excavating. Potential cumulative cancer risks under the future routine worker scenario drop to 1×10^{-4} if it is assumed that surface soil concentrations in Area 1 remain at current concentrations, and are driven by hypothetical exposures to lower aquifer ground water. Specifically, under the assumption that wells are installed in the lower aquifer and used for outdoor landscaping and for daily showers, hypothetical future ground water exposures pose a risk of approximately 1×10^{-4} (from benzene, vinyl chloride, and arsenic).

- For Area 2, future potential cancer risks are at or below 6×10^{-4}. The greatest hypothetical risks are to routine workers who are exposed to subsurface soils (i.e., routine workers at 6×10^{-4}). The potential cancer risk is primarily driven by incidental ingestion of and dermal contact with PCB-contaminated subsurface soils (assumed to be present at the surface in the future). Hypothetical cancer risks for construction workers are less than or equal to 7×10^{-5} for both 10-ft and 4-ft excavations.

- For Area 3, future potential cancer risks are at or below 4×10^{-4}. The greatest hypothetical risks are to routine workers under both approaches for soil (i.e., 4×10^{-4} when subsurface soil concentrations are used, and 2×10^{-4} when surface soil concentrations are used). Using either set of concentrations, the potential cancer risk is primarily driven by incidental ingestion of and dermal contact with

PCB-contaminated soils and by inhalation of benzene, trichloroethene, and other organic compound vapors. Hypothetical cancer risks for construction workers are less than 4×10^{-5} for both 10-ft and 4-ft excavations.

- For Area 4A, future potential cancer risks to trespassers are approximately 7×10^{-6}, primarily driven by ingestion of and dermal contact with PCB-contaminated sediment.

- For Area 4B, future potential cancer risks are at or below 4×10^{-4}. The greatest hypothetical risks are to utility maintenance workers exposed to upper aquifer ground water during excavation activities, primarily due to dermal contact with benzene in upper aquifer water. The potential cancer risk for routine workers is approximately 2×10^{-4}, and driven by exposures to lower aquifer ground water. Specifically, under the assumption that wells are installed in the lower aquifer and used for outdoor landscaping and for daily showers, ground water exposures account for just over 1×10^{-4} of the total risk (from benzene, vinyl chloride, and arsenic).

- For Area 5B, future potential cancer risks to workers are approximately 3×10^{-5}, from dermal contact with benzene in upper aquifer water during excavation activities.

- For Area 5A, the highest high-end hypothetical future cancer risk estimated for off-Site residents is 1×10^{-4}, driven by ingestion of arsenic in lower aquifer ground water. The concentration of arsenic, at less than 5 μg/L, is well below the Federal MCL for arsenic in drinking water (i.e., 50 μg/L). If arsenic is excluded, the highest hypothetical risk for off-Site residents drops to approximately 5×10^{-5}.

- For Area 6, future potential cancer risks to off-Site residents are less than or equal to 5×10^{-5}, primarily from ingestion of benzo(a)pyrene and arsenic in sediment, and inhalation of benzene and bis(2-chloroethyl)ether in vapors from the Site. However, several of the sediment samples were collected near a road over one-half mile from the Site, and there is no indication that the sediment concentrations are Site-related.

For future central tendency exposure scenarios, (shown in Table 5-2a), estimates of HI are at or below twenty. The central tendency HI values are less than the high-end HI values, and the central tendency HI values are driven by the same chemicals as the high-end HI values. High-end HI values for the future scenario are discussed below:

- For Area 1, cumulative high-end HI values range from 0.05 to 30. The greatest potential noncancer risks are to utility maintenance workers who are exposed to upper aquifer ground water while excavating. The potential noncancer HI for utility maintenance workers wearing no personal protective equipment is primarily driven by inhalation of and dermal contact with benzene from exposed upper aquifer ground water while excavating. For routine workers, the noncancer HI of 6 is primarily driven by ingestion of and dermal contact with PCBs and by inhalation of benzene and other volatile organic vapors in subsurface soils assumed to be moved to the surface in the future. An HI of less than 1.0 is calculated for use of the lower aquifer for landscaping and showering.

- For Area 2, cumulative high-end HI values range from 0.01 to 9. The greatest potential noncancer risks are to workers who are exposed to subsurface soils (i.e., routine workers at an HI of 6, utility maintenance workers at an HI of 9, construction workers with excavation to a depth of 10 feet at an HI of 7). For all workers, the noncancer HI is primarily driven by ingestion of and dermal contact with PCBs in subsurface soils (assumed to be present at the surface in the future). For routine workers, the potential noncancer HI is also driven by inhalation of benzene and other volatile organic vapors in subsurface soil assumed to be moved to the surface in the future. An HI of less than 1.0 is calculated for routine workers from use of the lower aquifer for landscaping and showering.

  A cumulative high-end HI value of 2 is calculated for construction work involving excavation to a depth of 4 feet, due to ingestion of and dermal contact with PCBs and antimony in soil. These chemicals have different target organs: PCBs affect the immune system, and antimony affects the blood. The HIs for each of these target organs and effects is equal to or less than 1.

- For Area 3, cumulative high-end HI values range from 0.4 to 7. The greatest potential noncancer risks are to workers who are exposed to subsurface soils (i.e., routine workers at an HI of 7, utility maintenance workers at an HI of 7, construction workers with excavation to a depth of 10 feet at an HI of 5). For all

workers, the noncancer HI is primarily driven by ingestion of and dermal contact with PCBs and antimony in subsurface soils (assumed to be present at the surface in the future). For routine workers, the potential noncancer HI is also driven by inhalation of benzene and other volatile organic vapors in subsurface soil assumed to be moved to the surface in the future. An HI of less than 1.0 is calculated for routine workers from use of the lower aquifer for landscaping and showering.

A cumulative high-end HI value of 4 is calculated for construction work involving excavation to a depth of 4 feet, due to ingestion of and dermal contact with PCBs, antimony, arsenic, barium, and zinc in soil. These chemicals have different target organs: PCBs affect the immune system; antimony, barium, and zinc affect the blood; and arsenic affects the skin. The HI for blood effects, immune effects, and skin effects are each less than one.

- For trespassers in Area 4A, the cumulative high-end HI value is approximately 0.2. This noncancer risk is driven primarily by ingestion of and dermal contact with PCBs in sediment.

- For Area 4B, cumulative high-end HI values range from 0.2 to 20. The greatest potential noncancer risks are to utility maintenance workers who are exposed to upper aquifer ground water while excavating. The potential for noncancer effects is primarily driven by inhalation of benzene vapors from upper aquifer water (HI of 16 from benzene inhalation). An HI of less than 1.0 is calculated for use of the lower aquifer for landscaping and showering.

- For utility maintenance workers in Area 5B, the cumulative high-end HI value is approximately 1. This noncancer risk is driven primarily by inhalation of benzene vapors from upper aquifer water exposed during utility maintenance activities.

- The highest cumulative high-end HI value for off-Site residents is 6 for child residents in Area 5A. The HI in Area 5A is primarily driven by ingestion of antimony, PCBs, and arsenic in soil, and ingestion of arsenic and barium in lower aquifer water. These chemicals have different target organs; antimony affects blood chemistry, PCBs affect the immune system, arsenic affects the skin, and barium affects blood pressure. The HI for each of these target organs and

effects is equal to or less than one. In addition, the concentrations of antimony and PCBs in soil are below USEPA's generic soil screening levels for residential soil ingestion, and the maximum arsenic concentration in soil (3.4 mg/kg) is within background levels for Indiana (2-15 mg/kg, Dragun 1991). Furthermore, concentrations of arsenic and barium in lower aquifer water are all below USEPA's Maximum Contaminant Levels (MCLs) for drinking water, and below the average concentrations in Indiana ground water.

- In Area 6, the highest cumulative high-end HI value is 1 for child residents. This noncancer risk is driven primarily by ingestion of arsenic and antimony in sediment and inhalation of vapors from the Site.

5.2 Blood Lead Levels

5.2.1 Child Blood Lead Levels

Version 0.99d of USEPA's IEUBK model is used in this assessment to evaluate blood lead levels in child residents in Areas 5A and 6 under both current and future exposure scenarios. The following Site-specific exposure concentrations were evaluated for use in the IEUBK model to assess potential exposures to lead in air, soil, and drinking water in Areas 5A and 6.

- Air: The maximum estimated off-Site air concentration under the current scenario in Area 5A is 0.0009 $\mu g/m^3$, based on emissions from on-Site Areas during routine activities. The maximum estimated off-Site air concentration under the future scenario in Area 5A is 0.04 $\mu g/m^3$, based on emissions from on-Site Areas during construction activities. These estimated air concentrations are significantly lower than the default ambient air concentration of 0.1 $\mu g/m^3$ presented in the IEUBK model.

  The maximum estimated off-Site air concentration under the current scenario in Area 6 is 0.0002 $\mu g/m^3$, based on emissions from on-Site Areas during routine activities. The maximum estimated off-Site air concentration under the future scenario in Area 6 is 0.01 $\mu g/m^3$, based on emissions from on-Site Areas during construction activities. These estimated air concentrations are significantly lower than the default ambient air concentration of 0.1 $\mu g/m^3$ presented in the IEUBK model.

- Drinking Water: The estimated drinking water concentration for current exposures in Area 5A is 12.3 $\mu g/L$, based on the highest average lead concentration detected in

residential private wells in Area 5A. This value is the average of three water samples collected from PW-02 (also known as PW-D). It should be noted that the water sample collected from PW-07 contained a higher lead concentration (41.7 μg/L) than those detected in PW-02. However, PW-07 is a closed well at an industrial property, where children are not expected to ingest the water.

The estimated drinking water concentration for future exposures in Area 5A is 6.2 μg/L, based on the highest average lead concentration detected in lower aquifer monitoring wells in Area 5A. The highest average lead concentration detected in upper aquifer wells in Area 5A is 18.5 μg/L. Due to state regulations and the shallow depth to the clay layer in Area 5A, no wells are expected to be installed in the upper aquifer. It should be noted that concentrations in both aquifers, on average, are below the Federal Action Level for lead in drinking water (15 μg/L).

Due to the direction of ground water flow, Site-related constituents are not expected to be present in ground water in Area 6.

- Soil: The average of the two residential soil samples collected in Area 5A is 65 mg/kg. This concentration is less than the default soil lead concentration of 200 mg/kg in the IEUBK model.

  Soil samples were not collected in Area 6. However, lead was detected in three sediment samples collected in Area. The average lead concentration in sediment in Area 6 is 71 mg/kg. This concentration is less than the default soil lead concentration of 200 mg/kg presented in the IEUBK model.

Under the current exposure scenario in Area 5A, USEPA default exposure parameters (including an air concentration of 0.1 $\mu g/m^3$ and a soil concentration of 200 mg/kg) are conservatively used in the IEUBK model, with the exception of drinking water concentrations. The results of the IEUBK model for current exposures in Area 5A is depicted in Figure 5-1. Based on the results of the IEUBK modeling, the probability that children that are exposed to an average drinking water concentration of 12.3 μg/L from a residential well would have blood lead levels greater than 10 μg/dL is 3.45 percent. Thus, at least 95 percent of the children are calculated to have blood lead levels less than USEPA's blood lead level of concern for children (10 μg/dL), based on measured lead concentrations in residential wells.

For the future exposure scenario in Area 5A, USEPA default exposure parameters (including an air concentration of 0.1 $\mu g/m^3$ and a soil concentration of 200 mg/kg) are conservatively used in the IEUBK model, with the exception of drinking water

concentrations. The results of the IEUBK model for future exposures in Area 5A are depicted in Figures 5-2. Based on the results of the IEUBK modeling, the probability that children that are exposed to an average drinking water concentration of 6.2 μg/L from the lower aquifer would have blood lead levels greater than 10 μg/dL is 2 percent. Thus, at least 95 percent of the children are calculated to have blood lead levels less than USEPA's blood lead level of concern for children (10 μg/dL), based on measured lead concentrations in the lower aquifer off-Site.

For Area 6, the only potential routes of exposure to lead from the Site is via air emissions or contact with sediment. As noted above, air concentrations for current and future exposures in Area 6 are less than the default ambient air concentration of 0.1 $\mu g/m^3$ presented in the IEUBK model. In addition, the estimated sediment concentration is less than the default soil lead concentration presented in the IEUBK model. Thus, increased blood lead levels in children due to inhalation of ambient air or contact with sediment in Area 6 are not expected.

5.2.2 Adult Blood Lead Levels

USEPA's (1996b) adult blood lead model is used to evaluate the potential for increased blood lead levels in current and future routine workers and future construction workers exposed to surface soil at the ACS Site, as well as the potential for increased blood lead levels in fetuses of current and future female routine workers of child bearing age, future female construction workers of child bearing age and current and future female trespassers (age 9 to 18) exposed to surface soil at the ACS Site. The blood lead level calculated for adults using the method described in Section 4.2.2.2 is intended to represent a geometric mean corresponding to typical exposure patterns and typical lead concentrations in the environmental media contacted at a Site. As described in Section 4.2.2.2, variations in blood lead level within an adult population (e.g., workers) are then estimated by multiplying the calculated geometric mean with an appropriate geometric standard deviation (GSD). The percentile of a population expected to exceed a target blood lead level for a specific population (i.e., 30 μg/dL or 40 μg/dL for workers and 10 μg/dL for fetuses) was calculated by solving for the z value and then looking up the percentile corresponding to the z value in a standard normal distribution table.

Table 5-4 shows the percentage of current and future workers (men and women) and future construction workers (men and women) exposed to Site soils that are expected to exceed a target blood lead level of 30 μg/dL. Table 5-4 also shows the percentage of potential fetuses of current and future female routine workers of child bearing age, future

female construction workers of child bearing age and female trespassers exposed to Site soils that are expected to exceed a target blood lead level of 10 μg/dL.

5.2.2.1 Percent of Worker Blood Lead Levels Exceeding Target Blood Lead Level

According to 29 CFR 1910.1025, the blood lead level of workers (male and female) planning to have children should remain below 30 μg/dL, although the permissible level is 40 μg/dL. As shown in Table 5-4, less than 2 percent of the routine workers (men and women) exposed to Site soils are theoretically calculated to exceed the OSHA non-mandatory criterion of 30 μg/dL blood lead in Areas 1, 2, and 4B. In Area 3, 11 percent of the future routine workers exposed to Site soils within the 0 to 2 foot interval are theoretically calculated to have a blood lead level greater than the non-mandatory criterion of 30 μg/dL; however, only 4 percent of these workers are expected to exceed the permissible level of 40 μg/dL. Only 1 percent of the future routine workers exposed to Site soils within the 2 to 10 foot interval are theoretically calculated to have a blood lead levels greater than 30 μg/dL.

As shown in Table 5-4, 5 percent or less of the future construction workers (men and women) exposed to Site soils are theoretically calculated to exceed the OSHA non-mandatory criterion of 30 μg/dL blood lead in Area 2. In Area 3, 34 percent of the future construction workers exposed to Site soils within the 0 to 4 foot interval are theoretically calculated to have a blood lead level greater than the non-mandatory criterion of 30 μg/dL; however, only 18 percent of these workers are expected to exceed the permissible level of 40 μg/dL. Eighteen percent of the future construction workers exposed to Site soils within the 0 to 10 foot interval are theoretically calculated to have a blood lead levels greater than the non-mandatory criterion of 30 μg/dL; however, only 8 percent of these workers are expected to exceed the permissible level of 40 μg/dL.

In summary, with the exception of Area 3, at least 95 percent of the workers exposed to Site soils are calculated to have blood lead levels less than the OSHA non-mandatory criterion of 30 μg/dL blood lead. Thus, no significant exposures of workers to lead are expected to occur in Areas 1, 2, or 4B. In Area 3, based on the conservative exposure assumptions used in the risk assessment, approximately 34 percent of future construction workers are theoretically calculated to have a blood lead level exceeding the non-mandatory criterion of 30 μg/L; however, only 18 percent of these workers are expected to exceed the permissible level of 40 μg/dL.

5.2.2.2 Percent of Fetal Blood Lead Levels Exceeding Target Blood Lead Level

Current USEPA Office of Solid Waste and Emergency Response (OSWER) guidance calls for the establishment of cleanup goals so that a typical child or group of children with similar exposure would have an estimated risk of no more than 5 percent exceeding a blood lead level of 10 μg/dL (USEPA 1994c,1996b). USEPA (1996b) guidance recommends applying a similar 95th percentile goal to the protection of fetuses carried by women who experience nonresidential exposure. As shown in Table 5-4, less than 5 percent of the potential fetuses of female routine workers of child bearing age exposed to Site soils in Areas 1, 2, and 4B are theoretically calculated to exceed USEPA's blood lead level of concern for children of 10 μg/dL. In Area 3, 63 percent of the potential fetuses of future female routine workers of child bearing age exposed to Site soils within the 0 to 2 foot interval are theoretically calculated to have a blood lead level greater than 10 μg/dL, while 19 percent of the potential fetuses of future female routine workers of child bearing age exposed to Site soils within the 2 to 10 foot interval are theoretically calculated to have a blood lead levels greater than 10 μg/dL, based on the conservative exposure assumptions used in the risk assessment.

As shown in Table 5-4, in Area 2, 46 percent of the potential fetuses of future female construction workers of child bearing age exposed to Site soils within the 0 to 4 foot interval are theoretically calculated to have a blood lead level greater than 10 μg/dL, while 29 percent of the potential fetuses of future female construction workers of child bearing age exposed to Site soils within the 0 to 10 foot interval are theoretically calculated to have a blood lead levels greater than 10 μg/dL, based on the conservative exposure assumptions used in this risk assessment, and assuming no protective equipment. In Area 3, 89 percent of the potential fetuses of future female construction workers of child bearing age exposed to Site soils within the 0 to 4 foot interval are theoretically calculated to have a blood lead level greater than 10 μg/dL, while 76 percent of the potential fetuses of future female construction workers of child bearing age exposed to Site soils within the 0 to 10 foot interval are theoretically calculated to have a blood lead levels greater than 10 μg/dL, based on the conservative exposure assumptions used in this risk assessment and assuming no protective equipment.

As shown in Table 5-4, 5 percent or less of the potential fetuses of female trespassers (age 9 to 18) exposed to Site soils are theoretically calculated to exceed USEPA's blood lead level of concern for children of 10 μg/dL. It should be noted that a baseline blood lead level of 1.7 μg/dL was conservatively used for the female

trespassers. If the baseline blood lead level reported by Brody et al. (1994) for 12 to 19 year old white females of 1 μg/dL (based on Phase 1 of the NHANES III data) were used in this analysis, 3 percent or less of the potential fetuses of female trespassers exposed to Site soils would be calculated to exceed USEPA's blood lead level of concern for children of 10 μg/dL.

In summary, with the exception of Area 3, at least 95 percent of the potential fetuses of female routine workers of child bearing age and female trespassers (age 9 to 18) exposed to Site soils are calculated to have blood lead levels less than the USEPA's blood lead level of concern for children of 10 μg/dL. For future female construction workers of child bearing age exposed to Site soils in Areas 2 and 3, over 5 percent of the potential fetuses may exceed USEPA's blood lead level of concern for children of 10 μg/dL. Thus, no significant current or future exposures of potential fetuses to lead are expected to occur in Areas 1, 4A or 4B, or in Area 2 under a routine worker scenario. Potentially significant exposures could theoretically occur for routine workers in Area 3, or construction workers in Areas 2 or 3, based on the conservative exposure assumptions used in this risk assessment.

5.3 Uncertainty Analysis

Risk is a function of exposure and toxicity. Therefore, uncertainties in estimating either exposure or toxicity can lead to uncertainties in evaluating potential risks. As discussed, conservative assumptions and approaches have been applied in the risk assessment to address uncertainties such that risks are likely to be overestimated rather than underestimated. Several key sources of uncertainty in the risk estimates are described in the following sections.

5.3.1 Site Characterization

Chemical concentrations in soil, ground water, surface water, sediment, and air are generally heterogeneous, with concentrations varying from one location to another, and over time. To offset some of the uncertainties related to this heterogeneity, the 95% upper confidence limit (UCL) of the arithmetic mean for each constituent (and sometimes the maximum measured concentration), were used to estimate exposures. These estimated exposure concentrations may overestimate or underestimate risks for the following reasons:

- It is impossible to guarantee that the highest concentration at a Site will be detected during any sampling event. However, targeted sampling conducted at the Site has generally focused on identifying areas of contamination, rather than

specifically characterizing areas of exposure. For example, many of the soil samples selected for analysis were those with the highest contamination based on visual observation and total organic vapor readings. The exposure concentrations used in the risk assessment are thus likely to be significantly higher than the actual average concentrations. Furthermore, because samples were generally collected only in areas where constituent concentrations are expected to be highest, average concentrations over the entire area over which an individual may travel on-Site are likely to be lower than the exposure concentrations estimated in the risk assessment.

- There is significant conservatism in adding together individual chemical risks based on the 95% UCL concentrations which would cause risks to be overestimated. By definition, for each chemical there is only a 5% chance that the actual arithmetic mean concentration is equal to or higher than the 95% UCL concentration calculated for that chemical. The probability that more than one chemical is at or above the 95% UCL is even lower. For example, for a hypothetical group of three chemicals, there is less than a 1 in 100 chance that the actual arithmetic mean concentrations for two of the three chemicals would be at or above their respective 95% UCL concentrations, assuming that the spatial distributions of individual constituents are independent. There is only about a 1 in 10,000 chance that the actual arithmetic mean concentrations for all three chemicals would be at or above their respective calculated 95% UCL concentrations. The likelihood decreases even further when more chemicals are included. In the ACS risk assessment, the probability that all chemicals would be equal to or greater than the 95% UCL concentrations is extremely small. To some extent, the conservatism of adding together individual chemical risks based on 95% UCL concentrations decreases if the spatial distributions of the individual chemicals are not independent. However, with the great number of chemicals evaluated at this Site, spatial distributions would be expected to differ significantly from constituent to constituent.

- Constituent concentrations in various media are assumed to remain constant over time, which could underestimate or overestimate risks by not accounting for degradation. Site contaminants may degrade to more or less toxic chemicals. For example, some chlorinated solvents found at the Site (e.g., tetrachloroethene, trichloroethene, dichloroethene) may degrade to vinyl chloride, which may be

more hazardous than the parent compounds. However, the most frequently detected solvent, benzene, would degrade to less toxic substances such as carbon dioxide and water. Sampling and analysis were performed in soil, ground water, sediment, and surface water at the ACS Site for common degradation products, such as vinyl chloride. These degradation products have been included in the risk assessment.

- Vinyl chloride has the potential to migrate from landfills through soil gas into homes. However, lateral migration of vinyl chloride from the Site to residences through soil gas is not expected due to physical characteristics of the ACS Site. Vinyl chloride has been detected in only two off-Site upper aquifer monitoring wells, one north of the Site at a concentration below the MCL (in MW-39), and one just southeast of the Site at concentrations at or just above the MCL (in MW-6). Thus, there is no evidence of vinyl chloride migration in the upper aquifer into the residential area. Furthermore, because of the relatively high ground water table, the vadose zone in the southern portion of the Site, near the residential area, is shallow (approximately 10 to 15 feet). Since the nearest homes are located several hundred feet away from the contaminated areas of the Site, and the vadose zone is shallow, lateral vinyl chloride migration from the Site through soil gas to the homes would not be expected, although this has not been confirmed by actual soil gas measurements.

- Constituent concentrations in various media are assumed to remain constant over time, which could overestimate risks by not accounting for source depletion. The assumption of steady-state conditions could also underestimate exposure concentrations by not accounting for future release of unmitigated source materials, if such a hypothetical release is significantly greater than those that have occurred over the past three decades at the Site. Intact buried drums on-Site that still contain waste material are a potential source at the Site. As these drums decay, or are disturbed during potential excavation activities, the waste material may be released to the environment. However, in Area 2, most of the drums were punctured or crushed prior to disposal, and have further decayed in the 20 to 40 years since disposal, so constituent concentrations in soil and ground water are already representative of the impact of the drums as a source (i.e., exposure concentrations are not likely to be higher in the future than the concentrations measured to date). Drums in Area 1 are also in varying states of

decay. However, since many of these drums were not intentionally breached prior to disposal, a potentially greater fraction of the drums in Area 1 may still hold waste material that could be released in the future. Thus, chemical concentrations in soil and ground water in Area 1 could conceivably increase in the future as a result of continuing release from drums in that Area (see also Section 5.3.8).

5.3.2 Tentatively Identified Compounds

Both the identity and concentrations of tentatively identified compounds (TICs) are highly uncertain (USEPA 1992c). Over 600 unique TICs were detected in the soil, ground water, sediment and surface water samples collected at the ACS Site. The majority of the TICs were detected in soil and ground water samples. The most frequently detected TICs in soil were "unknown hydrocarbon", trimethylbenzene, and ethylmethylbenzene. The most frequently detected TICs in ground water were "unknown", substituted propanol isomer and ether. The most frequently detected TICs in sediment were aldol, "unknown hydrocarbon", and PCB. The most frequently detected TICs in surface water were c4-Benzene and ethylmethylbenzene.

The majority of the TICs were infrequently detected at the ACS Site. For example, of the over 600 TICs detected, over half (399) were detected only once, and less than 10% (41) were detected more than 10 times.

The majority of the TICs detected at the ACS Site were not well defined. For example:

- 97 of the TICs were identified with the adjective "unknown", such as "unknown hydrocarbon", or "trimethylbenzene + unknown";
- 16 of the TICs were identified using the word "substituted", such as "substituted propanol isomer" or "unknown substituted benzene";
- 32 of the TICs were identified with incomplete names, such as "Bicyclo[3.1.0]hex-2-ene,2-me...", or "1(2H)-Naphthalenone, 3,4,-dih..."; and
- 29 of the TICs were identified as constituents listed on the TAL/TCL list. Given that the samples were analyzed for constituents on the TAL/TCL list, these constituents must be incorrectly identified.

There are 31 TICs that were (1) detected more than 10 times at the ACS Site; (2) are not defined using the words unknown", or "substituted"; (3) are not incompletely defined using the punctuation "..." and (4) are not on the TAL/TCL list. These TICS were

detected from 11 to 106 times at the ACS Site and are listed below in order of the most to least number of times detected at the ACS Site.

- Trimethylbenzene;
- Ethylmethylbenzene;
- Trimethylbenzene isomer;
- Aldol;
- Nonane;
- Benzene, 2-ethyl-1,4-dimethyl-;
- Ethylmethylbenzene isomer;
- Benzene, propyl-;
- Decane;
- Benzene, 1-ethyl-2-methyl-;
- Benzene, 1,1'-oxybis-;
- Ethyldimethylbenzene isomer;
- Undecane, 4,7-dimethyl-;
- Cyclohexanol, 3,3,5-trimethyl-;
- Benzenamine, n,n-diethyl-;
- Benzene, 1,2,4-trimethyl-;
- Dimethylphenol;
- Benzene, 1,3,5-trimethyl-;
- Heptadecane, 2,6-dimethyl-;
- Benzene, 1-ethyl-3-methyl-;
- Sulfur, mol. (S8);
- Ethyldimethylbenzene;
- Ether;
- Hexanoic acid, 2-ethyl-;
- Nonane, 2,6-dimethyl-;
- Tetradecane;
- Benzene, (1-methylethyl)-;
- Hexadecanoic acid;
- 1-Hexanol, 2-ethyl-;
- 2,4-Pentanediol, 2-methyl-; and
- Propanoic acid, 2-(3-chlorop.

Only those TICs for which USEPA has developed toxicity criteria and which are not on the TAL/TCL list, are included in the baseline risk estimates. Of the 31 chemicals listed above, none have USEPA-derived toxicity values in IRIS or HEAST. USEPA toxicity values are available only for the following 13 TICs, most of which have been detected only very sporadically in soil and/or ground water at the ACS Site.

- Acetaldehyde;
- Acetophenone;
- Azobenzene;
- Butanol, 1-;
- Caprolactam;
- Chlorodifluoromethane;
- Cyclohexanone;
- Diethyl Ether;
- Dioxane,1,4-;
- Ethanol, 2-(2-butoxyethoxy)-;
- Hexane, n-;
- Phenol, 4,4'-(1-methylethylidene)bis-; and
- Phthalic anhydride.

Inclusion of the 13 TICs with toxicity criteria in the quantitative risk assessment does not have a significant effect on the final risk estimates for any current or future exposure scenario. These TICs comprise less than one percent of both the cancer risk and noncancer risk for any receptor (see tables in Attachment 1 to Appendix C). Risk estimates would increase if toxicity values were available for the rest of the TICs and they were included in the calculations. However, there is no indication that TICs would represent the majority of risk at the ACS Site.

5.3.3 Exposure Scenarios and Behavioral Patterns

Scenarios of human exposure were evaluated without attempting to quantify the likelihood with which those scenarios may occur. For example, the likelihood of construction on the Off-Site Containment Area landfill (Area 2) is not known, and has not been accounted for in the calculation of potential health risks (i.e., the risks were calculated assuming that such construction will occur). In addition, the behavioral patterns of workers, trespassers, and residents also cannot be predicted with certainty. Section 3.4 identifies assumptions that are applied to characterize behavior (e.g., exposure frequencies) and physical traits

(e.g., body weight). High-end, as well as central tendency estimates were evaluated to help characterize the uncertainty and variability among potential receptors and their behavior. Consistent with USEPA guidance, there is only a small probability that any individual would experience high-end exposures, and the risks associated with these exposures.

5.3.3.1 Off-Site Ground Water Use

Although state regulations and the shallow depth to the clay layer make installation of wells in the upper aquifer near the Site (See Section 3.2) very unlikely, potential risks from residential use of the upper aquifer have been calculated as a bounding estimate on potential off-Site (Area 5A) risks. It was assumed that a residential well would be installed in the center of the off-Site plume to the southeast of the Site. Adult residential risks from ingestion of drinking water, dermal contact and inhalation while showering, and incidental ingestion and dermal contact while gardening were estimated. Child residential risks from ingestion of drinking water, dermal contact and inhalation while bathing, and incidental ingestion and dermal contact while swimming were also estimated. The cumulative cancer risk for adults (using high-end exposure parameters) from use of ground water from the center of the upper aquifer plume would be approximately 3×10^{-3}, primarily from use of the ground water as drinking water. The cumulative cancer risk for children (using high-end exposure parameters) would be approximately 1×10^{-3}, again, primarily from use of the ground water as drinking water. Arsenic (76 µg/L) accounts for 52%, bis(2-chloroethyl)ether (55 µg/L) for 28%, and benzene (1,200 µg/L) for 16% of the cancer risk from water ingestion for both adults and children.

The cumulative HI from use of ground water from the center of the upper aquifer plume would be approximately 10 for adult residents and 20 for child residents. The HI values are driven primarily by use of the upper aquifer ground water as drinking water. Arsenic accounts for 83% and manganese for 5% of the HI from water ingestion for both adults and children.

5.3.3.2 Exposure to Maximum Soil Concentrations

The exposure activity patterns of the receptor populations cannot be known with certainty. Biased exposures can occur because of non-random activity patterns. If there is a feature at the Site that draws receptors to a particular location in an area, and that location happens to have higher concentrations than the rest of the area, then exposures could be greater than those estimated using the upper confidence limit on

the mean of concentrations throughout an area. Concentrations at the Site are very heterogeneous, with the highest concentrations of a given chemical and nondetected concentrations of the same chemical within several feet of each other. However, at the request of USEPA, bounding risks have been calculated using only maximum concentrations from Areas 2 and 3 for the same receptors identified in Section 3. For the surface soil scenario (Approach 1), cumulative cancer risks in both Areas 2 and 3 are approximately two-fold higher than those discussed previously when only maximum concentrations were used. For the subsurface soil scenario (Approach 2), cumulative cancer risks are approximately an order of magnitude higher than those discussed previously when only maximum concentrations were used.

Estimated risks of noncancer health effects also increase when exposure to only maximum soil concentrations is assumed. The HI values for Area 2 increase by a factor of approximately two for both surface soil and subsurface soil bounding scenarios. The HI values for Area 3 increase by a factor of approximately two for surface soil and six for subsurface soil bounding scenarios.

5.3.4 Dermal Soil Loading and Fraction Absorbed

Risks and hazard indices were calculated for dermal exposures to soil/sediment for all receptors using dermal adherence values recommended by USEPA's *Region 9 Preliminary Remediation Goals (PRGs) 1998* (USEPA 1998b) and presented in the USEPA Interim Guidance *Dermal Risk Assessment* (USEPA 1998c). Adherence values estimate the amount of soil that will adhere to a given surface area of skin. The adherence values in current USEPA guidance (1998b, 1998c) are based on several recent studies in the literature (Kissel et al. 1996a, 1996b) and are lower than adherence values recommended in earlier USEPA guidance (USEPA 1992f):

Comparison of Dermal Adherence Values

Receptor	USEPA (1992f)	USEPA (1998b, 1998c)
Adult	1.0 (high end), 0.2 (central)	0.08
Child	1.0 (high end), 0.2 (central)	0.3

The current *Exposure Factors Handbook* (USEPA 1997c) indicates that confidence in the USEPA (1992f) adherence factors is low. USEPA (1997c) cites Kissel et al. studies (1996a, 1996b) used in the 1998 guidance as the key studies for estimation of dermal adherence, although the overall confidence rating of these studies is also low (due to the

limited dataset). The Kissel data indicate that there is high variability in soil adherence depending on several factors including the activity of the receptor, soil type, and soil moisture content.

The percentage of chemical in soil that is absorbed through the skin (i.e., the fraction absorbed) is influenced by the amount of soil that adheres to the skin. USEPA (1992f) notes that the fraction absorbed is likely to be greatest when the amount of soil on the skin is a "monolayer" (defined as a single layer of tightly packed particles). When soil adherence on the skin is greater than a monolayer, the fraction absorbed decreases as the thickness of the soil layer on the skin increases because soil particles are not in contact with the skin. Thus, absorption through the skin is expected to decrease at high levels of soil adherence. The fraction absorbed also decreases when soil adherence is low enough that the skin is not completely covered with soil particles. The potential sensitivity of the fraction absorbed to soil adherence is of particular concern with the significant uncertainty in soil adherence values. For this reason, the Baseline Risk Assessment relied on soil absorption and dermal adherence factors from the same USEPA source (i.e., USEPA 1998b).

When the USEPA (1992f) adherence values are used in the risk calculations with the absorption fractions recommended by USEPA (1998b), risks from dermal contact with soil contaminants increase in proportion to the difference in values listed above. For example, the maximum cumulative cancer risk from dermal contact with soil would increase from approximately 1×10^{-4} to 2×10^{-3} for future routine workers exposed to subsurface soil in Area 2 if a dermal adherence value of 1.0 were used. If the higher adherence values from USEPA (1992f) are used, potential risks from exposure to subsurface soils are driven by dermal absorption rather than incidental ingestion of the soil.

5.3.5 Toxicological Information

Toxicity data used in risk assessments is limited. Much of the data used by USEPA to generate health criteria are derived from animal studies. Uncertainties result given that:

- Both end-points of toxicity (effect or target organ) and the doses at which effects are observed are extrapolated from animals to humans;

- Results of short-term exposure studies are used to predict the effects of long-term exposures;

- Results of studies using high doses are used to predict effects from exposures to low doses typically associated with environmental exposures; and

- Effects exhibited by homogeneous populations of animals (or humans) are used to predict effects in heterogeneous populations with variable sensitivities.

In evaluating the potential for noncancer effects, USEPA attempts to account for these sources of uncertainty by using a conservative approach to develop toxicity values. First, the highest dose that caused no adverse effect in the study animals (NOAEL) (or the lowest dose that caused an adverse effect, LOAEL, if no NOAEL is available) is selected. This dose is then divided by one or more uncertainty factors. For example, an uncertainty factor of ten is typically applied to account for each of the following: (1) use of a LOAEL instead of a NOAEL; (2) estimation of long-term effects from a short-term study; (3) extrapolation from animals to humans; and (4) variability among individual humans, so that the RfD or RfC will be protective of sensitive individuals in the general population. Finally, a modifying factor of up to ten is sometimes applied by USEPA. Thus, the RfD or RfC can be up to 1,000 times lower than a dose which caused no effect in animals, and up to 10,000 times lower than the lowest dose shown to have an adverse effect.

In evaluating the potential for cancer, USEPA assumes that there is no-threshold dose below which the risk of developing cancer is zero. Therefore, mathematical models (e.g., the linearized multi-stage low-dose extrapolation model) are used to estimate the risks associated with very low doses. The data are fit to the model and the upper 95 percent confidence limit of the slope is calculated, i.e., the slope factor; thus, there is only a 5 percent chance that the probability of response could be greater. The true value of cancer risk of these chemicals is uncertain: it is likely to be lower than the values estimated, and may, in fact, be zero.

5.3.6 Extrapolated Dermal Toxicity Values

As noted in Section 4, USEPA has not established any toxicity values for evaluating risks or effects via the dermal route. The extrapolation of toxicity values from one route to another introduces significant uncertainties because the toxicity of a chemical may differ from one route of exposure to another. Use of oral toxicity values to estimate dermal risks could overestimate risks if the mechanism of oral toxicity for a chemical were influenced by first-pass metabolism in the intestine and liver (e.g., when toxicity is caused by metabolites of the constituent). Chemicals absorbed through the skin are distributed

through the body without undergoing this presystemic transformation to the more toxic metabolite. Use of oral toxicity values to estimate dermal risks could also underestimate risks if oral absorption in the toxicity study were significantly less than 100%, and the oral toxicity value did not account for oral absorption. In addition, chemicals such as PCBs may cause the toxic effect at the point of contact rather than (or in addition to) effects on internal organs after being absorbed through the skin. For chemicals that act in this manner, combination of a dermal absorption fraction with the estimated toxicity value may underestimate risks to the skin itself.

5.3.7 Cumulative Risks

The summation of cancer risks and noncancer effects for multiple constituents is based on dose additivity, which assumes that there are no synergistic or antagonistic interactions among the constituents in a mixture and that each constituent has the same mode of action and elicits the same health effects (USEPA 1989). The cumulative estimates are considered screening-level estimates because they tend to overestimate cumulative cancer risks and noncancer effects.

For example, the estimate of cumulative cancer risk is a sum of upper bound estimates of cancer risk, which are calculated with slope factors representing upper 95% confidence bounds of cancer potency. Constituents with lesser evidence of human carcinogenicity are treated the same as constituents with greater evidence (i.e., USEPA weight-of-evidence Groups B and C carcinogens are given the same weight as Group A carcinogens). Group C carcinogens contributed less than 2 percent of the total cancer risk. Similarly, constituents with RfDs of lower confidence (i.e., larger uncertainty factors) are treated the same as constituents with RfDs of higher confidence. The estimates of HIs presented in this baseline risk assessment include constituents that may induce different health effects or that may act by different mechanisms.

5.3.8 Potential Adverse Impacts of Truck Traffic over the On-Site Containment Area (in Area 1)

The On-site Containment Area consists of two oval areas totalling approximately 250 feet north to south and 450 feet west to east, located in the northern third of the fenced ACS facility. An estimated 400 to 2,500 drums containing sludge and semi-solids of unknown types are buried in this area on their sides and closely packed together (Warzyn, Inc. 1991a; Focus Environmental 1997; Geophysical Study 1998). The surface throughout this area is generally flat, with no vegetation or surface construction, and covered by coarse

sand and gravel. The drums are located approximately one to five feet below ground surface.

The Remedial Investigation report (Warzyn, Inc. 1991a) noted that the majority of drums encountered during Site investigation were dented, corroded, and/or mangled. Analytical results from Area 1 soil and ground water samples indicate that releases from the drums have already resulted in the presence of contaminants in the subsurface environment (see Area 1 data in Tables 2-1 through 2-8).

Because the On-Site Containment Area is located within the fence of the active ACS facility, trucks may drive over the area with buried drums. It has been hypothesized that the pressure on the buried drums from vehicular traffic could result in an additional release of drummed waste to soil, ground water, and soil gas (and ultimately ambient air). It is not possible to quantify the effect of such releases, if any, because drum contents from the On-Site Containment Area have not been sampled. Due to the shallow depth to ground water (i.e., approximately two feet below ground surface), any additional waste released from the drums is likely to be below the ground water table. As such, if drum damage were to occur from truck traffic, releases could potentially increase the total amount of waste present in subsurface soil and ground water in Area 1, but are unlikely to cause a sudden increase in air concentrations that could pose an acute risk to workers. Consistent with this finding, no acute exposures have been reported by on-Site workers as a result of truck traffic over the On-Site Containment Area. Given the high number of uncertainties, it is not possible to evaluate potential risks in more detail with any degree of accuracy.

6.0 REFERENCES

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Version FINAL
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Note: USEPA does not accept this document as "Final" and has tasked its own contractor to perform the baseline risk assessment. This document is in the site file to document PRP assumptions.

KAdler 11/2000

REVISED BASELINE RISK ASSESSMENT AMERICAN CHEMICAL SERVICE NPL SITE GRIFFITH, INDIANA

VOLUME I: BASE-CASE RISK ESTIMATES

Prepared for

ACS RD/RA Executive Committee
Chicago, IL

Prepared by

ENVIRON Corporation
214 Carnegie Center
Princeton, New Jersey

September 1998

TABLES

Table 2-1a: Surface Soil Samples
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

Area 1 SURFACE (0-2 ft)			Area 3 SURFACE (0-2 ft)			Area 5A SURFACE (0-2 ft)		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
SA-03	ACS-SA03-03	Aug-89	SA-01	ACS-SA01-03	Jul-89	SS01*	ACS-SS01-001	Sep-97
SS101	ACS-SS101	Sep-97	SA-02	ACS-SA02-03	Jul-89	SS01*	ACS-SS01-101	Sep-97
SS102	ACS-SS102	Sep-97	SB-031	ACS-SB31-02	May-90	SS02*	ACS-SS02-001	Sep-97
SS103	ACS-SS103	Sep-97	SB-032	ACS-SB32-02	May-90			
SS103	ACS-SS103-DUP	Sep-97	SB-033	ACS-SB33-02	May-90			
SS104	ACS-SS104	Sep-97	SB-043	ACS-SB43-01	Jun-90			
SS105	ACS-SS105	Sep-97	SB-044	ACS-SB44-01	Jun-90			
SS106	ACS-SS106	Sep-97	SB-045	ACS-SB45-01	Jun-90			
SS107	ACS-SS107	Sep-97	SB-046	ACS-SB46-01	Jun-90			
SS108	ACS-SS108	Sep-97	SB-047	ACS-SB47-01	Jun-90			
SS109*	ACS-SS109	Sep-97	SB-048	ACS-SB48-01	Jun-90			
SS110*	ACS-SS110	Sep-97	SB-050	ACS-SB50-01	Jun-90			
SS111*	ACS-SS111	Sep-97	SB-052	ACS-SB52-01	Jun-90			
SS112*	ACS-SS112	Sep-97	SB-053	ACS-SB53-01	Jun-90			
SS113*	ACS-SS113	Sep-97						

Note:
Duplicate samples were denoted with a "DUP" or "-101" in the Sample ID, and averaged with the associated sample prior to data summary or risk calculations.
(a) All samples collected from 0-2 feet below ground surface were included in risk calculations.

Table 2-1b: Subsurface Soil and Waste Samples
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

Area 1 SUBSURFACE (2-10 ft)			Area 2 SUBSURFACE (2-10 ft)			Area 3 SUBSURFACE (2-10 ft)			Area 4B SUBSURFACE (2-10 ft)		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
FIRE POND	SS01	Sep-96	D-01-S	D01-S-IEA	Jul-97	KP-01-S	KP01-S-IEA	Jul-97	SB-096	SB96-03-FT	Jun-93
FIRE POND	SS01-D	Sep-96	D-02-S	D02-S-IEA	Jul-97	SB-001	ACS-SB01-03	Aug-89			
FIRE POND	SS02	Sep-96	SA-01-S	SA01-S-IEA-01	Jul-97	SB-001	ACS-SB01-09	Aug-89			
SB-008	ACS-SB08-06	Aug-89	SA-01-S	SA01-S-IEA-02	Jul-97	SB-002	ACS-SB02-05.5	Aug-89			
SB-008	ACS-SB08-10	Aug-89	SA-02-S	SA02-S-IEA	Jul-97	SB-002	ACS-SB02-07	Aug-89			
SB-009	ACS-SB09-06	Aug-89	SA-04-S	SA04-S-IEA	Jul-97	SB-002	ACS-SB02-08.5	Aug-89			
SB-009	ACS-SB09-10	Aug-89	SB-004	ACS-SB04-05	Aug-89	SB-029	ACS-SB29-08	May-90			
SB-010	ACS-SB10-05	Aug-89	SB-028	ACS-SB28-08	May-90	SB-030	ACS-SB30-10	May-90			
SB-010	ACS-SB10-10	Aug-89	SB-036	ACS-SB36-10	Jun-90	SB-041	ACS-SB41-05.5	Jun-90			
SB-011	ACS-SB11-05	Aug-89	SB-037	ACS-SB37-10	Jun-90	SB-043	ACS-SB43-04.5	Jun-90			
SB-011	ACS-SB11-10	Aug-89	SB-038	ACS-SB38-10	Jun-90	SB-044	ACS-SB44-04.5	Jun-90			
SB-012	ACS-SB12-05	Aug-89	SB-039	ACS-SB39-10	Jun-90	SB-045	ACS-SB45-04.5	Jun-90			
SB-012	ACS-SB12-10	Aug-89	SB-040	ACS-SB40-10	Jun-90	SB-046	ACS-SB46-04.5	Jun-90			
SB-013	ACS-SB13-05	Aug-89	SB-042	ACS-SB42-05.5	Jun-90	SB-047	ACS-SB47-04.5	Jun-90			
SB-013	ACS-SB13-10	Aug-89	SB-077	SB77-07-FT	Jun-93	SB-048	ACS-SB48-04.5	Jun-90			
SB-016	ACS-SB16-06	Sep-89	SB-077	SB77-09-FT	Jun-93	SB-049	ACS-SB49-04.5	Jun-90			
SB-017	ACS-SB17-06.5	Sep-89	SB-078	SB78-07-FT	Jun-93	SB-050	ACS-SB50-04.5	Jun-90			
SB-018	ACS-SB18-07	Sep-89	SB-078	SB78-10-FT	Jun-93	SB-051	ACS-SB51-04.5	Jun-90			
SB-020	ACS-SB20-07	May-90	SB-079	SB79-06-FT	Jun-93	SB-052	ACS-SB52-04.5	Jun-90			
SB-021	ACS-SB21-07	May-90	SB-079	SB79-08-FT	Jun-93	SB-053	ACS-SB53-04.5	Jun-90			
SB-055	ACS-SB55-07	Jun-90	SB-080	SB80-06-FT	Jun-93	SB-054	ACS-SB54-04.5	Jun-90			
SB-056	ACS-SB56-07	Jun-90	SB-080	SB80-08-FT	Jun-93	SB-084	SB84-05-FT	Jun-93			
SB-057	ACS-SB57-07	Jun-90	SB-081	SB81-04-FT	Jun-93	SB-085	SB85-05-FT	Jun-93			
SB-058	ACS-SB58-07	Jun-90	SB-081	SB81-06-FT	Jun-93	SB-086	SB86-03-FT	Jun-93			
SB-059	ACS-SB59-07	Jun-90	SB-082	SB82-04.5-FT	Jun-93	SB-087	SB87-07-FT	Jun-93			
SB-060	ACS-SB60-07	Jun-90	SB-082	SB82-06.5-FT	Jun-93	SB-088	SB88-07.5-FT	Jun-93			
SB-061	ACS-SB61-07	Jun-90	SB-083	SB83-06.5-FT	Jun-93	SP-01-S	SP01-S-IEA	Jul-97			
SB-062	ACS-SB62-07	Jun-90	SB-083	SB83-06.5-FT-(91)	Jun-93	SP-02-S	SP02-S-IEA	Jul-97			
SB-063	ACS-SB63-07	Jun-90	T-12-S	T12-S-IEA	Jul-97	TP-01	ACS-TP01-03.5	Aug-89			
SB-064	ACS-SB64-07	Jun-90				TP-01	ACS-TP01-06	Aug-89			
SB-065	ACS-SB65-07	Jun-90									
SB-066	ACS-SB66-07	Jun-90									
SB-067	ACS-SB67-07	Jun-90									
SB-068	ACS-SB68-07	Jun-90									
SB-069	ACS-SB69-08	Jun-90									
SB-070	ACS-SB70-08	Jun-90									
SB-071	ACS-SB71-08	Jun-90									
SB-072	ACS-SB72-08	Jun-90									
SB-073	ACS-SB73-05	Jun-90									
SB-074	ACS-SB74-05	Jun-90									
SB-089	SB89-03-FT	Jun-93									
SB-089	SB89-05-FT	Jun-93									
SB-089	SB89-05-FT-(91)	Jun-93									

Table 2-1b: Subsurface Soil and Waste Samples
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

Area 1 SUBSURFACE (2-10 ft)			Area 2 SUBSURFACE (2-10 ft)	Area 3 SUBSURFACE (2-10 ft)	Area 4B SUBSURFACE (2-10 ft)
SB-090	SB90-03-FT	Jun-93			
SB-090	SB90-05-FT	Jun-93			
SB-090	SB90-05-FT-(91)	Jun-93			
SB-091	SB91-03-FT	Jun-93			
SB-091	SB91-05-FT	Jun-93			
SB-092	SB92-03-FT	Jun-93			
SB-092	SB92-05-FT	Jun-93			
SB-093	SB93-03-FT	Jun-93			
SB-093	SB93-05-FT	Jun-93			
SB-094	SB94-03-FT	Jun-93			
SB-094	SB94-05-FT	Jun-93			
SB-095	SB95-03-FT	Jun-93			
SB-096	SB96-03-FT	Jun-93			
SB-110	ACS-SB110-SS4-07-09'	Jan-96			
SB-113	ACS-SB113-SS4-07-09'	Jan-96			
SB-113	ACS-SB113-SS4-07-09'-DIL	Jan-96			
SB-118	ACS-SB118-SS3-06-08'	Jan-96			
SB-119	ACS-SB119-SS3-06-08'	Jan-96			
SB-127	ACS-SB127-SS3-06-08'	Jan-96			
SB-127	ACS-SB127-SS3-06-08'-DIL	Jan-96			
SB-128	ACS-SB128-SS3-06-08'	Jan-96			
SB-128	ACS-SB128-SS3-06-08'-DIL	Jan-96			
SB-128	ACS-SB128-SS3-06-08'-DUP	Jan-96			
SB-128	ACS-SB128-SS3-06-08'-DUP-DIL	Jan-96			
TP-02	ACS-TP02-03	Aug-89			
TP-02	ACS-TP02-05	Aug-89			
TP-03	ACS-TP03-09	Aug-89			
TP-04	ACS-TP04-08	Aug-89			
TP-05	ACS-TP05-03	Aug-89			
TP-06	ACS-TP06-04	Aug-89			
TP-07	ACS-TP07-03	Aug-89			

Note:
See attached key to Sample Ids.
Duplicate samples were denoted with a "DUP", "-D", or "(91)" in the Sample ID, and averaged with the associated sample prior to data summary or risk calculations.
Diluted samples: denoted with a "DIL" in the Sample ID. In data summary and risk calculations, the detected concentration from the diluted sample was used for all detects (rather than the analytical result from the undiluted sample). For chemicals that were not detected in either the diluted or undiluted lab analysis for a sample, the detection limit from the undiluted analysis was retained as the detection limit.
(a) No samples collected from 2-10 feet were excluded from risk calculations.

Table 2-1c: Surface/Subsurface Soil and Waste Samples - For Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

Area 1 EXCAVATION (0-10 ft)			Area 2 EXCAVATION (0-4 ft)			Area 2 EXCAVATION (0-10 ft)			Area 3 EXCAVATION (0-4 ft)			Area 3 EXCAVATION (0-10 ft)			Area 4B EXCAVATION (0-10 ft)		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
SA-03	ACS-SA03-03	Aug-89	D-01-S	D01-S-IEA	Jul-97	D-01-S	D01-S-IEA	Jul-97	SA-01	ACS-SA01-03	Jul-89	SA-01	ACS-SA01-03	Jul-89	SD-28	APD-SD-28-01	May-96
SS101	ACS-SS101	Sep-97	D-02-S	D02-S-IEA	Jul-97	D-02-S	D02-S-IEA	Jul-97	SA-02	ACS-SA02-03	Jul-89	SA-02	ACS-SA02-03	Jul-89	SD-29	APD-SD-29-01	May-96
SS102	ACS-SS102	Sep-97	SA-01-S	SA01-S-IEA-01	Jul-97	SA-01-S	SA01-S-IEA-01	Jul-97	SB-031	ACS-SB31-02	May-90	SB-031	ACS-SB31-02	May-90	SD-29	APD-SD-29-01-RE	May-96
SS103	ACS-SS103	Sep-97	SA-01-S	SA01-S-IEA-02	Jul-97	SA-01-S	SA01-S-IEA-02	Jul-97	SB-032	ACS-SB32-02	May-90	SB-032	ACS-SB32-02	May-90	SD-29	APD-SD-29-91	May-96
SS103	ACS-SS103-DUP	Sep-97	SA-02-S	SA02-S-IEA	Jul-97	SA-02-S	SA02-S-IEA	Jul-97	SB-033	ACS-SB33-02	May-90	SB-033	ACS-SB33-02	May-90	SD-29	APD-SD-29-91-RE	May-96
SS104	ACS-SS104	Sep-97	SA-04-S	SA04-S-IEA	Jul-97	SA-04-S	SA04-S-IEA	Jul-97	SB-043	ACS-SB43-01	Jun-90	SB-043	ACS-SB43-01	Jun-90	SD-30	APD-SD-30-01	May-96
SS105	ACS-SS105	Sep-97	SB-081	SB81-04-FT	Jun-93	SB-004	ACS-SB04-05	Aug-89	SB-044	ACS-SB44-01	Jun-90	SB-044	ACS-SB44-01	Jun-90	ST-01	ACS-ST01-001	Sep-97
SS106	ACS-SS106	Sep-97	T-12-S	T12-S-IEA	Jul-97	SB-028	ACS-SB28-08	May-90	SB-045	ACS-SB45-01	Jun-90	SB-045	ACS-SB45-01	Jun-90	ST-02	ACS-ST02-001	Sep-97
SS107	ACS-SS107	Sep-97				SB-036	ACS-SB36-10	Jun-90	SB-046	ACS-SB46-01	Jun-90	SB-046	ACS-SB46-01	Jun-90			
SS108	ACS-SS108	Sep-97				SB-037	ACS-SB37-10	Jun-90	SB-047	ACS-SB47-01	Jun-90	SB-047	ACS-SB47-01	Jun-90			
SS109*	ACS-SS109	Sep-97				SB-038	ACS-SB38-10	Jun-90	SB-048	ACS-SB48-01	Jun-90	SB-048	ACS-SB48-01	Jun-90			
SS110*	ACS-SS110	Sep-97				SB-039	ACS-SB39-10	Jun-90	SB-050	ACS-SB50-01	Jun-90	SB-050	ACS-SB50-01	Jun-90			
SS111*	ACS-SS111	Sep-97				SB-040	ACS-SB40-10	Jun-90	SB-052	ACS-SB52-01	Jun-90	SB-052	ACS-SB52-01	Jun-90			
SS112*	ACS-SS112	Sep-97				SB-042	ACS-SB42-05.5	Jun-90	SB-053	ACS-SB53-01	Jun-90	SB-053	ACS-SB53-01	Jun-90			
SS113*	ACS-SS113	Sep-97				SB-077	SB77-07-FT	Jun-93	KP-01-S	KP01-S-IEA	Jul-97	KP-01-S	KP01-S-IEA	Jul-97			
FIRE POND	SS01	Sep-96				SB-077	SB77-09-FT	Jun-93	SB-001	ACS-SB01-03	Aug-89	SB-001	ACS-SB01-03	Aug-89			
FIRE POND	SS01-D	Sep-96				SB-078	SB78-07-FT	Jun-93	SB-086	SB86-03-FT	Jun-93	SB-086	SB86-03-FT	Jun-93			
FIRE POND	SS02	Sep-96				SB-078	SB78-10-FT	Jun-93	SP-01-S	SP01-S-IEA	Jul-97	SP-01-S	SP01-S-IEA	Jul-97			
SB-008	ACS-SB08-06	Aug-89				SB-079	SB79-06-FT	Jun-93	SP-02-S	SP02-S-IEA	Jul-97	SP-02-S	SP02-S-IEA	Jul-97			
SB-008	ACS-SB08-10	Aug-89				SB-079	SB79-08-FT	Jun-93	TP-01	ACS-TP01-03.5	Aug-89	TP-01	ACS-TP01-03.5	Aug-89			
SB-009	ACS-SB09-06	Aug-89				SB-080	SB80-06-FT	Jun-93				SB-001	ACS-SB01-09	Aug-89			
SB-009	ACS-SB09-10	Aug-89				SB-080	SB80-08-FT	Jun-93				SB-002	ACS-SB02-05.5	Aug-89			
SB-010	ACS-SB10-05	Aug-89				SB-081	SB81-04-FT	Jun-93				SB-002	ACS-SB02-07	Aug-89			
SB-010	ACS-SB10-10	Aug-89				SB-081	SB81-06-FT	Jun-93				SB-002	ACS-SB02-08.5	Aug-89			
SB-011	ACS-SB11-05	Aug-89				SB-082	SB82-04.5-FT	Jun-93				SB-029	ACS-SB29-08	May-90			
SB-011	ACS-SB11-10	Aug-89				SB-082	SB82-06.5-FT	Jun-93				SB-030	ACS-SB30-10	May-90			
SB-012	ACS-SB12-05	Aug-89				SB-083	SB83-06.5-FT	Jun-93				SB-041	ACS-SB41-05.5	Jun-90			
SB-012	ACS-SB12-10	Aug-89				SB-083	SB83-06.5-FT-(91)	Jun-93				SB-043	ACS-SB43-04.5	Jun-90			
SB-013	ACS-SB13-05	Aug-89				T-12-S	T12-S-IEA	Jul-97				SB-044	ACS-SB44-04.5	Jun-90			
SB-013	ACS-SB13-10	Aug-89										SB-045	ACS-SB45-04.5	Jun-90			
SB-016	ACS-SB16-06	Sep-89										SB-046	ACS-SB46-04.5	Jun-90			
SB-017	ACS-SB17-06.5	Sep-89										SB-047	ACS-SB47-04.5	Jun-90			
SB-018	ACS-SB18-07	Sep-89										SB-048	ACS-SB48-04.5	Jun-90			
SB-020	ACS-SB20-07	May-90										SB-049	ACS-SB49-04.5	Jun-90			
SB-021	ACS-SB21-07	May-90										SB-050	ACS-SB50-04.5	Jun-90			
SB-055	ACS-SB55-07	Jun-90										SB-051	ACS-SB51-04.5	Jun-90			
SB-056	ACS-SB56-07	Jun-90										SB-052	ACS-SB52-04.5	Jun-90			
SB-057	ACS-SB57-07	Jun-90										SB-053	ACS-SB53-04.5	Jun-90			
SB-058	ACS-SB58-07	Jun-90										SB-054	ACS-SB54-04.5	Jun-90			
SB-059	ACS-SB59-07	Jun-90										SB-084	SB84-05-FT	Jun-93			
SB-060	ACS-SB60-07	Jun-90										SB-085	SB85-05-FT	Jun-93			
SB-061	ACS-SB61-07	Jun-90										SB-087	SB87-07-FT	Jun-93			
SB-062	ACS-SB62-07	Jun-90										SB-088	SB88-07.5-FT	Jun-93			
SB-063	ACS-SB63-07	Jun-90										TP-01	ACS-TP01-06	Aug-89			
SB-064	ACS-SB64-07	Jun-90															
SB-065	ACS-SB65-07	Jun-90															
SB-066	ACS-SB66-07	Jun-90															
SB-067	ACS-SB67-07	Jun-90															
SB-068	ACS-SB68-07	Jun-90															
SB-069	ACS-SB69-08	Jun-90															
SB-070	ACS-SB70-08	Jun-90															
SB-071	ACS-SB71-08	Jun-90															
SB-072	ACS-SB72-08	Jun-90															

Table 2-1c: Surface/Subsurface Soil and Waste Samples - For Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

	Area 1 EXCAVATION (0-10 ft)		Area 2 EXCAVATION (0-4 ft)	Area 2 EXCAVATION (0-10 ft)	Area 3 EXCAVATION (0-4 ft)	Area 3 EXCAVATION (0-10 ft)	Area 4B EXCAVATION (0-10 ft)
SB-073	ACS-SB73-05	Jun-90					
SB-074	ACS-SB74-05	Jun-90					
SB-089	SB89-03-FT	Jun-93					
SB-089	SB89-05-FT	Jun-93					
SB-089	SB89-05-FT-(91)	Jun-93					
SB-090	SB90-03-FT	Jun-93					
SB-090	SB90-05-FT	Jun-93					
SB-090	SB90-05-FT-(91)	Jun-93					
SB-091	SB91-03-FT	Jun-93					
SB-091	SB91-05-FT	Jun-93					
SB-092	SB92-03-FT	Jun-93					
SB-092	SB92-05-FT	Jun-93					
SB-093	SB93-03-FT	Jun-93					
SB-093	SB93-05-FT	Jun-93					
SB-094	SB94-03-FT	Jun-93					
SB-094	SB94-05-FT	Jun-93					
SB-095	SB95-03-FT	Jun-93					
SB-096	SB96-03-FT	Jun-93					
SB-110	ACS-SB110-SS4-07-09'	Jan-96					
SB-113	ACS-SB113-SS4-07-09'	Jan-96					
SB-113	ACS-SB113-SS4-07-09'-DIL	Jan-96					
SB-118	ACS-SB118-SS3-06-08'	Jan-96					
SB-119	ACS-SB119-SS3-06-08'	Jan-96					
SB-127	ACS-SB127-SS3-06-08'	Jan-96					
SB-127	ACS-SB127-SS3-06-08'-DIL	Jan-96					
SB-128	ACS-SB128-SS3-06-08'	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DIL	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DUP	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DUP-DIL	Jan-96					
TP-02	ACS-TP02-03	Aug-89					
TP-02	ACS-TP02-05	Aug-89					
TP-03	ACS-TP03-09	Aug-89					
TP-04	ACS-TP04-08	Aug-89					
TP-05	ACS-TP05-03	Aug-89					
TP-06	ACS-TP06-04	Aug-89					
TP-07	ACS-TP07-03	Aug-89					

Note:
Duplicate samples were denoted with a "DUP" or "-101" in the Sample ID, and averaged with the associated sample prior to data summary or risk calculations.
(a) All samples collected from 0-4 feet, or from 0-10 feet, were included in risk calculations for excavation.

Table 2-1c: Surface/Subsurface Soil and Waste Samples - For Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

Area 1 EXCAVATION (0-10 ft)			Area 2 EXCAVATION (0-4 ft)			Area 2 EXCAVATION (0-10 ft)			Area 3 EXCAVATION (0-4 ft)			Area 3 EXCAVATION (0-10 ft)			Area 4B EXCAVATION (0-10 ft)		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
SA-03	ACS-SA03-03	Aug-89	D-01-S	D01-S-IEA	Jul-97	D-01-S	D01-S-IEA	Jul-97	SA-01	ACS-SA01-03	Jul-89	SA-01	ACS-SA01-03	Jul-89	SD-28	APD-SD-28-01	May-96
SS101	ACS-SS101	Sep-97	D-02-S	D02-S-IEA	Jul-97	D-02-S	D02-S-IEA	Jul-97	SA-02	ACS-SA02-03	Jul-89	SA-02	ACS-SA02-03	Jul-89	SD-29	APD-SD-29-01	May-96
SS102	ACS-SS102	Sep-97	SA-01-S	SA01-S-IEA-01	Jul-97	SA-01-S	SA01-S-IEA-01	Jul-97	SB-031	ACS-SB31-02	May-90	SB-031	ACS-SB31-02	May-90	SD-29	APD-SD-29-01-RE	May-96
SS103	ACS-SS103	Sep-97	SA-01-S	SA01-S-IEA-02	Jul-97	SA-01-S	SA01-S-IEA-02	Jul-97	SB-032	ACS-SB32-02	May-90	SB-032	ACS-SB32-02	May-90	SD-29	APD-SD-29-91	May-96
SS103	ACS-SS103-DUP	Sep-97	SA-02-S	SA02-S-IEA	Jul-97	SA-02-S	SA02-S-IEA	Jul-97	SB-033	ACS-SB33-02	May-90	SB-033	ACS-SB33-02	May-90	SD-29	APD-SD-29-91-RE	May-96
SS104	ACS-SS104	Sep-97	SA-04-S	SA04-S-IEA	Jul-97	SA-04-S	SA04-S-IEA	Jul-97	SB-043	ACS-SB43-01	Jun-90	SB-043	ACS-SB43-01	Jun-90	SD-30	APD-SD-30-01	May-96
SS105	ACS-SS105	Sep-97	SB-081	SB81-04-FT	Jun-93	SB-004	ACS-SB04-05	Aug-89	SB-044	ACS-SB44-01	Jun-90	SB-044	ACS-SB44-01	Jun-90	ST-01	ACS-ST01-001	Sep-97
SS106	ACS-SS106	Sep-97	T-12-S	T12-S-IEA	Jul-97	SB-028	ACS-SB28-08	May-90	SB-045	ACS-SB45-01	Jun-90	SB-045	ACS-SB45-01	Jun-90	ST-02	ACS-ST02-001	Sep-97
SS107	ACS-SS107	Sep-97				SB-036	ACS-SB36-10	Jun-90	SB-046	ACS-SB46-01	Jun-90	SB-046	ACS-SB46-01	Jun-90			
SS108	ACS-SS108	Sep-97				SB-037	ACS-SB37-10	Jun-90	SB-047	ACS-SB47-01	Jun-90	SB-047	ACS-SB47-01	Jun-90			
SS109*	ACS-SS109	Sep-97				SB-038	ACS-SB38-10	Jun-90	SB-048	ACS-SB48-01	Jun-90	SB-048	ACS-SB48-01	Jun-90			
SS110*	ACS-SS110	Sep-97				SB-039	ACS-SB39-10	Jun-90	SB-050	ACS-SB50-01	Jun-90	SB-050	ACS-SB50-01	Jun-90			
SS111*	ACS-SS111	Sep-97				SB-040	ACS-SB40-10	Jun-90	SB-052	ACS-SB52-01	Jun-90	SB-052	ACS-SB52-01	Jun-90			
SS112*	ACS-SS112	Sep-97				SB-042	ACS-SB42-05.5	Jun-90	SB-053	ACS-SB53-01	Jun-90	SB-053	ACS-SB53-01	Jun-90			
SS113*	ACS-SS113	Sep-97				SB-077	SB77-07-FT	Jun-93	KP-01-S	KP01-S-IEA	Jul-97	KP-01-S	KP01-S-IEA	Jul-97			
FIRE POND	SS01	Sep-96				SB-077	SB77-09-FT	Jun-93	SB-001	ACS-SB01-03	Aug-89	SB-001	ACS-SB01-03	Aug-89			
FIRE POND	SS01-D	Sep-96				SB-078	SB78-07-FT	Jun-93	SB-086	SB86-03-FT	Jun-93	SB-086	SB86-03-FT	Jun-93			
FIRE POND	SS02	Sep-96				SB-078	SB78-10-FT	Jun-93	SP-01-S	SP01-S-IEA	Jul-97	SP-01-S	SP01-S-IEA	Jul-97			
SB-008	ACS-SB08-06	Aug-89				SB-079	SB79-06-FT	Jun-93	SP-02-S	SP02-S-IEA	Jul-97	SP-02-S	SP02-S-IEA	Jul-97			
SB-008	ACS-SB08-10	Aug-89				SB-079	SB79-08-FT	Jun-93	TP-01	ACS-TP01-03.5	Aug-89	TP-01	ACS-TP01-03.5	Aug-89			
SB-009	ACS-SB09-06	Aug-89				SB-080	SB80-06-FT	Jun-93				SB-001	ACS-SB01-09	Aug-89			
SB-009	ACS-SB09-10	Aug-89				SB-080	SB80-08-FT	Jun-93				SB-002	ACS-SB02-05.5	Aug-89			
SB-010	ACS-SB10-05	Aug-89				SB-081	SB81-04-FT	Jun-93				SB-002	ACS-SB02-07	Aug-89			
SB-010	ACS-SB10-10	Aug-89				SB-081	SB81-06-FT	Jun-93				SB-002	ACS-SB02-08.5	Aug-89			
SB-011	ACS-SB11-05	Aug-89				SB-082	SB82-04.5-FT	Jun-93				SB-029	ACS-SB29-08	May-90			
SB-011	ACS-SB11-10	Aug-89				SB-082	SB82-06.5-FT	Jun-93				SB-030	ACS-SB30-10	May-90			
SB-012	ACS-SB12-05	Aug-89				SB-083	SB83-06.5-FT	Jun-93				SB-041	ACS-SB41-05.5	Jun-90			
SB-012	ACS-SB12-10	Aug-89				SB-083	SB83-06.5-FT-(91)	Jun-93				SB-043	ACS-SB43-04.5	Jun-90			
SB-013	ACS-SB13-05	Aug-89				T-12-S	T12-S-IEA	Jul-97				SB-044	ACS-SB44-04.5	Jun-90			
SB-013	ACS-SB13-10	Aug-89										SB-045	ACS-SB45-04.5	Jun-90			
SB-016	ACS-SB16-06	Sep-89										SB-046	ACS-SB46-04.5	Jun-90			
SB-017	ACS-SB17-06.5	Sep-89										SB-047	ACS-SB47-04.5	Jun-90			
SB-018	ACS-SB18-07	Sep-89										SB-048	ACS-SB48-04.5	Jun-90			
SB-020	ACS-SB20-07	May-90										SB-049	ACS-SB49-04.5	Jun-90			
SB-021	ACS-SB21-07	May-90										SB-050	ACS-SB50-04.5	Jun-90			
SB-055	ACS-SB55-07	Jun-90										SB-051	ACS-SB51-04.5	Jun-90			
SB-056	ACS-SB56-07	Jun-90										SB-052	ACS-SB52-04.5	Jun-90			
SB-057	ACS-SB57-07	Jun-90										SB-053	ACS-SB53-04.5	Jun-90			
SB-058	ACS-SB58-07	Jun-90										SB-054	ACS-SB54-04.5	Jun-90			
SB-059	ACS-SB59-07	Jun-90										SB-084	SB84-05-FT	Jun-93			
SB-060	ACS-SB60-07	Jun-90										SB-085	SB85-05-FT	Jun-93			
SB-061	ACS-SB61-07	Jun-90										SB-087	SB87-07-FT	Jun-93			
SB-062	ACS-SB62-07	Jun-90										SB-088	SB88-07.5-FT	Jun-93			
SB-063	ACS-SB63-07	Jun-90										TP-01	ACS-TP01-06	Aug-89			
SB-064	ACS-SB64-07	Jun-90															
SB-065	ACS-SB65-07	Jun-90															
SB-066	ACS-SB66-07	Jun-90															
SB-067	ACS-SB67-07	Jun-90															
SB-068	ACS-SB68-07	Jun-90															
SB-069	ACS-SB69-08	Jun-90															
SB-070	ACS-SB70-08	Jun-90															
SB-071	ACS-SB71-08	Jun-90															
SB-072	ACS-SB72-08	Jun-90															

Table 2-1c: Surface/Subsurface Soil and Waste Samples - For Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN
SAMPLES INCLUDED IN RISK CALCULATIONS (a)

	Area 1 EXCAVATION (0-10 ft)		Area 2 EXCAVATION (0-4 ft)	Area 2 EXCAVATION (0-10 ft)	Area 3 EXCAVATION (0-4 ft)	Area 3 EXCAVATION (0-10 ft)	Area 4B EXCAVATION (0-10 ft)
SB-073	ACS-SB73-05	Jun-90					
SB-074	ACS-SB74-05	Jun-90					
SB-089	SB89-03-FT	Jun-93					
SB-089	SB89-05-FT	Jun-93					
SB-089	SB89-05-FT-(91)	Jun-93					
SB-090	SB90-03-FT	Jun-93					
SB-090	SB90-05-FT	Jun-93					
SB-090	SB90-05-FT-(91)	Jun-93					
SB-091	SB91-03-FT	Jun-93					
SB-091	SB91-05-FT	Jun-93					
SB-092	SB92-03-FT	Jun-93					
SB-092	SB92-05-FT	Jun-93					
SB-093	SB93-03-FT	Jun-93					
SB-093	SB93-05-FT	Jun-93					
SB-094	SB94-03-FT	Jun-93					
SB-094	SB94-05-FT	Jun-93					
SB-095	SB95-03-FT	Jun-93					
SB-096	SB96-03-FT	Jun-93					
SB-110	ACS-SB110-SS4-07-09'	Jan-96					
SB-113	ACS-SB113-SS4-07-09'	Jan-96					
SB-113	ACS-SB113-SS4-07-09'-DIL	Jan-96					
SB-118	ACS-SB118-SS3-06-08'	Jan-96					
SB-119	ACS-SB119-SS3-06-08'	Jan-96					
SB-127	ACS-SB127-SS3-06-08'	Jan-96					
SB-127	ACS-SB127-SS3-06-08'-DIL	Jan-96					
SB-128	ACS-SB128-SS3-06-08'	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DIL	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DUP	Jan-96					
SB-128	ACS-SB128-SS3-06-08'-DUP-DIL	Jan-96					
TP-02	ACS-TP02-03	Aug-89					
TP-02	ACS-TP02-05	Aug-89					
TP-03	ACS-TP03-09	Aug-89					
TP-04	ACS-TP04-08	Aug-89					
TP-05	ACS-TP05-03	Aug-89					
TP-06	ACS-TP06-04	Aug-89					
TP-07	ACS-TP07-03	Aug-89					

Note:
Duplicate samples were denoted with a "DUP" or "-101" in the Sample ID, and averaged with the associated sample prior to data summary or risk calculations.
(a) All samples collected from 0-4 feet, or from 0-10 feet, were included in risk calculations for excavation.

Table 2-1d: Deep Soil Samples
ACS NPL Site, Griffith, IN
SAMPLES NOT INCLUDED IN RISK CALCULATIONS (a)

Area 1 DEEP (>10 ft)			Area 2 DEEP (>10 ft)			Area 3 DEEP (>10 ft)		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
SB-014	ACS-SB14-11	Sep-89	SB-003	ACS-SB03-12	Aug-89	SB-041	ACS-SB41-23.5	Jun-90
SB-015	ACS-SB15-13	Sep-89	SB-003	ACS-SB03-17	Aug-89	SB-087	SB87-11-FT	Jun-93
SB-021	ACS-SB21-12	May-90	SB-003	ACS-SB03-20	Aug-89	SB-088	SB88-10.5-FT	Jun-93
SB-022	ACS-SB22-12	May-90	SB-004A	ACS-SB04A-19	Aug-89			
SB-023	ACS-SB23-12	May-90	SB-005	ACS-SB05-14	Aug-89			
SB-035	ACS-SB35-17	May-90	SB-005	ACS-SB05-17	Aug-89			
SB-055	ACS-SB55-16	Jun-90	SB-006	ACS-SB06-11.5	Aug-89			
SB-056	ACS-SB56-16	Jun-90	SB-006	ACS-SB06-15	Aug-89			
SB-057	ACS-SB57-16	Jun-90	SB-007	ACS-SB07-14	Aug-89			
SB-058	ACS-SB58-16	Jun-90	SB-007	ACS-SB07-19	Aug-89			
SB-059	ACS-SB59-16	Jun-90	SB-024R	ACS-SB24-12	May-90			
SB-060	ACS-SB60-16	Jun-90	SB-024R	ACS-SB24-21	May-90			
SB-061	ACS-SB61-16	Jun-90	SB-024R	ACS-SB24R-26	Jun-90			
SB-062	ACS-SB62-16	Jun-90	SB-025R	ACS-SB25-11	May-90			
SB-063	ACS-SB63-15.5	Jun-90	SB-025R	ACS-SB25-21	May-90			
SB-064	ACS-SB64-16	Jun-90	SB-025R	ACS-SB25R-29	Jun-90			
SB-065	ACS-SB65-16	Jun-90	SB-026R	ACS-SB26-11	May-90			
SB-066	ACS-SB66-16	Jun-90	SB-026R	ACS-SB26-21	May-90			
SB-067	ACS-SB67-16	Jun-90	SB-026R	ACS-SB26R-26	Jun-90			
SB-068	ACS-SB68-16	Jun-90	SB-027R	ACS-SB27-11	May-90			
SB-069	ACS-SB69-21.5	Jun-90	SB-027R	ACS-SB27-21	May-90			
SB-070	ACS-SB70-20.5	Jun-90	SB-027RR	ACS-SB27RR-24	Jun-90			
SB-071	ACS-SB71-20.5	Jun-90	SB-036	ACS-SB36-17	Jun-90			
SB-072	ACS-SB72-20.5	Jun-90	SB-036	ACS-SB36-23.5	Jun-90			
SB-073	ACS-SB73-19	Jun-90	SB-037	ACS-SB37-17	Jun-90			
SB-074	ACS-SB74-19	Jun-90	SB-037	ACS-SB37-23.5	Jun-90			
SB-075	ACS-SB75-15	Jun-90	SB-038	ACS-SB38-20	Jun-90			
SB-112	ACS-SB112-SS5-09-11'	Jan-96	SB-038	ACS-SB38-23.5	Jun-90			
SB-112	ACS-SB112-SS5-09-11'-DIL	Jan-96	SB-039	ACS-SB39-17	Jun-90			
SB-124	ACS-SB124-SS4-08.5-10.5'	Jan-96	SB-039	ACS-SB39-23.5	Jun-90			
SB-124	ACS-SB124-SS4-08.5-10.5'-DIL	Jan-96	SB-042	ACS-SB42-20	Jun-90			
SB-129	ACS-SB129-SS5-11-13'	Jan-96	SB-083	SB83-10.5-FT	Jun-93			
SB-129	ACS-SB129-SS5-11-13'-DIL	Jan-96	SB-214	ACS-SB214-SS6-13.5-15.5'	Jan-96			
			SB-214	ACS-SB214-SS6-13.5-15.5'-DIL	Jan-96			

Note:

(a) Direct exposure to deep soil (I.e., greater than 10 feet below ground surface) is not expected to occur under current or future land use so these samples were not included in risk calculations.

Table 2-2: Sediment Samples
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS

Area 1			Area 2			Area 4A (a)			Area 4B			Area 6		
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
SD-01	ACS-SD-01-01	Jul-89	SD-15	ACS-SD-15-01	Jul-90	SD-17	APD-SD-17-01	May-96	SD-28	APD-SD-28-01	May-96	SD-06	ACS-SD-06-01	Jul-89
SD-02	ACS-SD-02-01	Jul-89	SD-05	ACS-SD-05-01	Jul-89	SD-17	APD-SD-17-01-RE	May-96	SD-29	APD-SD-29-01	May-96	SD-13	ACS-SD-13-01	May-90
						SD-32	APD-SD-32-01	May-96	SD-29	APD-SD-29-01-RE	May-96	SD-14	ACS-SD-14-01	May-90
						A-02	APD-SD-A02 (0.5)	Nov-96	SD-29	APD-SD-29-91	May-96	ST-04	ACS-ST04-001	Sep-97
						A-05	APD-SD-A05 (0.5)	Nov-96	SD-29	APD-SD-29-91-RE	May-96	ST-04	ACS-ST04-101	Sep-97
						A-05	APD-SD-A05 (1.5)	Nov-96	SD-30	APD-SD-30-01	May-96	ST-05	ACS-ST05-001	Sep-97
						A-09	APD-SD-A09 (0.5)	Nov-96	ST-01	ACS-ST01-001	Sep-97	ST-06	ACS-ST06-001	Sep-97
						A-10	APD-SD-A10 (0.5)	Nov-96	ST-02	ACS-ST02-001	Sep-97	ST-07	ACS-ST07-001	Sep-97
						B-01	APD-SD-B01 (0.5)	Nov-96				ST-08	ACS-ST08-001	Sep-97
						B-04	APD-SD-B04 (0.5)	Nov-96				ST-09	ACS-ST09-001	Sep-97
						B-05	APD-SD-B05 (0.5)	Nov-96				ST-10	ACS-ST10-001	Sep-97
						B-05	APD-SD-B05 (1.0)	Nov-96				ST-11	ACS-ST11-001	Sep-97
						B-06	APD-SD-B06 (0.5)	Nov-96						
						B-07	APD-SD-B07 (0.5)	Nov-96						
						B-08	APD-SD-B08 (0.5)	Nov-96						
						B-09	APD-SD-B09 (0.5)	Nov-96						
						B-09	APD-SD-B09 (1.0)	Nov-96						
						B-10	APD-SD-B10 (0.5)	Nov-96						
						B-10	APD-SD-B10 (1.0)	Nov-96						
						B-11	APD-SD-B11 (0.5)	Nov-96						
						C-02	APD-SD-C02 (0.5)	Nov-96						
						C-04	APD-SD-C04 (0.5)	Nov-96						
						C-05	APD-SD-C05 (0.5)	Nov-96						
						C-05	APD-SD-C05 (1.0)	Nov-96						
						C-05	APD-SD-C05 (1.5)	Nov-96						
						C-06	APD-SD-C06 (0.5)	Nov-96						
						C-06	APD-SD-C06 (1.0)	Nov-96						
						C-07	APD-SD-C07 (0.5)	Nov-96						
						C-07	APD-SD-C07 Dup (0.5)	Nov-96						
						C-07	APD-SD-C07 (1.0)	Nov-96						
						C-07	APD-SD-C07 (1.5)	Nov-96						
						C-08	APD-SD-C08 (0.5)	Nov-96						
						C-08	APD-SD-C08 (1.0)	Nov-96						
						C-09	APD-SD-C09 (1.0)	Nov-96						
						C-10	APD-SD-C10 (0.5)	Nov-96						
						C-10	APD-SD-C10 (1.0)	Nov-96						
						C-11	APD-SD-C11 (0.5)	Nov-96						
						C-11	APD-SD-C11 (1.0)	Nov-96						
						C-11	APD-SD-C11 (1.5)	Nov-96						
						D-03	APD-SD-D03 (0.5)	Nov-96						
						D-06	APD-SD-D06 (0.5)	Nov-96						
						D-07	APD-SD-D07 (0.5)	Nov-96						
						D-08	APD-SD-D08 (0.5)	Nov-96						
						D-09	APD-SD-D09 (0.5)	Nov-96						
						D-10	APD-SD-D10 (0.5)	Nov-96						
						D-11	APD-SD-D11 (0.5)	Nov-96						
						D-11	APD-SD-D11 (1.0)	Nov-96						
						DOWNSTREAM	APD-Culvert Downstream (0.5)	Nov-96						
						OUTFALL	APD-Culvert Outfall (0.5)	Nov-96						
						OUTFALL	APD-Culvert Outfall (1.0)	Nov-96						
						SD-03	ACS-SD-03-01	Jul-89						
						SD-04	ACS-SD-04-01	Jul-89						
						SD-07A	ACS-SD-07A-01	Jul-89						
						SD-07B	ACS-SD-07B-01	Jul-89						

SAMPLES NOT INCLUDED IN RISK CALCULATIONS

Location	Sample ID	Date	
SD-08	ACS-SD-08-01	Jul-89	(a)
SD-09	ACS-SD-09-01	Jul-89	(a)
ST-03	ACS-ST03-001	Sep-97	(b)

Table 2-2: Sediment Samples
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS															SAMPLES NOT INCLUDED IN RISK CALCULATIONS		
Area 1			Area 2			Area 4A (a)			Area 4B			Area 6					
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
						SD-07C	ACS-SD-07C-01	Jul-89									
						SD-10	ACS-SD-10-01	May-90									
						SD-11	ACS-SD-11-01	May-90									
						SD-12	ACS-SD-12-01	May-90									
						SD-16	ACS-SD-16-01	Jul-90									
						SD-18	APD-SD-18-01	May-96									
						SD-18	APD-SD-18-91	May-96									
						SD-19	APD-SD-19-01	May-96									
						SD-20	APD-SD-20-01	May-96									
						SD-20	APD-SD-20-01-RE	May-96									
						SD-21	APD-SD-21-01	May-96									
						SD-21	APD-SD-21-01-RE	May-96									
						SD-22	APD-SD-22-01	May-96									
						SD-22	APD-SD-22-01-RE	May-96									
						SD-22	APD-SD-22-91	May-96									
						SD-23	APD-SD-23-01	May-96									
						SD-23	APD-SD-23-01-RE	May-96									
						SD-24	APD-SD-24-01	May-96									
						SD-25	APD-SD-25-01	May-96									
						SD-26	APD-SD-26-01	May-96									
						SD-26	APD-SD-26-91	May-96									
						SD-27	APD-SD-27-01	May-96									
						SD-31	APD-SD-31-01	May-96									
						SD-33	APD-SD-33-01	May-96									
						SD-33	APD-SD-33-01-RE	May-96									
						SD-34	APD-SD-34-01	May-96									
						SD-35	APD-SD-35-01	May-96									
						SD-35	APD-SD-35-01-RE	May-96									
						SD-36	APD-SD-36-01	May-96									
						SD-37	APD-SD-37-01	May-96									
						SD-38	APD-SD-38-01	May-96									
						T-1 (A)	APD-SD-T1 (A) (0.5)	Nov-96									
						T-1 (B)	APD-SD-T1 (B) (0.5)	Nov-96									
						T-1 (B)	APD-SD-T1 (B) (1.0)	Nov-96									
						T-1 (C)	APD-SD-T1 (C) (0.5)	Nov-96									
						T-1 (C)	APD-SD-T1 (C) (1.0)	Nov-96									
						T-1 (D)	APD-SD-T1 (D) (0.5)	Nov-96									
						T-1 (D)	APD-SD-T1 (D) (1.0)	Nov-96									
						T-1 (E)	APD-SD-T1 (E) (0.5)	Nov-96									
						T-2 (A)	APD-SD-T2 (A) (0.5)	Nov-96									
						T-2 (A)	APD-SD-T2 (A) (1.0)	Nov-96									
						T-2 (B)	APD-SD-T2 (B) (0.5)	Nov-96									
						T-2 (B)	APD-SD-T2 (B) (1.0)	Nov-96									
						T-2 (C)	APD-SD-T2 (C) (0.5)	Nov-96									
						T-2 (C)	APD-SD-T2 (C) (1.0)	Nov-96									
						T-2 (C)	APD-SD-T2 (C) (1.5)	Nov-96									
						T-2 (D)	APD-SD-T2 (D) (0.5)	Nov-96									
						T-2 (D)	APD-SD-T2 (D) (1.0)	Nov-96									
						T-2 (D)	APD-SD-T2 (D) (1.5)	Nov-96									
						T-2 (E)	APD-SD-T2 (E) (0.5)	Nov-96									
						T-3 (A)	APD-SD-T3 (A) (0.5)	Nov-96									
						T-3 (A)	APD-SD-T3 (A) (1.0)	Nov-96									
						T-3 (A)	APD-SD-T3 (A) (1.5)	Nov-96									
						T-3 (B)	APD-SD-T3 (B) (0.5)	Nov-96									

Table 2-2: Sediment Samples
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS															SAMPLES NOT INCLUDED IN RISK CALCULATIONS		
Area 1			Area 2			Area 4A (a)			Area 4B			Area 6					
Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date	Location	Sample ID	Date
						T-3 (B)	APD-SD-T3 (B) (1.0)	Nov-96									
						T-3 (B)	APD-SD-T3 (B) (1.5)	Nov-96									
						T-3 (C)	APD-SD-T3 (C) (1.0)	Nov-96									
						T-3 (D)	APD-SD-T3 (D) (0.5)	Nov-96									
						T-3 (D)	APD-SD-T3 (D) (1.0)	Nov-96									
						T-3 (E)	APD-SD-T3 (E) (0.5)	Nov-96									
						T-4 (A)	APD-SD-T4 (A) (0.5)	Nov-96									
						T-4 (B)	APD-SD-T4 (B) (0.5)	Nov-96									
						T-4 (C)	APD-SD-T4 (C) (1.0)	Nov-96									
						T-4 (C)	APD-SD-T4 (C) (1.5)	Nov-96									
						T-4 (D)	APD-SD-T4 (D) (0.5)	Nov-96									
						UPSTREAM1	APD-Culvert Upstream (1) (0.5)	Nov-96									
						UPSTREAM2	APD-Culvert Upstream (2) (0.5)	Nov-96									

Note:
Duplicate samples were denoted with "-91", "Dup", or "-101" in the Sample ID, and were averaged with the associated sample prior to data summary or risk calculations.
(a) Sediment samples from Area 5 were collected near several industrial properties and so were not included in risk calculations. Soil samples collected at residential properties adjacent to the Site were used to evaluate residential exposure instead.
(b) The sample from Turkey Creek was collected over a mile from the site near Broad Street and there is no evidence or reason to believe that it is connected to the site. It is therefore not grouped with samples from Area 6, and not included in risk calculations.

Table 2-3a: Ground Water Samples Collected from Upper Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS

AREA 1			AREA 4B (a)			AREA 5A			AREA 5B		
Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date
MW-02	MW02-01-1989	Aug-89	MW-03	MW03-01-1989	Aug-89	MW-06	MW06-01-1989	Aug-89	MW-48	MW48-01-1996	Aug-96
MW-02	MW02-02-1990	May-90	MW-03	MW03-02-1990	May-90	MW-06	MW06-02-1990	May-90	MW-48	MW48-01-1997	Mar-97
MW-03	MW03-01-1989	Aug-89	MW-03	MW03-01-1994	Dec-94	MW-06	MW06-01-1994	Dec-94	MW-48	MW48-01-1997-EPA	Mar-97
MW-03	MW03-02-1990	May-90	MW-04	MW04-01-1989	Aug-89	MW-06	MW06-01-1996	Nov-96	MW-48	MW48-02-1997	Jun-97
MW-03	MW03-01-1994	Dec-94	MW-04	MW04-02-1990	May-90	MW-06	MW06-01-1997-EPA	Mar-97	MW-48	MW48-03-1997	Sep-97
MW-04	MW04-01-1989	Aug-89	MW-04	MW04-01-1994	Dec-94	MW-06	MW06-01-1997-EPA-DUP	Mar-97	MW-48	MW48-04-1997	Dec-97
MW-04	MW04-02-1990	May-90	MW-11	MW11-01-1990	May-90	MW-06	MW06-01-1997	Apr-97			
MW-04	MW04-01-1994	Dec-94	MW-11	MW11-02-1990	Jul-90	MW-06	MW06-02-1997	Jul-97			
MW-05	MW05-01-1989	Aug-89	MW-11	MW11-03-1991	Jan-91	MW-06	MW06-03-1997	Sep-97			
MW-05	MW05-02-1990	May-90	MW-11	MW11-04-1991	Aug-91	MW-06	MW06-04-1997	Dec-97			
MW-05	MW05-01-1994	Dec-94	MW-11	MW11-01-1995	Jan-95	MW-45	MW45-01-1996	Aug-96			
			MW-11	MW11-01-1996	Nov-96	MW-45	MW45-01-1997	Apr-97			
			MW-11	MW11-01RE-1996	Nov-96	MW-45	MW45-01-1997-DUP	Apr-97			
			MW-11	MW11-01-1997	Mar-97	MW-45	MW45-02-1997	Jun-97			
			MW-11	MW11-02-1997	Jun-97	MW-45	MW45-03-1997	Sep-97			
			MW-11	MW11-03-1997	Sep-97	MW-45	MW45-04-1997	Dec-97			
			MW-11	MW11-04-1997	Dec-97						
			MW-39	MW39-01-1996	Aug-96						
			MW-39	MW39-01-1997	Mar-97						
			MW-39	MW39-02-1997	Jun-97						
			MW-39	MW39-03-1997	Sep-97						
			MW-39	MW39-04-1997	Dec-97						
			MW-48	MW48-01-1996	Aug-96						
			MW-48	MW48-01-1997	Mar-97						
			MW-48	MW48-01-1997-EPA	Mar-97						
			MW-48	MW48-02-1997	Jun-97						
			MW-48	MW48-03-1997	Sep-97						
			MW-48	MW48-04-1997	Dec-97						
			MW-49	MW49-01-1996	Aug-96						
			MW-49	MW49-01-1996-DUP	Aug-96						
			MW-49	MW49-01-1997	Apr-97						
			MW-49	MW49-02-1997	Jun-97						
			MW-49	MW49-02-1997-DUP	Jun-97						
			MW-49	MW49-03-1997	Sep-97						
			MW-49	MW49-03-1997-DUP	Sep-97						
			MW-49	MW49-04-1997	Dec-97						

SAMPLES NOT INCLUDED IN RISK CALCULATIONS

Well	Sample ID	Date	
M-1S	M01S-01-1997	Mar-97	(b,d)
M-1S	M01S-02-1997	Jun-97	(b,d)
M-1S	M01S-03-1997	Sep-97	(b,d)
M-1S	M01S-04-1997	Dec-97	(b,d)
M-2S	M02S-02-1997	Jun-97	(b,d)
M-3S	M03S-01-1997	Mar-97	(b,d)
M-3S	M03S-01-1997	Mar-97	(b,d)
M-3S	M03S-01-1997-DUP	Mar-97	(b,d)
M-3S	M03S-01-1997-DUP	Mar-97	(b,d)
M-3S	M03S-01-1997-EPA	Mar-97	(b,d)
M-3S	M03S-02-1997	Jun-97	(b,d)
M-3S	M03S-03-1997	Sep-97	(b,d)
M-3S	M03S-03-1997-DUP	Sep-97	(b,d)
M-3S	M03S-04-1997	Dec-97	(b,d)
M-3S	M03S-04-1997-DUP	Dec-97	(b,d)
M-4S	M04S-01-1995	Jan-95	(b,d)
M-4S	M04S-01-1997	Mar-97	(b,d)
M-4S	M04S-01-1997-EPA	Mar-97	(b,d)
M-4S	M04S-02-1997	Jun-97	(b,d)
M-4S	M04S-03-1997	Sep-97	(b,d)
M-4S	M04S-04-1997	Dec-97	(b,d)
MW-01	MW01-01-1989	Aug-89	(b,d)
MW-03	MW03-01F-1994	Dec-94	(c)
MW-05	MW05-01F-1994	Dec-94	(c)
MW-06	MW06-01F-1994	Dec-94	(c)
MW-06	MW06-01F-1996	Nov-96	(c)
MW-11	MW11-01F-1995	Jan-95	(c)
MW-11	MW11-01F-1996	Nov-96	(c)
MW-12	MW12-01-1990	May-90	(d)
MW-12	MW12-01-1995	Jan-95	(d)
MW-12	MW12-01-1996	Nov-96	(d)
MW-12	MW12-01-1996-DUP	Nov-96	(d)
MW-12	MW12-01-1997	Mar-97	(d)
MW-12	MW12-01F-1995	Jan-95	(c,d)
MW-12	MW12-01F-1996	Nov-96	(c,d)
MW-12	MW12-01F-1996-DUP	Nov-96	(c,d)
MW-12	MW12-02-1990	Jul-90	(d)
MW-12	MW12-02-1997	Jun-97	(d)
MW-12	MW12-03-1991	Jan-91	(d)
MW-12	MW12-03-1997	Oct-97	(d)
MW-12	MW12-04-1991	Aug-91	(d)
MW-12	MW12-04-1997	Dec-97	(d)
MW-13	MW13-01-1990	May-90	(b,d)
MW-13	MW13-01-1995	Jan-95	(b,d)
MW-13	MW13-01-1996	Nov-96	(b,d)
MW-13	MW13-01-1997	Mar-97	(b,d)
MW-13	MW13-01F-1995	Jan-95	(b,c,d)
MW-13	MW13-01F-1996	Nov-96	(b,c,d)
MW-13	MW13-02-1990	Jul-90	(b,d)
MW-13	MW13-02-1997	Jun-97	(b,d)
MW-13	MW13-03-1991	Jan-91	(b,d)
MW-13	MW13-03-1997	Oct-97	(b,d)
MW-13	MW13-04-1991	Aug-91	(b,d)

Table 2-3a: Ground Water Samples Collected from Upper Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS

AREA 1			AREA 4B (a)			AREA 5A			AREA 5B		
Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date

SAMPLES NOT INCLUDED IN RISK CALCULATIONS

Well	Sample ID	Date	
MW-13	MW13-04-1997	Dec-97	(b,d)
MW-14	MW14-01-1990	May-90	(b,d)
MW-14	MW14-01-1995	Jan-95	(b,d)
MW-14	MW14-01-1996	Nov-96	(b,d)
MW-14	MW14-01-1997	Mar-97	(b,d)
MW-14	MW14-01-1997-EPA	Mar-97	(b,d)
MW-14	MW14-01F-1995	Jan-95	(b,c)
MW-14	MW14-01F-1996	Nov-96	(b,c,d)
MW-14	MW14-02-1990	Jul-90	(b,d)
MW-14	MW14-02-1997	Jun-97	(b,d)
MW-14	MW14-03-1991	Jan-91	(b,d)
MW-14	MW14-03-1997	Sep-97	(b,d)
MW-14	MW14-04-1991	Aug-91	(b,d)
MW-15	MW15-01-1990	May-90	(b,d)
MW-15	MW15-01-1995	Jan-95	(b,d)
MW-15	MW15-01-1996	Nov-96	(b,d)
MW-15	MW15-01-1997	Apr-97	(b,d)
MW-15	MW15-01-1997-EPA	Mar-97	(b,d)
MW-15	MW15-01F-1995	Jan-95	(b,c,d)
MW-15	MW15-01F-1996	Nov-96	(b,c,d)
MW-15	MW15-02-1990	Jul-90	(b,d)
MW-15	MW15-02-1997	Jun-97	(b,d)
MW-15	MW15-03-1991	Jan-91	(b,d)
MW-15	MW15-03-1997	Sep-97	(b,d)
MW-15	MW15-04-1991	Aug-91	(b,d)
MW-15	MW15-04-1991-DUP	Aug-91	(b,d)
MW-15	MW15-04-1997	Dec-97	(b,d)
MW-16	MW16-01-1990	May-90	(b,d)
MW-16	MW16-01-1995	Jan-95	(b,d)
MW-16	MW16-01F-1995	Jan-95	(b,c,d)
MW-16	MW16-02-1990	Jul-90	(b,d)
MW-17	MW17-01-1990	May-90	(d)
MW-17	MW17-01-1994	Dec-94	(d)
MW-17	MW17-01F-1994	Dec-94	(c,d)
MW-17	MW17-02-1990	Jul-90	(d)
MW-18	MW18-01-1994	Dec-94	(d)
MW-18	MW18-01-1996	Nov-96	(d)
MW-18	MW18-01-1997	Mar-97	(d)
MW-18	MW18-01F-1994	Dec-94	(c,d)
MW-18	MW18-01F-1996	Nov-96	(c,d)
MW-18	MW18-02-1990	Jul-90	(d)
MW-18	MW18-02-1997	Jun-97	(d)
MW-18	MW18-03-1997	Sep-97	(d)
MW-18	MW18-04-1997	Dec-97	(d)
MW-19	MW19-01-1991	Jan-91	(d)
MW-19	MW19-01-1991-DUP	Jan-91	(d)
MW-19	MW19-01-1994	Dec-94	(d)
MW-19	MW19-01-1996	Nov-96	(d)
MW-19	MW19-01-1997	Mar-97	(d)
MW-19	MW19-01F-1994	Dec-94	(c,d)
MW-19	MW19-01F-1996	Nov-96	(c,d)
MW-19	MW19-02-1991	Aug-91	(d)

Table 2-3a: Ground Water Samples Collected from Upper Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS												SAMPLES NOT INCLUDED IN RISK CALCULATIONS			
AREA 1			AREA 4B (a)			AREA 5A			AREA 5B						
Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	
												MW-19	MW19-02-1997	Jun-97	(d)
												MW-19	MW19-03-1997	Sep-97	(d)
												MW-19	MW19-04-1997	Dec-97	(d)
												MW-20	MW20-01-1991	Jan-91	(d)
												MW-20	MW20-01-1994	Dec-94	(d)
												MW-20	MW20-01F-1994	Dec-94	(c,d)
												MW-20	MW20-02-1997	Aug-91	(d)
												MW-37	MW37-01-1996	Aug-96	(d)
												MW-37	MW37-01-1997	Mar-97	(d)
												MW-37	MW37-01F-1996	Aug-96	(c,d)
												MW-37	MW37-02-1997	Jun-97	(d)
												MW-37	MW37-03-1997	Sep-97	(d)
												MW-37	MW37-03-1997-DUP	Sep-97	(d)
												MW-37	MW37-04-1997	Dec-97	(d)
												MW-38	MW38-01-1996	Aug-96	(d)
												MW-38	MW38-01-1997	Mar-97	(d)
												MW-38	MW38-01F-1996	Aug-96	(c,d)
												MW-38	MW38-02-1997	Jun-97	(d)
												MW-38	MW38-03-1997	Sep-97	(d)
												MW-38	MW38-04-1997	Dec-97	(d)
												MW-39	MW39-01F-1996	Aug-96	(c)
												MW-40	MW40-01-1996	Aug-96	(d)
												MW-40	MW40-01-1997	Mar-97	(d)
												MW-40	MW40-01-1997-EPA	Mar-97	(d)
												MW-40	MW40-01F-1996	Aug-96	(c,d)
												MW-40	MW40-02-1997	Jun-97	(d)
												MW-40	MW40-03-1997	Sep-97	(d)
												MW-40	MW40-03-1997-DUP	Sep-97	(d)
												MW-40	MW40-04-1997	Dec-97	(d)
												MW-40	MW40-04-1997-DUP	Dec-97	(d)
												MW-41	MW41-01-1996	Aug-96	(d)
												MW-41	MW41-01-1997	Mar-97	(d)
												MW-41	MW41-01F-1996	Aug-96	(c,d)
												MW-41	MW41-02-1997	Jun-97	(d)
												MW-41	MW41-02-1997-DUP	Jun-97	(d)
												MW-41	MW41-03-1997	Sep-97	(d)
												MW-41	MW41-04-1997	Dec-97	(d)
												MW-42	MW42-01-1996	Aug-96	(d)
												MW-42	MW42-01-1997	Mar-97	(d)
												MW-42	MW42-01-1997-EPA	Mar-97	(d)
												MW-42	MW42-01F-1996	Aug-96	(c,d)
												MW-42	MW42-02-1997	Jun-97	(d)
												MW-42	MW42-02-1997-DUP	Jun-97	(d)
												MW-42	MW42-03-1997	Sep-97	(d)
												MW-42	MW42-04-1997	Dec-97	(d)
												MW-43	MW43-01-1996	Aug-96	(d)
												MW-43	MW43-01-1997	Mar-97	(d)
												MW-43	MW43-01F-1996	Aug-96	(c,d)
												MW-43	MW43-02-1997	Jun-97	(d)
												MW-43	MW43-03-1997	Sep-97	(d)
												MW-43	MW43-04-1997	Dec-97	(d)

Table 2-3a: Ground Water Samples Collected from Upper Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS												SAMPLES NOT INCLUDED IN RISK CALCULATIONS			
AREA 1			AREA 4B (a)			AREA 5A			AREA 5B						
Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	Well	Sample ID	Date	
												MW-44	MW44-01-1996	Aug-96	(d)
												MW-44	MW44-01-1997	Mar-97	(d)
												MW-44	MW44-01-1997-DUP	Mar-97	(d)
												MW-44	MW44-01F-1996	Aug-96	(c,d)
												MW-44	MW44-02-1997	Jun-97	(d)
												MW-44	MW44-03-1997	Sep-97	(d)
												MW-44	MW44-04-1997	Dec-97	(d)
												MW-45	MW45-01F-1996	Aug-96	(c)
												MW-46	MW46-01-1996	Aug-96	(b,d)
												MW-46	MW46-01-1997	Mar-97	(b,d)
												MW-46	MW46-01F-1996	Aug-96	(b,c,d)
												MW-46	MW46-02-1997	Jun-97	(b,d)
												MW-46	MW46-03-1997	Sep-97	(b,d)
												MW-46	MW46-04-1997	Dec-97	(b,d)
												MW-47	MW47-01-1996	Aug-96	(b,d)
												MW-47	MW47-01-1996-DUP	Aug-96	(b,d)
												MW-47	MW47-01-1997	Mar-97	(b,d)
												MW-47	MW47-01F-1996	Aug-96	(b,c,d)
												MW-47	MW47-01F-1996-DUP	Aug-96	(b,c,d)
												MW-47	MW47-02-1997	Jun-97	(b,d)
												MW-47	MW47-04-1997	Dec-97	(b,d)
												MW-47	MW47-04-1997-DUP	Dec-97	(b,d)
												MW-48	MW48-01F-1996	Aug-96	(c)
												MW-49	MW49-01F-1996	Aug-96	(c)
												MW-49	MW49-01F-1996-DUP	Aug-96	(c)

Note: Duplicate samples, denoted with "-DUP" in the Sample ID, were averaged with the associated sample prior to data summary or risk calculations.

(a) No Upper Aquifer wells are located within Area 4B, so samples from the closest Upper Aquifer wells in neighboring areas are used to estimate concentrations in Area 4B.

(b) Monitoring well was not included in risk calculations because it is located in an area where no residential or industrial well is expected to be installed (i.e., wetlands, Griffith Municipal Landfill, or gas pipeline right-of-way).

(c) Consistent with USEPA Region 5 guidance, filtered (dissolved) samples, denoted with an "F-" in the Sample ID, were NOT included in the data summary and risk calculations. Total (nondissolved) analytical results for the samples were used instead.

(d) Consistent with USEPA Region 5 guidance, this monitoring well was not included in risk calculations because it is not located in the center of the off-site plume. Limiting calculations to data from wells in the center of the plume provides a conservative estimate of risk for locations outside the plume (i.e., more likely to overestimate than underestimate risk).

Table 2-3b: Ground Water Samples Collected from Lower Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS

OVERALL (a)

Well	SampleID	Date
ATMW-4D	ATMW4D-01-1997-EPA	Apr-97
IW1	IW1-1997	Nov-97
IW1	IW1-1997-DUP	Nov-97
IW2	IW2-1997	Nov-97
IW3	IW3-1997	Nov-97
IW4	IW4-1997	Nov-97
IW4	IW4-1997-DUP	Nov-97
IW6	IW6-1997	Nov-97
M-4D	M04D-01-1995	Jan-95
M-4D	M04D-01-1997	Mar-97
M-4D	M04D-01-1997-EPA	Mar-97
M-4D	M04D-02-1997	Jun-97
M-4D	M04D-03-1997	Sep-97
M-4D	M04D-04-1997	Dec-97
MW-07	MW07-01-1990	May-90
MW-07	MW07-02-1990	Jul-90
MW-07	MW07-03-1991	Jan-91
MW-07	MW07-03-1991-DUP	Jan-91
MW-07	MW07-01-1995	Jan-95
MW-07	MW07-01-1995-DUP	Jan-95
MW-07	MW07-01-1996	Nov-96
MW-07	MW07-01-1997	Mar-97
MW-07	MW07-02-1997	Jun-97
MW-07	MW07-03-1997	Sep-97
MW-07	MW07-04-1997	Dec-97
MW-08	MW08-01-1990	May-90
MW-08	MW08-02-1990	Jul-90
MW-08	MW08-03-1991	Jan-91
MW-08	MW08-01-1994	Dec-94
MW-08	MW08-01-1996	Nov-96
MW-08	MW08-01-1997	Mar-97
MW-08	MW08-02-1997	Jun-97
MW-08	MW08-03-1997	Sep-97
MW-08	MW08-04-1997	Dec-97
MW-08	MW08-04-1997-DUP	Dec-97
MW-09	MW09-01-1990	May-90
MW-09	MW09-02-1990	Jul-90
MW-09	MW09-03-1991	Jan-91
MW-09	MW09-01-1995	Jan-95
MW-09	MW09-01-1996	Nov-96
MW-09	MW09-01-1997-EPA	Mar-97
MW-09	MW09-01-1997	Apr-97
MW-09	MW09-02-1997	Jun-97
MW-09	MW09-02-1997-DUP	Jun-97
MW-09	MW09-03-1997	Sep-97
MW-10	MW10-01-1990	May-90
MW-10	MW10-02-1990	Jul-90
MW-10	MW10-03-1991	Jan-91
MW-10	MW10-01-1995	Jan-95
MW-10C	MW10C-01-1990	Jul-90
MW-10C	MW10C-03-1991	Jan-91
MW-10C	MW10C-01-1996	Nov-96
MW-10C	MW10C-01-1997	Mar-97
MW-10C	MW10C-01-1997-EPA	Mar-97
MW-10C	MW10C-02-1997	Jun-97
MW-10C	MW10C-02-1997-DUP	Jun-97
MW-10C	MW10C-03-1997	Sep-97
MW-21	MW21-01-1991	Jan-91
MW-21	MW21-01-1995	Jan-95
MW-21	MW21-01-1995-DUP	Jan-95
MW-21	MW21-01-1996	Nov-96
MW-21	MW21-01-1997	Mar-97
MW-21	MW21-02-1997	Jun-97
MW-21	MW21-03-1997	Oct-97

AREA 5A (b)

Well	SampleID	Date
MW-07	MW07-01-1990	May-90
MW-07	MW07-02-1990	Jul-90
MW-07	MW07-03-1991	Jan-91
MW-07	MW07-03-1991-DUP	Jan-91
MW-07	MW07-01-1995	Jan-95
MW-07	MW07-01-1995-DUP	Jan-95
MW-07	MW07-01-1996	Nov-96
MW-07	MW07-01-1997	Mar-97
MW-07	MW07-02-1997	Jun-97
MW-07	MW07-03-1997	Sep-97
MW-07	MW07-04-1997	Dec-97
MW-22	MW22-01-1991	Jan-91
MW-22	MW22-01-1994	Dec-94
MW-22	MW22-01-1994-DUP	Dec-94
MW-22	MW22-01-1996	Nov-96
MW-22	MW22-01-1997	Mar-97
MW-22	MW22-02-1997	Jul-97
MW-22	MW23-03-1997	Sep-97
MW-22	MW22-04-1997	Dec-97
MW-28	MW28-1996	Mar-96
MW-28	MW28-01-1997	Mar-97
MW-28	MW28-01-1997-EPA	Mar-97
MW-28	MW28-02-1997	Jun-97
MW-28	MW28-03-1997	Sep-97
MW-28	MW28-04-1997	Dec-97
MW-36	MW36-1996	Mar-96
MW-36	MW36-01-1997	Mar-97
MW-36	MW36-02-1997	Jun-97
MW-36	MW36-03-1997	Sep-97
MW-36	MW36-04-1997	Dec-97
MW-50	MW50-01-1996	Nov-96
MW-50	MW50-01-1997	Mar-97
MW-50	MW50-01-1997-DUP	Mar-97
MW-50	MW50-02-1997	Jun-97

SAMPLES NOT INCLUDED IN RISK CALCULATIONS

Well	SampleID	Date	
MW-07	MW07-01F-1995	Jan-95	(c)
MW-07	MW07-01F-1995-DUP	Jan-95	(c)
MW-08	MW08-01F-1994	Dec-94	(c)
MW-08	MW08-01F-1996	Nov-96	(c)
MW-09	MW09-01F-1995	Jan-95	(c)
MW-09	MW09-01F-1996	Nov-96	(c)
MW-10	MW10-01F-1995	Jan-95	(c)
MW-10C	MW10C-01F-1996	Nov-96	(c)
MW-21	MW21-01F-1995	Jan-95	(c)
MW-21	MW21-01F-1995-DUP	Jan-95	(c)
MW-22	MW22-01F-1994	Dec-94	(c)
MW-22	MW22-01F-1994-DUP	Dec-94	(c)
MW-22	MW22-01F-1996	Nov-96	(c)
MW-23	MW23-01F-1995	Jan-95	(c)
MW-23	MW23-01F-1996	Nov-96	(c)
MW-24	MW24-01F-1995	Jan-95	(c)
MW-24	MW24-01F-1996	Nov-96	(c)
MW-28	MW28F-1996	Mar-96	(c)
MW-29	MW29F-1996	Mar-96	(c)
MW-30	MW30F-1996	Mar-96	(c)
MW-31	MW31F-1996	Mar-96	(c)
MW-32	MW32F-1996	Mar-96	(c)
MW-33	MW33F-1996	Mar-96	(c)
MW-34	MW34F-1996	Mar-96	(c)
MW-35	MW35F-1996	Mar-96	(c)
MW-36	MW36F-1996	Mar-96	(c)
MW-50	MW50-01F-1996	Nov-96	(c)
MW-51	MW51-01F-1996	Nov-96	(c)
MW-51	MW51-01F-1996-DUP	Nov-96	(c)
MW-52	MW52-01F-1996	Dec-96	(c)
MW-53	MW53-01F-1996	Dec-96	(c)
MW-54	MW54-01F-1996	Dec-96	(c)
MW-55	MW55-01F-1996	Dec-96	(c)
MW-55	MW55-01F-1996-DUP	Dec-96	(c)

Table 2-3b: Ground Water Samples Collected from Lower Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS						SAMPLES NOT INCLUDED IN RISK CALCULATIONS		
OVERALL (a)			AREA 5A (b)					
Well	SampleID	Date	Well	SampleID	Date	Well	SampleID	Date
MW-22	MW22-01-1991	Jan-91						
MW-22	MW22-01-1994	Dec-94						
MW-22	MW22-01-1994-DUP	Dec-94						
MW-22	MW22-01-1996	Nov-96						
MW-22	MW22-01-1997	Mar-97						
MW-22	MW22-02-1997	Jul-97						
MW-22	MW22-03-1997	Sep-97						
MW-22	MW22-04-1997	Dec-97						
MW-23	MW23-01-1991	Jan-91						
MW-23	MW23-01-1995	Jan-95						
MW-23	MW23-01-1996	Nov-96						
MW-23	MW23-01-1997	Mar-97						
MW-23	MW23-01-1997-EPA	Mar-97						
MW-23	MW23-02-1997	Jun-97						
MW-23	MW23-02-1997-DUP	Jun-97						
MW-23	MW23-03-1997	Sep-97						
MW-23	MW23-04-1997	Dec-97						
MW-24	MW24-01-1991	Jan-91						
MW-24	MW24-01-1995	Jan-95						
MW-24	MW24-01-1996	Nov-96						
MW-24	MW24-01-1997	Mar-97						
MW-24	MW24-02-1997	Jun-97						
MW-24	MW24-03-1997	Sep-97						
MW-24	MW24-04-1997	Dec-97						
MW-28	MW28-1996	Mar-96						
MW-28	MW28-01-1997	Mar-97						
MW-28	MW28-01-1997-EPA	Mar-97						
MW-28	MW28-02-1997	Jun-97						
MW-28	MW28-03-1997	Sep-97						
MW-28	MW28-04-1997	Dec-97						
MW-29	MW29-1996	Mar-96						
MW-29	MW29-01-1997	Mar-97						
MW-29	MW29-02-1997	Jun-97						
MW-29	MW29-03-1997	Sep-97						
MW-30	MW30-1996	Mar-96						
MW-30	MW30-01-1997	Mar-97						
MW-30	MW30-02-1997	Jun-97						
MW-30	MW30-03-1997	Oct-97						
MW-30	MW30-04-1997	Dec-97						
MW-31	MW31-1996	Mar-96						
MW-31	MW31-01-1997	Mar-97						
MW-31	MW31-02-1997	Jun-97						
MW-31	MW31-03-1997	Sep-97						
MW-31	MW31-04-1997	Dec-97						
MW-32	MW32-1996	Mar-96						
MW-32	MW32-1996-DUP	Mar-96						
MW-32	MW32-01-1997	Mar-97						
MW-32	MW32-02-1997	Jun-97						
MW-32	MW32-03-1997	Sep-97						
MW-32	MW32-04-1997	Dec-97						
MW-33	MW33-1996	Mar-96						
MW-33	MW33-01-1997	Mar-97						
MW-33	MW33-02-1997	Jun-97						
MW-33	MW33-03-1997	Oct-97						
MW-33	MW33-04-1997	Dec-97						
MW-34	MW34-1996	Mar-96						
MW-34	MW34-01-1997	Mar-97						
MW-34	MW34-02-1997	Jun-97						
MW-34	MW34-03-1997	Sep-97						
MW-34	MW34-04-1997	Dec-97						
MW-35	MW35-1996	Mar-96						
MW-36	MW36-1996	Mar-96						
MW-36	MW36-01-1997	Mar-97						
MW-36	MW36-02-1997	Jun-97						

Table 2-3b: Ground Water Samples Collected from Lower Aquifer
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS						SAMPLES NOT INCLUDED IN RISK CALCULATIONS		
OVERALL (a)			AREA 5A (b)					
Well	SampleID	Date	Well	SampleID	Date	Well	SampleID	Date
MW-36	MW36-03-1997	Sep-97						
MW-36	MW36-04-1997	Dec-97						
MW-50	MW50-01-1996	Nov-96						
MW-50	MW50-01-1997	Mar-97						
MW-50	MW50-01-1997-DUP	Mar-97						
MW-50	MW50-02-1997	Jun-97						
MW-51	MW51-01-1996	Nov-96						
MW-51	MW51-01-1996-DUP	Nov-96						
MW-51	MW51-01-1997	Mar-97						
MW-51	MW51-01-1997-EPA	Mar-97						
MW-51	MW51-02-1997	Jun-97						
MW-51	MW51-03-1997	Oct-97						
MW-51	MW51-04-1997	Dec-97						
MW-52	MW52-01-1996	Dec-96						
MW-52	MW52-01-1997	Mar-97						
MW-52	MW52-02-1997	Jun-97						
MW-52	MW52-03-1997	Sep-97						
MW-52	MW52-04-1997	Dec-97						
MW-53	MW53-01-1996	Dec-96						
MW-53	MW53-01-1997	Mar-97						
MW-53	MW53-01-1997-DUP	Mar-97						
MW-53	MW53-02-1997	Jun-97						
MW-53	MW53-03-1997	Sep-97						
MW-53	MW53-04-1997	Dec-97						
MW-54	MW54-01-1996	Dec-96						
MW-54	MW54-01-1997	Mar-97						
MW-54	MW54-02-1997	Jun-97						
MW-54	MW54-03-1997	Sep-97						
MW-54	MW54-04-1997	Dec-97						
MW-55	MW55-01-1996	Dec-96						
MW-55	MW55-01-1996-DUP	Dec-96						
MW-55	MW55-01-1997	Mar-97						
MW-55	MW55-02-1997	Jun-97						
MW-55	MW55-03-1997	Sep-97						
MW-55	MW55-04-1997	Dec-97						

Note Duplicate samples (i.e., with "-DUP" in the Sample ID), were averaged with the associated sample prior to data summary and risk calculations.

(a) At the request of USEPA, all Production Well and On-site Lower Aquifer Monitoring Well samples were used to evaluate hypothetical future on-site ground water use.

(b) All Off-site Lower Aquifer Monitoring Well samples (all located in Area 5A) were used to evaluate hypothetical future off-site ground water use.

(c) Consistent with USEPA Region 5 guidance, filtered (dissolved) samples, denoted with an "F-" in the Sample ID, were NOT included in the data summary and risk calculations. Total (unfiltered) analytical results were included in the data summary and risk calculations instead. By not including filtered samples, risk calculations are conservative, i.e., more likely to overestimate than underestimate risk.

Table 2-3c: Ground Water Samples Collected from Private Wells ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS AREAS 5A/5B/6 (a)			SAMPLES NOT INCLUDED IN RISK CALCULATIONS AREA 5B			
Well	SampleID	Date	Well	SampleID	Date	
PW-01/Y	PW01-01-1990	Jun-90	PW-06	PW06-01-1990	Jun-90	(b)
PW-02/D	PW02-01-1990	Jun-90	PW-07	PW07-01-1990	Jun-90	(b)
PW-03	PW03-01-1990	Jun-90				
PW-04	PW04-01-1990	Jun-90				
PW-05/T	PW05-01-1990	Jun-90				
PW-08/B	PW08-01-1990	Jun-90				
PW-09	PW09-01-1991	Jan-91				
PW-10	PW10-01-1991	Jan-91				
PW-10	PW10-01-1991-DUP	Jan-91				
PW-A	PWA-01-1997-EPA	Mar-97				
PW-A	PWA-01-1997	Mar-97				
PW-08/B	PWB-01-1997-EPA	Mar-97				
PW-08/B	PWB-01-1997	Mar-97				
PW-C	PWC-01-1997-EPA	Mar-97				
PW-C	PWC-01-1997	Mar-97				
PW-02/D	PWD-01-1997	Apr-97				
PW-02/D	PWD-02-1997	Oct-97				
PW-I	PWI-01-1997-EPA	Mar-97				
PW-I	PWI-01-1997	Mar-97				
PW-I	PWI-01-1997-DUP	Mar-97				
PW-J	PWJ-01-1997	Mar-97				
PW-K	PWK-01-1997	Mar-97				
PW-K	PWK-02-1997	Oct-97				
PW-L	PWL-01-1997	Apr-97				
PW-N	PWN-01-1997	Mar-97				
PW-RC	PWRC-01-1997	Apr-97				
PW-RC	PWRC-02-1997	Oct-97				
PW-RE	PWRE-01-1997	Apr-97				
PW-RE	PWRE-01-1997-DUP	Apr-97				
PW-RE	PWRE-02-1997	Oct-97				
PW-RW	PWRW-01-1997	Apr-97				
PW-S	PWS-01-1997	Mar-97				
PW-05/T	PWT-01-1997	Mar-97				
PW-U	PWU-01-1997	Apr-97				
PW-V	PWV-01-1997	Apr-97				
PW-W	PWW-01-1997	Apr-97				
PW-X	PWX-01-1997	Apr-97				
PW-01/Y	PWY-02-1997	Oct-97				
PW-01/Y	PWY-02-1997-DUP	Oct-97				
PW-Z	PWZ-02-1997	Oct-97				

Note: Duplicate samples (i.e., with "-DUP" in the Sample ID), were averaged with the associated sample prior to data summary and risk calculations.

(a) Private Well samples were used to evaluate current off-site ground water use.

(b) Industrial Wells: PW-06 and PW-07 are closed wells from an off-site industrial property. Analytical data for these wells are not included in risk calculations for off-site residences since not in residential area.

Table 2-4: Surface Water Samples
ACS NPL Site, Griffith, IN

SAMPLES INCLUDED IN RISK CALCULATIONS (a)												SAMPLES NOT INCLUDED IN RISK CALCULATIONS			
Area 1			Area 2			Area 4A			Area 4B			Area 5			
Location	SampleID	Date	Location	SampleID	Date	Location	SampleID	Date	Location	SampleID	Date	Location	SampleID	Date	
SW-01	ACS-SW01-01	Jul-89	SW-05	ACS-SW05-01	Jul-89	SW-07A	ACS-SW07A-01	Jul-89	SW497	97ZB04S21	Apr-97	SW-08	ACS-SW08-01	Jul-89	(a)
SW-02	ACS-SW02-01	Jul-89				SW-09	APD-SW09-01	May-96				SW-14	APD-SW14-01	May-96	(a)
						SW-10	APD-SW10-01	May-96							
						SW-11	APD-SW11-01	May-96							
						SW-12	APD-SW12-01	May-96							
						SW-13	APD-SW13-01	May-96							
						SW-15	APD-SW15-01	May-96							
						SW-15	APD-SW15-91	May-96							
						SW-16	APD-SW16-01	May-96							
						SW-17	APD-SW17-01	May-96							
						SW-18	APD-SW18-01	May-96							
						SW-19	APD-SW19-01	May-96							
						SW-20	APD-SW20-01	May-96							
						SW-20	APD-SW20-91	May-96							
						Outfall	97ZB02S05	Dec-96							

Note:
Duplicate samples: denoted with "-91" in the Sample ID, and were averaged with the associated sample prior to data summary and risk calculations.
(a) Surface water samples from Area 5 were collected near several industrial properties and so were not included in risk calculations for residents.

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SURFACE (0-2')	VOC	1,1,2-Trichloroethane	79-00-5	14	1	1.3E-02	7.3E-02	1.6E-01	1.3E-02	SS103-AVG	Sep-97	Yes	1.3E-02
1	SURFACE (0-2')	VOC	1,2-Dichloroethene (total)	540-59-0	14	2	6.5E-03	7.3E-02	1.6E-01	1.2E-02	ACS-SS108	Sep-97	Yes	1.2E-02
1	SURFACE (0-2')	VOC	Carbon Disulfide	75-15-0	14	1	2.0E-03	7.2E-02	1.6E-01	2.0E-03	ACS-SS112	Sep-97	Yes	2.0E-03
1	SURFACE (0-2')	VOC	Chloroform	67-66-3	14	2	2.0E-03	7.2E-02	1.6E-01	3.0E-03	ACS-SS109	Sep-97	Yes	3.0E-03
1	SURFACE (0-2')	VOC	Tetrachloroethene	127-18-4	14	4	2.7E-02	1.5E-01	3.5E-01	1.6E+00	ACS-SS101	Sep-97	Yes	3.5E-01
1	SURFACE (0-2')	VOC	Toluene	108-88-3	14	2	3.3E-01	6.3E-02	1.3E-01	4.8E-01	ACS-SS101	Sep-97	Yes	1.3E-01
1	SURFACE (0-2')	VOC	Trichloroethene	79-01-6	14	4	2.0E-03	4.5E-02	9.5E-02	2.2E-01	ACS-SS101	Sep-97	Yes	9.5E-02
1	SURFACE (0-2')	VOC	Xylenes (total)	1330-20-7	14	2	6.5E-01	1.7E+00	4.6E+00	2.3E+01	ACS-SS101	Sep-97	Yes	4.6E+00
1	SURFACE (0-2')	SVOC	2-Methylnaphthalene	91-57-6	14	1	3.4E-01	2.7E-01	3.4E-01	3.4E-01	SS103-AVG	Sep-97	Yes	3.4E-01
1	SURFACE (0-2')	SVOC	3,3'-Dichlorobenzidine	91-94-1	14	1	2.1E-01	2.6E-01	3.3E-01	2.1E-01	ACS-SS101	Sep-97	Yes	2.1E-01
1	SURFACE (0-2')	SVOC	Acenaphthylene	208-96-8	14	1	5.7E-01	2.9E-01	3.7E-01	5.7E-01	SS103-AVG	Sep-97	Yes	3.7E-01
1	SURFACE (0-2')	SVOC	Anthracene	120-12-7	14	2	5.5E-02	2.4E-01	3.2E-01	8.9E-02	SS103-AVG	Sep-97	Yes	8.9E-02
1	SURFACE (0-2')	SVOC	Benzo(a)anthracene	56-55-3	14	2	4.4E-02	2.4E-01	3.2E-01	5.9E-02	ACS-SS107	Sep-97	Yes	5.9E-02
1	SURFACE (0-2')	SVOC	Benzo(a)pyrene	50-32-8	14	3	5.9E-02	2.3E-01	3.2E-01	8.3E-02	SS103-AVG	Sep-97	Yes	8.3E-02
1	SURFACE (0-2')	SVOC	Benzo(b)fluoranthene	205-99-2	14	3	8.2E-02	2.4E-01	3.2E-01	8.6E-02	ACS-SS109	Sep-97	Yes	8.6E-02
1	SURFACE (0-2')	SVOC	Benzo(k)fluoranthene	207-08-9	14	2	6.5E-02	2.4E-01	3.2E-01	7.3E-02	SS103-AVG	Sep-97	Yes	7.3E-02
1	SURFACE (0-2')	SVOC	Chrysene	218-01-9	14	3	5.9E-02	2.3E-01	3.2E-01	7.4E-02	ACS-SS109	Sep-97	Yes	7.4E-02
1	SURFACE (0-2')	SVOC	Di-n-butylphthalate	84-74-2	14	1	5.1E-02	2.5E-01	3.3E-01	5.1E-02	ACS-SA03-03	Aug-89	Yes	5.1E-02
1	SURFACE (0-2')	SVOC	Di-n-octylphthalate	117-84-0	14	2	4.9E-02	2.3E-01	3.1E-01	1.1E-01	ACS-SS101	Sep-97	Yes	1.1E-01
1	SURFACE (0-2')	SVOC	Fluoranthene	206-44-0	14	3	6.7E-02	2.4E-01	3.2E-01	9.8E-02	ACS-SS107	Sep-97	Yes	9.8E-02
1	SURFACE (0-2')	SVOC	Hexachlorobenzene	118-74-1	14	1	2.9E-02	2.5E-01	3.3E-01	2.9E-02	ACS-SS110	Sep-97	Yes	2.9E-02
1	SURFACE (0-2')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	14	1	4.4E-02	2.5E-01	3.2E-01	4.4E-02	ACS-SS109	Sep-97	Yes	4.4E-02
1	SURFACE (0-2')	SVOC	Isophorone	78-59-1	14	4	3.7E-02	2.2E-01	3.0E-01	1.4E-01	ACS-SS101	Sep-97	Yes	1.4E-01
1	SURFACE (0-2')	SVOC	Phenanthrene	85-01-8	14	2	5.0E-02	2.4E-01	3.2E-01	6.1E-02	ACS-SS107	Sep-97	Yes	6.1E-02
1	SURFACE (0-2')	SVOC	Pyrene	129-00-0	14	3	9.5E-02	2.4E-01	3.2E-01	1.2E-01	SS103-AVG	Sep-97	Yes	1.2E-01
1	SURFACE (0-2')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	14	14	7.0E-02	2.4E+00	1.2E+01	9.8E+00	ACS-SS112	Sep-97	Yes	9.8E+00
1	SURFACE (0-2')	P/PCB	Aroclor-1242	53469-21-9	14	4	3.9E-02	2.3E-01	4.0E-01	1.5E+00	SS103-AVG	Sep-97	Yes	4.0E-01
1	SURFACE (0-2')	P/PCB	Aroclor-1248	12672-29-6	14	1	2.2E+00	2.7E-01	5.3E-01	2.2E+00	ACS-SS102	Sep-97	Yes	5.3E-01
1	SURFACE (0-2')	P/PCB	Aroclor-1254	11097-69-1	14	11	8.0E-02	1.5E+00	2.4E+00	5.5E+00	ACS-SS101	Sep-97	Yes	2.4E+00
1	SURFACE (0-2')	P/PCB	Aroclor-1260	11096-82-5	14	2	2.1E-01	2.8E-01	5.0E-01	1.7E+00	SS103-AVG	Sep-97	Yes	5.0E-01
1	SURFACE (0-2')	P/PCB	Endrin ketone	53494-70-5	14	1	1.1E-02	4.1E-02	9.6E-02	1.1E-02	ACS-SS106	Sep-97	Yes	1.1E-02
1	SURFACE (0-2')	INORG	Aluminum	7429-90-5	14	14	3.6E+03	1.1E+04	1.7E+04	2.5E+04	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Antimony	7440-36-0	13	4	5.3E-01	4.3E-01	7.2E-01	1.8E+00	SS103-AVG	Sep-97	Yes	7.2E-01
1	SURFACE (0-2')	INORG	Arsenic	7440-38-2	14	14	1.5E+00	2.4E+00	2.8E+00	3.3E+00	ACS-SS113	Sep-97	Yes	2.8E+00
1	SURFACE (0-2')	INORG	Barium	7440-39-3	14	13	3.8E+01	1.2E+02	1.5E+02	2.4E+02	ACS-SS109	Sep-97	Yes	1.5E+02
1	SURFACE (0-2')	INORG	Beryllium	7440-41-7	14	14	7.0E-02	2.2E+00	3.1E+00	5.8E+00	ACS-SS109	Sep-97	Yes	3.1E+00
1	SURFACE (0-2')	INORG	Cadmium	7440-43-9	14	14	2.7E-01	1.1E+00	1.7E+00	5.2E+00	ACS-SS101	Sep-97	Yes	1.7E+00
1	SURFACE (0-2')	INORG	Calcium	7440-70-2	14	14	3.7E+02	6.0E+04	8.4E+04	1.7E+05	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Chromium (total)	7440-47-3	14	14	1.1E+01	2.4E+01	3.2E+01	7.1E+01	ACS-SS101	Sep-97	Yes	3.2E+01
1	SURFACE (0-2')	INORG	Cobalt	7440-48-4	14	13	1.3E+00	2.8E+00	3.6E+00	4.5E+00	ACS-SS101	Sep-97	Yes	3.6E+00
1	SURFACE (0-2')	INORG	Copper	7440-50-8	14	14	9.7E+00	2.1E+01	2.7E+01	5.5E+01	ACS-SS110	Sep-97	Yes	2.7E+01
1	SURFACE (0-2')	INORG	Cyanide (total)	57-12-5	14	8	4.3E-01	5.8E-01	7.8E-01	1.2E+00	ACS-SS107	Sep-97	Yes	7.8E-01
1	SURFACE (0-2')	INORG	Iron	7439-89-6	14	14	2.1E+03	6.3E+03	8.5E+03	1.5E+04	ACS-SS101	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Lead	7439-92-1	14	14	2.3E+01	8.4E+01	1.3E+02	3.6E+02	ACS-SS101	Sep-97	Yes	1.3E+02
1	SURFACE (0-2')	INORG	Magnesium	7439-95-4	14	14	5.6E+02	1.5E+04	2.1E+04	3.7E+04	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Manganese	7439-96-5	14	14	1.9E+01	8.9E+02	1.2E+03	2.5E+03	ACS-SS109	Sep-97	Yes	1.2E+03
1	SURFACE (0-2')	INORG	Mercury	7439-97-6	9	8	7.0E-02	6.2E-01	5.6E+00	3.9E+00	SS103-AVG	Sep-97	Yes	3.9E+00
1	SURFACE (0-2')	INORG	Nickel	7440-02-0	14	13	4.9E+00	6.7E+00	7.7E+00	1.2E+01	ACS-SS101	Sep-97	Yes	7.7E+00
1	SURFACE (0-2')	INORG	Potassium	7440-09-7	14	14	2.6E+02	1.4E+03	2.5E+03	3.7E+03	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Selenium	7782-49-2	14	2	4.2E-01	3.3E-01	4.3E-01	5.0E-01	ACS-SS101	Sep-97	Yes	4.3E-01
1	SURFACE (0-2')	INORG	Silver	7440-22-4	14	4	1.8E-01	2.1E-01	3.4E-01	2.9E-01	ACS-SS109	Sep-97	Yes	2.9E-01
1	SURFACE (0-2')	INORG	Sodium	7440-23-5	14	13	5.8E+01	5.0E+02	7.0E+02	1.3E+03	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Vanadium	7440-62-2	14	14	6.7E+00	1.0E+01	1.2E+01	1.8E+01	ACS-SS109	Sep-97	Yes	1.2E+01
1	SURFACE (0-2')	INORG	Zinc	7440-66-6	14	14	4.6E+01	8.1E+01	9.7E+01	1.8E+02	ACS-SS101	Sep-97	Yes	9.7E+01
1	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	63	37	2.0E-03	7.3E+02	1.5E+03	2.1E+04	ACS-TP07-03	Aug-89	Yes	1.5E+03
1	SUBSURFACE (2-10')	VOC	1,1,2,2-Tetrachloroethane	79-34-5	63	4	2.0E-03	2.4E+03	5.5E+03	3.9E+00	ACS-SB11-10	Aug-89	Yes	3.9E+00

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent[a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
1	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	63	5	2.0E-03	8.2E+01	1.9E+02	8.1E+00	ACS-TP04-08	Aug-89	Yes	8.1E+00
1	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	49	8	2.0E-03	1.0E+02	2.4E+02	2.2E+01	ACS-SB16-06	Sep-89	Yes	2.2E+01
1	SUBSURFACE (2-10')	VOC	1,1-Dichloroethene	75-35-4	63	1	6.7E-01	8.2E+01	1.9E+02	6.7E-01	SB91-03-FT	Jun-93	No (f)	
1	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	63	5	1.0E-03	8.2E+01	1.9E+02	4.0E+01	ACS-SB17-06.5	Sep-89	Yes	4.0E+01
1	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	47	23	2.0E-03	1.1E+02	2.6E+02	2.4E+02	ACS-SB110-SS4-07-09'	Jan-96	Yes	2.4E+02
1	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	63	7	1.0E-03	8.3E+01	1.9E+02	2.2E+01	ACS-TP03-09	Aug-89	Yes	2.2E+01
1	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	63	18	1.5E-02	1.9E+02	4.0E+02	5.3E+02	ACS-TP03-09	Aug-89	Yes	4.0E+02
1	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	63	31	2.0E-03	2.1E+02	4.2E+02	1.5E+03	ACS-TP06-04	Aug-89	Yes	4.2E+02
1	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	62	6	8.8E-02	1.9E+02	4.0E+02	6.5E+02	SB92-03-FT	Jun-93	Yes	4.0E+02
1	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	62	35	1.0E-03	1.3E+02	3.2E+02	7.1E+03	ACS-TP02-03	Aug-89	Yes	3.2E+02
1	SUBSURFACE (2-10')	VOC	Carbon Tetrachloride	56-23-5	63	2	5.3E+02	1.4E+02	2.9E+02	3.6E+03	ACS-TP07-03	Aug-89	No (f)	
1	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	62	6	2.0E-03	8.3E+01	1.9E+02	1.0E+01	SB91-05-FT	Jun-93	Yes	1.0E+01
1	SUBSURFACE (2-10')	VOC	Chloroethane	75-00-3	63	1	1.2E-02	1.5E+02	3.6E+02	1.2E-02	SB-089-AVG	Jun-93	No (f)	
1	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	63	20	1.0E-03	1.6E+02	2.9E+02	2.1E+03	ACS-TP03-09	Aug-89	Yes	2.9E+02
1	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	63	57	2.0E-03	3.8E+02	5.9E+02	6.7E+03	ACS-TP02-03	Aug-89	Yes	5.9E+02
1	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	63	14	3.1E-02	1.8E+02	3.5E+02	5.7E+02	SB93-05-FT	Jun-93	Yes	3.5E+02
1	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	63	7	1.0E-03	8.5E+01	1.9E+02	9.0E+01	ACS-TP07-03	Aug-89	Yes	9.0E+01
1	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	63	45	2.0E-03	4.4E+02	7.3E+02	8.3E+03	ACS-SB110-SS4-07-09'	Jan-96	Yes	7.3E+02
1	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	49	42	4.0E-03	5.4E+03	1.2E+04	2.0E+05	ACS-TP02-03	Aug-89	Yes	1.2E+04
1	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	63	32	4.0E-03	2.0E+02	3.4E+02	2.8E+03	ACS-SB110-SS4-07-09'	Jan-96	Yes	3.4E+02
1	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	49	45	1.1E-02	1.8E+03	2.8E+03	2.5E+04	ACS-TP02-03	Aug-89	Yes	2.8E+03
1	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	16	4	2.1E-02	8.1E+01	1.4E+06	1.2E+03	SB92-03-FT	Jun-93	Yes	1.2E+03
1	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	14	13	1.9E-01	8.8E+02	1.6E+03	5.5E+03	SB92-03-FT	Jun-93	Yes	1.6E+03
1	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	14	13	1.2E-01	1.8E+02	3.3E+02	1.1E+03	SB92-03-FT	Jun-93	Yes	3.3E+02
1	SUBSURFACE (2-10')	SVOC	1,2,4-Trichlorobenzene	120-82-1	46	4	1.2E+00	4.9E+00	7.7E+00	4.3E+00	ACS-SB17-06.5	Sep-89	Yes	4.3E+00
1	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	30	16	1.1E-01	1.0E+01	1.5E+01	5.3E+01	ACS-SB17-06.5	Sep-89	Yes	1.5E+01
1	SUBSURFACE (2-10')	SVOC	1,3-Dichlorobenzene	541-73-1	30	4	1.1E-01	6.8E+00	1.1E+01	8.8E-01	ACS-SB69-08	Jun-90	Yes	8.8E-01
1	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	44	7	5.7E-01	5.0E+00	8.0E+00	5.2E+00	ACS-SB17-06.5	Sep-89	Yes	5.2E+00
1	SUBSURFACE (2-10')	SVOC	2,4,5-Trichlorophenol	95-95-4	32	1	2.7E-01	3.2E+01	5.2E+01	2.7E-01	ACS-SB11-10	Aug-89	No (f)	
1	SUBSURFACE (2-10')	SVOC	2,4-Dichlorophenol	120-83-2	32	3	8.9E-02	6.5E+00	1.1E+01	4.1E+00	ACS-SB17-06.5	Sep-89	Yes	4.1E+00
1	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	32	10	7.6E-02	6.8E+00	1.1E+01	1.2E+01	ACS-TP02-03	Aug-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	SVOC	2-Chloronaphthalene	91-58-7	32	1	*1.8E+00*	*6.8E+00*	*1.1E+01*	*1.8E+00*	*ACS-SB70-08*	*Jun-90*	No (f)	
1	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	32	23	1.5E-01	4.7E+01	7.2E+01	3.2E+02	ACS-SB70-08	Jun-90	Yes	7.2E+01
1	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	30	10	4.2E-02	6.9E+00	1.1E+01	1.5E+01	ACS-SB17-06.5	Sep-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	SVOC	4-Bromophenyl-phenylether	101-55-3	32	1	2.2E+00	6.8E+00	1.1E+01	2.2E+00	ACS-SB20-07	May-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	32	13	5.9E-02	8.2E+00	1.3E+01	4.3E+01	ACS-SB17-06.5	Sep-89	Yes	1.3E+01
1	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	32	10	6.0E-02	2.7E+01	4.7E+01	1.1E+01	ACS-TP02-03	Aug-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	SVOC	Acenaphthylene	208-96-8	32	3	3.4E-01	6.5E+00	1.0E+01	5.5E+00	ACS-TP02-03	Aug-89	Yes	5.5E+00
1	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	32	4	2.2E-02	6.5E+00	1.0E+01	1.1E+00	ACS-SB70-08	Jun-90	Yes	1.1E+00
1	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	32	1	1.7E-01	6.8E+00	1.1E+01	1.7E-01	ACS-SB10-05	Aug-89	No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	46	1	1.8E-01	5.1E+00	7.9E+00	1.8E-01	SS01-AVG	Sep-96	No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	46	2	1.8E-01	5.0E+00	7.9E+00	3.9E-01	ACS-SB70-08	Jun-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	46	1	1.8E-01	5.1E+00	7.9E+00	1.8E-01	SS01-AVG	Sep-96	No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	46	2	1.8E-01	5.0E+00	7.9E+00	3.9E-01	ACS-SB70-08	Jun-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	29	4	4.9E-02	3.5E+01	5.6E+01	1.3E+01	ACS-SB73-05	Jun-90	Yes	1.3E+01
1	SUBSURFACE (2-10')	SVOC	Benzyl Alcohol	100-51-6	30	1	1.4E+00	6.9E+00	1.1E+01	1.4E+00	ACS-SB73-05	Jun-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	32	21	1.9E-01	7.1E+01	1.3E+02	9.6E+02	ACS-TP06-04	Aug-89	Yes	1.3E+02
1	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	46	2	8.4E-02	5.0E+00	7.9E+00	2.6E-01	ACS-SB70-08	Jun-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	46	25	1.6E-01	5.4E+01	8.6E+01	6.9E+02	ACS-TP06-04	Aug-89	Yes	8.6E+01
1	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	32	10	7.7E-02	6.1E+00	1.0E+01	2.4E+01	ACS-TP06-04	Aug-89	Yes	1.0E+01
1	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	32	3	4.5E-01	6.4E+00	1.0E+01	4.2E+00	ACS-TP02-03	Aug-89	Yes	4.2E+00
1	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	32	15	4.6E-02	9.7E+00	1.6E+01	1.0E+02	ACS-TP06-04	Aug-89	Yes	1.6E+01
1	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	32	12	4.2E-02	3.0E+01	5.4E+01	3.2E+02	ACS-TP06-04	Aug-89	Yes	5.4E+01
1	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	32	8	5.4E-02	6.1E+00	1.0E+01	3.8E+00	ACS-TP02-03	Aug-89	Yes	3.8E+00
1	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	32	10	1.1E-01	6.5E+00	1.0E+01	1.4E+01	ACS-TP02-03	Aug-89	Yes	1.0E+01
1	SUBSURFACE (2-10')	SVOC	Hexachlorobenzene	118-74-1	46	2	5.2E-01	5.0E+00	7.9E+00	5.9E-01	SB90-03-FT	Jun-93	No (f)	

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SUBSURFACE (2-10')	SVOC	Hexachlorobutadiene	87-68-3	46	11	2.1E-01	4.4E+00	6.0E+00	2.2E+01	ACS-TP05-03	Aug-89	Yes	6.0E+00
1	SUBSURFACE (2-10')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	46	1	1.8E-01	5.1E+00	7.9E+00	1.8E-01	SS01-AVG	Sep-96	No (f)	
1	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	46	17	4.1E-02	1.1E+02	2.2E+02	2.6E+03	ACS-TP06-04	Aug-89	Yes	2.2E+02
1	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	46	1	1.3E+01	5.1E+00	7.9E+00	1.3E+01	ACS-SB17-06.5	Sep-89	No (f)	
1	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	46	37	3.7E-01	7.3E+01	1.2E+02	8.5E+02	SB91-05-FT	Jun-93	Yes	1.2E+02
1	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	44	9	1.6E-01	1.4E+01	2.0E+01	6.1E+01	ACS-TP05-03	Aug-89	Yes	2.0E+01
1	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	32	14	2.1E-02	5.2E+00	9.1E+00	2.0E+01	ACS-TP02-03	Aug-89	Yes	9.1E+00
1	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	32	18	5.3E-02	1.2E+01	2.1E+01	1.7E+02	ACS-TP06-04	Aug-89	Yes	2.1E+01
1	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	32	7	7.9E-02	6.2E+00	1.0E+01	5.9E+00	ACS-TP02-03	Aug-89	Yes	5.9E+00
1	SUBSURFACE (2-10')	SVOC	bis(2-Chloroethyl) ether	111-44-4	46	9	9.9E-02	6.6E+00	1.0E+01	6.4E+01	ACS-SB17-06.5	Sep-89	Yes	1.0E+01
1	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	46	39	3.9E-02	2.1E+02	3.3E+02	2.6E+03	ACS-TP06-04	Aug-89	Yes	3.3E+02
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDD	72-54-8	38	2	1.5E-02	2.4E+00	4.3E+00	3.6E+00	SS02	Sep-96	Yes	3.6E+00
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDE	72-55-9	38	1	1.6E-02	2.3E+00	4.2E+00	1.6E-02	SS01-AVG	Sep-96	No (f)	
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDT	50-29-3	37	3	5.0E-02	2.8E+00	4.8E+00	1.2E+01	ACS-SB17-06.5	Sep-89	Yes	4.8E+00
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	57	8	1.3E-01	1.8E+01	3.1E+01	4.0E+02	ACS-TP02-03	Aug-89	Yes	3.1E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672-29-6	57	13	5.3E-01	1.4E+01	2.1E+01	7.6E+01	ACS-SB20-07	May-90	Yes	2.1E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	57	24	2.3E-01	2.2E+01	3.5E+01	1.0E+02	ACS-TP02-03	Aug-89	Yes	3.5E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82-5	57	5	3.3E-01	1.7E+01	3.0E+01	2.2E+01	ACS-SB70-08	Jun-90	Yes	2.2E+01
1	SUBSURFACE (2-10')	P/PCB	Dieldrin	60-57-1	38	2	1.0E-02	2.3E+00	4.2E+00	2.4E-01	SS02	Sep-96	Yes	2.4E-01
1	SUBSURFACE (2-10')	P/PCB	Endosulfan I	959-98-8	38	2	1.2E-02	1.2E+00	2.1E+00	1.2E+00	ACS-SB16-06	Sep-89	Yes	1.2E+00
1	SUBSURFACE (2-10')	P/PCB	Endrin	72-20-8	38	2	1.4E-02	2.3E+00	4.2E+00	1.6E+00	SS02	Sep-96	Yes	1.6E+00
1	SUBSURFACE (2-10')	P/PCB	gamma-BHC	58-89-9	37	1	1.1E+00	1.2E+00	2.2E+00	1.1E+00	ACS-SB17-06.5	Sep-89	No (f)	
1	SUBSURFACE (2-10')	P/PCB	gamma-Chlordane	5103-74-2	38	2	7.3E-03	1.1E+01	2.1E+01	1.2E+00	SS02	Sep-96	Yes	1.2E+00
1	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	25	25	4.9E+02	3.4E+03	3.9E+03	5.7E+03	SS02	Sep-96	No (e)	
1	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	9	2	5.3E+00	6.9E+00	1.6E+01	4.7E+01	ACS-TP06-04	Aug-89	Yes	1.6E+01
1	SUBSURFACE (2-10')	INORG	Arsenic	7440-38-2	25	22	9.5E-01	2.9E+00	4.3E+00	2.1E+01	ACS-TP02-05	Aug-89	Yes	4.3E+00
1	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	25	6	8.2E+01	1.2E+02	2.3E+02	1.6E+03	ACS-TP06-04	Aug-89	Yes	2.3E+02
1	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	25	22	8.0E-02	1.7E-01	2.1E-01	4.4E-01	ACS-SB12-10	Aug-89	Yes	2.1E-01
1	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	25	20	5.0E-02	6.6E+00	1.5E+01	1.2E+02	ACS-TP06-04	Aug-89	Yes	1.5E+01
1	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	25	24	1.8E+02	7.8E+03	1.1E+04	3.8E+04	ACS-SB09-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	25	22	4.6E+00	9.4E+01	1.9E+02	1.4E+03	ACS-TP06-04	Aug-89	Yes	1.9E+02
1	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	25	2	2.2E+01	7.9E+00	1.1E+01	4.2E+01	ACS-TP06-04	Aug-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	25	18	6.2E+00	3.9E+01	6.5E+01	3.6E+02	ACS-TP06-04	Aug-89	Yes	6.5E+01
1	SUBSURFACE (2-10')	INORG	Cyanide (total)	57-12-5	25	5	2.7E+00	4.8E+00	9.5E+00	7.1E+01	ACS-TP06-04	Aug-89	Yes	9.5E+00
1	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	25	25	4.8E+02	4.8E+03	5.6E+03	1.0E+04	ACS-TP02-05	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	25	25	2.9E+00	4.0E+02	8.4E+02	6.3E+03	ACS-TP06-04	Aug-89	Yes	8.4E+02
1	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	25	24	1.0E+02	3.6E+03	8.5E+03	1.7E+04	ACS-SB09-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	25	25	4.3E+00	1.6E+02	3.6E+02	1.0E+03	ACS-TP03-09	Aug-89	Yes	3.6E+02
1	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	25	10	1.6E-01	1.2E+00	2.3E+00	1.2E+01	ACS-TP02-03	Aug-89	Yes	2.3E+00
1	SUBSURFACE (2-10')	INORG	Nickel	7440-02-0	25	6	1.0E+01	7.0E+00	8.6E+00	2.0E+01	ACS-TP06-04	Aug-89	Yes	8.6E+00
1	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	25	23	1.8E+02	4.1E+02	4.7E+02	7.6E+02	ACS-SB12-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Selenium	7782-49-2	25	4	4.5E-01	4.2E-01	6.0E-01	2.8E+00	ACS-TP06-04	Aug-89	Yes	6.0E-01
1	SUBSURFACE (2-10')	INORG	Sodium	7440-23-5	25	2	5.0E+02	1.9E+02	2.7E+02	1.3E+03	ACS-TP06-04	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	25	23	1.2E+00	9.3E+00	1.1E+01	2.1E+01	ACS-TP02-05	Aug-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	25	25	5.3E+00	2.0E+02	3.6E+02	2.3E+03	ACS-TP06-04	Aug-89	Yes	3.6E+02
2	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	28	8	2.7E-02	8.2E+00	1.4E+01	6.5E+01	ACS-SB38-10	Jun-90	Yes	1.4E+01
2	SUBSURFACE (2-10')	VOC	1,1,2,2-Tetrachloroethane	79-34-5	28	2	1.3E-02	4.3E+00	6.8E+00	3.6E-02	SB82-04.5-FT	Jun-93	Yes	3.6E-02
2	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	28	1	6.6E+01	6.4E+00	1.1E+01	6.6E+01	ACS-SB39-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	15	3	3.6E-02	7.9E+00	1.2E+01	1.3E+01	ACS-SB39-10	Jun-90	Yes	1.2E+01
2	SUBSURFACE (2-10')	VOC	1,1-Dichloroethene	75-35-4	28	1	8.6E-03	4.3E+00	6.8E+00	8.6E-03	SB81-04-FT	Jun-93	No (f)	
2	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	28	3	1.1E-01	4.2E+00	6.6E+00	1.8E+01	ACS-SB28-08	May-90	Yes	6.6E+00
2	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	8	3	5.0E-03	8.6E+00	1.7E+01	3.4E+01	ACS-SB28-08	May-90	Yes	1.7E+01
2	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	28	5	1.0E-03	4.2E+00	6.7E+00	2.7E+00	ACS-SB39-10	Jun-90	Yes	2.7E+00
2	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	28	9	1.4E+00	2.2E+02	5.0E+02	4.5E+03	ACS-SB04-05	Aug-89	Yes	5.0E+02
2	SUBSURFACE (2-10')	VOC	2-Hexanone	591-78-6	15	2	1.6E+01	2.0E+01	3.2E+01	9.1E+01	SA04-S-IEA	Jul-97	Yes	3.2E+01
2	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	28	9	1.4E+00	4.9E+01	8.2E+01	3.6E+02	SA02-S-IEA	Jul-97	Yes	8.2E+01

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
2	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	28	6	1.7E+00	8.3E+01	1.6E+02	1.2E+03	SA04-S-IEA	Jul-97	Yes	1.6E+02
2	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	28	13	1.0E-02	8.8E+00	1.5E+01	9.6E+01	ACS-SB39-10	Jun-90	Yes	1.5E+01
2	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	28	1	2.5E+01	4.9E+00	7.8E+00	2.5E+01	ACS-SB39-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	28	8	7.0E-03	1.0E+01	1.9E+01	1.4E+02	ACS-SB39-10	Jun-90	Yes	1.9E+01
2	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	28	18	4.0E-03	9.4E+01	1.5E+02	6.8E+02	SA02-S-IEA	Jul-97	Yes	1.5E+02
2	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	28	12	2.0E-02	7.2E+00	1.5E+01	6.8E+00	ACS-SB40-10	Jun-90	Yes	6.8E+00
2	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	28	2	3.0E-02	6.0E+00	9.9E+00	5.2E+01	ACS-SB40-10	Jun-90	Yes	9.9E+00
2	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	28	13	2.2E-02	7.1E+01	1.3E+02	8.8E+02	SA04-S-IEA	Jul-97	Yes	1.3E+02
2	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	15	15	5.2E-02	4.3E+02	6.7E+02	1.3E+03	ACS-SB39-10	Jun-90	Yes	6.7E+02
2	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	28	10	1.2E-02	3.1E+01	5.5E+01	3.5E+02	SA04-S-IEA	Jul-97	Yes	5.5E+01
2	SUBSURFACE (2-10')	VOC	Vinyl Chloride	75-01-4	28	3	9.3E-03	8.4E+00	1.3E+01	1.1E-01	SB82-06.5-FT	Jun-93	Yes	1.1E-01
2	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	15	15	3.0E-03	8.8E+02	1.4E+03	3.6E+03	SA02-S-IEA	Jul-97	Yes	1.4E+03
2	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	20	5	1.8E-02	3.1E+00	5.8E+00	2.3E-01	SB82-06.5-FT	Jun-93	Yes	2.3E-01
2	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	13	9	1.4E-02	4.1E-01	1.1E+00	4.9E+00	SB78-10-FT	Jun-93	Yes	1.1E+00
2	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	13	6	1.2E-02	2.0E-01	5.4E-01	2.5E+00	SB78-10-FT	Jun-93	Yes	5.4E-01
2	SUBSURFACE (2-10')	SVOC	1,2,4-Trichlorobenzene	120-82-1	26	4	1.8E+00	6.1E+00	9.1E+00	1.0E+01	ACS-SB38-10	Jun-90	Yes	9.1E+00
2	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	13	5	5.3E+00	2.6E+01	5.4E+01	2.1E+02	SA04-S-IEA	Jul-97	Yes	5.4E+01
2	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	26	2	3.6E-01	6.6E+00	9.7E+00	9.1E-01	ACS-SB38-10	Jun-90	Yes	9.1E-01
2	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	13	4	1.1E+01	2.1E+01	3.3E+01	8.8E+01	SA04-S-IEA	Jul-97	Yes	3.3E+01
2	SUBSURFACE (2-10')	SVOC	2,6-Dinitrotoluene	606-20-2	13	1	3.5E+00	3.4E+01	3.2E+02	3.5E+00	ACS-SB38-10	Jun-90	Yes	3.5E+00
2	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	13	7	1.7E-01	8.0E+01	4.8E+03	5.2E+02	ACS-SB39-10	Jun-90	Yes	5.2E+02
2	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	13	5	6.7E+00	2.2E+01	3.8E+01	1.2E+02	SA04-S-IEA	Jul-97	Yes	3.8E+01
2	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	13	5	1.4E+01	3.0E+01	5.3E+01	1.8E+02	SA04-S-IEA	Jul-97	Yes	5.3E+01
2	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	13	4	1.5E-01	2.8E+01	5.8E+02	1.5E+01	ACS-SB39-10	Jun-90	Yes	1.5E+01
2	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	13	2	2.3E-01	1.2E+01	1.7E+01	1.3E+00	ACS-SB38-10	Jun-90	Yes	1.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	13	2	4.7E-01	1.2E+01	1.7E+01	2.7E+00	ACS-SB38-10	Jun-90	Yes	2.7E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	26	2	3.8E-01	6.6E+00	9.8E+00	1.5E+00	ACS-SB38-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	26	2	7.6E-01	6.8E+00	9.9E+00	5.3E+00	ACS-SB38-10	Jun-90	Yes	5.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	26	2	2.3E-01	6.6E+00	9.8E+00	1.5E+00	ACS-SB38-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	26	2	7.6E-01	6.8E+00	9.9E+00	5.3E+00	ACS-SB38-10	Jun-90	Yes	5.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	13	5	2.3E-01	8.0E+01	1.2E+02	2.4E+02	ACS-SB39-10	Jun-90	Yes	1.2E+02
2	SUBSURFACE (2-10')	SVOC	Benzyl Alcohol	100-51-6	13	2	1.5E+00	1.9E+01	2.7E+01	3.4E+01	ACS-SB39-10	Jun-90	Yes	2.7E+01
2	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	13	5	1.6E-01	7.2E+01	5.1E+03	4.2E+02	ACS-SB39-10	Jun-90	Yes	4.2E+02
2	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	26	3	4.0E-01	6.1E+00	9.2E+00	3.8E+00	ACS-SB39-10	Jun-90	Yes	3.8E+00
2	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	26	9	1.1E-01	4.5E+01	7.5E+01	3.9E+02	ACS-SB39-10	Jun-90	Yes	7.5E+01
2	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	13	4	3.7E+00	1.1E+01	1.7E+01	1.3E+01	ACS-SB38-10	Jun-90	Yes	1.3E+01
2	SUBSURFACE (2-10')	SVOC	Dibenzo(a,h)anthracene	53-70-3	26	1	7.0E-02	6.7E+00	9.8E+00	7.0E-02	ACS-SB42-05.5	Jun-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	13	3	1.7E-01	1.2E+01	1.7E+01	2.5E+00	ACS-SB38-10	Jun-90	Yes	2.5E+00
2	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	13	4	6.8E+00	1.6E+01	2.5E+01	6.4E+01	ACS-SB39-10	Jun-90	Yes	2.5E+01
2	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	13	3	3.8E+00	3.6E+01	9.6E+02	2.6E+02	ACS-SB39-10	Jun-90	Yes	2.6E+02
2	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	13	4	3.9E-01	1.1E+01	1.6E+01	4.1E+00	ACS-SB38-10	Jun-90	Yes	4.1E+00
2	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	13	4	2.9E-01	1.2E+01	1.8E+01	1.8E+01	ACS-SB39-10	Jun-90	Yes	1.8E+01
2	SUBSURFACE (2-10')	SVOC	Hexachlorobenzene	118-74-1	26	1	9.3E-01	6.6E+00	9.8E+00	9.3E-01	ACS-SB38-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Hexachlorobutadiene	87-68-3	26	2	2.0E+01	8.9E+00	1.4E+01	6.0E+01	ACS-SB39-10	Jun-90	Yes	1.4E+01
2	SUBSURFACE (2-10')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	26	2	4.2E-01	6.6E+00	9.8E+00	1.4E+00	ACS-SB38-10	Jun-90	Yes	1.4E+00
2	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	26	6	1.2E+01	1.1E+02	2.3E+02	1.8E+03	ACS-SB39-10	Jun-90	Yes	2.3E+02
2	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	26	1	6.9E+00	6.3E+00	9.4E+00	6.9E+00	ACS-SB28-08	May-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	26	9	2.8E-01	6.0E+01	1.0E+02	4.9E+02	ACS-SB39-10	Jun-90	Yes	1.0E+02
2	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	26	3	1.2E+00	3.1E+01	4.6E+01	6.3E+01	ACS-SB39-10	Jun-90	Yes	4.6E+01
2	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	13	5	7.6E-01	1.2E+01	1.8E+01	2.1E+01	ACS-SB39-10	Jun-90	Yes	1.8E+01
2	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	13	5	1.2E+01	3.1E+01	5.5E+01	1.7E+02	SA04-S-IEA	Jul-97	Yes	5.5E+01
2	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	13	3	7.1E-01	1.1E+01	1.7E+01	8.0E+00	ACS-SB38-10	Jun-90	Yes	8.0E+00
2	SUBSURFACE (2-10')	SVOC	bis(2-Chloroethyl) ether	111-44-4	26	3	1.9E+01	1.1E+01	1.9E+01	1.1E+02	ACS-SB39-10	Jun-90	Yes	1.9E+01
2	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	26	14	1.2E+00	1.8E+02	3.4E+02	2.3E+03	ACS-SB39-10	Jun-90	Yes	3.4E+02
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDD	72-54-8	15	1	3.3E+00	9.6E-01	1.5E+00	3.3E+00	ACS-SB36-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDE	72-55-9	15	1	8.8E-01	8.0E-01	1.2E+00	8.8E-01	ACS-SB36-10	Jun-90	Yes	8.8E-01

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDT	50-29-3	15	1	1.7E+00	8.3E-01	1.2E+00	1.7E+00	ACS-SB38-10	Jun-90	Yes	1.2E+00
2	SUBSURFACE (2-10')	P/PCB	Aldrin	309-00-2	15	1	7.7E+00	7.9E-01	6.0E+00	7.7E+00	ACS-SB39-10	Jun-90	Yes	6.0E+00
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	28	1	8.7E+00	1.1E+01	2.6E+01	8.7E+00	ACS-SB40-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672-29-6	28	4	9.4E+00	2.5E+01	5.0E+01	3.3E+02	SA04-S-IEA	Jul-97	Yes	5.0E+01
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	28	11	2.2E-02	2.4E+01	5.5E+01	3.6E+01	ACS-SB37-10	Jun-90	Yes	3.6E+01
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82-5	28	13	3.6E-02	1.4E+02	3.5E+02	3.4E+03	SB78-07-FT	Jun-93	Yes	3.5E+02
2	SUBSURFACE (2-10')	P/PCB	alpha-BHC	319-84-6	15	1	3.3E-01	3.9E-01	5.9E-01	3.3E-01	ACS-SB36-10	Jun-90	Yes	3.3E-01
2	SUBSURFACE (2-10')	P/PCB	beta-BHC	319-85-7	15	1	8.0E-01	4.2E-01	6.3E-01	8.0E-01	ACS-SB36-10	Jun-90	Yes	6.3E-01
2	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	12	12	1.4E+02	4.2E+03	5.3E+03	8.2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	8	3	1.3E+01	2.8E+01	6.5E+01	1.6E+02	D01-S-IEA	Jul-97	Yes	6.5E+01
2	SUBSURFACE (2-10')	INORG	Arsenic	7440-38-2	12	11	2.3E+00	3.8E+00	4.9E+00	7.8E+00	D02-S-IEA	Jul-97	Yes	4.9E+00
2	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	12	7	3.1E+01	5.1E+02	9.7E+02	2.7E+03	D01-S-IEA	Jul-97	Yes	9.7E+02
2	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	12	4	1.0E-01	2.6E-01	3.1E-01	3.4E-01	ACS-SB42-05.5	Jun-90	Yes	3.1E-01
2	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	11	11	3.0E-01	2.2E+01	8.7E+02	1.1E+02	D01-S-IEA	Jul-97	Yes	1.1E+02
2	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	12	11	4.1E+02	1.3E+04	2.1E+04	5.1E+04	ACS-SB42-05.5	Jun-90	No (e)	
2	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	12	11	1.0E+01	2.8E+02	3.0E+04	1.5E+03	D01-S-IEA	Jul-97	Yes	1.5E+03
2	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	12	3	5.6E+00	8.9E+00	1.4E+01	3.3E+01	D01-S-IEA	Jul-97	Yes	1.4E+01
2	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	12	11	1.4E+01	3.7E+02	1.9E+04	1.3E+03	SA02-S-IEA	Jul-97	Yes	1.3E+03
2	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	12	12	7.8E+02	9.2E+03	1.3E+04	1.9E+04	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	12	12	2.3E+00	1.7E+03	5.2E+05	1.0E+04	D01-S-IEA	Jul-97	Yes	1.0E+04
2	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	12	11	3.9E+02	4.9E+03	8.0E+03	1.9E+04	ACS-SB42-05.5	Jun-90	No (e)	
2	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	12	12	1.3E+01	1.7E+02	2.4E+02	4.0E+02	D01-S-IEA	Jul-97	Yes	2.4E+02
2	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	12	8	1.6E-01	1.1E+00	1.4E+01	7.9E+00	SA02-S-IEA	Jul-97	Yes	7.9E+00
2	SUBSURFACE (2-10')	INORG	Nickel	7440-02-0	12	9	4.6E+00	1.7E+01	2.5E+01	5.3E+01	D01-S-IEA	Jul-97	Yes	2.5E+01
2	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	12	7	3.5E+01	5.7E+02	8.5E+02	1.6E+03	SA01-S-IEA-02	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Selenium	7782-49-2	12	3	6.4E-01	1.4E+00	2.8E+00	8.3E+00	D01-S-IEA	Jul-97	Yes	2.8E+00
2	SUBSURFACE (2-10')	INORG	Silver	7440-22-4	12	2	3.8E+00	4.2E+00	9.8E+00	3.5E+01	D01-S-IEA	Jul-97	Yes	9.8E+00
2	SUBSURFACE (2-10')	INORG	Sodium	7440-23-5	12	2	7.4E+02	3.6E+02	5.3E+02	1.2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Thallium	7440-28-0	12	3	7.2E-01	6.4E-01	7.2E-01	1.0E+00	ACS-SB28-08	May-90	Yes	7.2E-01
2	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	12	10	6.7E+00	7.8E+00	9.6E+00	1.2E+01	SA04-S-IEA	Jul-97	Yes	9.6E+00
2	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	12	12	7.8E+00	1.7E+03	3.3E+03	8.3E+03	D01-S-IEA	Jul-97	Yes	3.3E+03
3	SURFACE (0-2')	VOC	1,1,1-Trichloroethane	71-55-6	2	1	9.0E-03	6.1E-02	3.9E-01	9.0E-03	ACS-SA01-03	Jul-89	Yes	9.0E-03
3	SURFACE (0-2')	VOC	1,1-Dichloroethane	75-34-3	2	1	8.6E-02	9.9E-02	1.8E-01	8.6E-02	ACS-SA01-03	Jul-89	Yes	8.6E-02
3	SURFACE (0-2')	VOC	1,2-Dichloroethene (total)	540-59-0	2	2	2.1E-02	3.8E+00	2.8E+01	7.6E+00	ACS-SA02-03	Jul-89	Yes	7.6E+00
3	SURFACE (0-2')	VOC	1,2-Dichloropropane	78-87-5	2	1	1.9E-02	6.6E-02	3.6E-01	1.9E-02	ACS-SA01-03	Jul-89	Yes	1.9E-02
3	SURFACE (0-2')	VOC	Acetone	67-64-1	2	1	1.3E-01	1.8E-01	4.8E-01	1.3E-01	ACS-SA01-03	Jul-89	Yes	1.3E-01
3	SURFACE (0-2')	VOC	Benzene	71-43-2	2	2	3.2E-01	1.8E+00	1.1E+01	3.2E+00	ACS-SA02-03	Jul-89	Yes	3.2E+00
3	SURFACE (0-2')	VOC	Chlorobenzene	108-90-7	2	1	6.2E+00	3.1E+00	2.3E+01	6.2E+00	ACS-SA02-03	Jul-89	Yes	6.2E+00
3	SURFACE (0-2')	VOC	Chloroform	67-66-3	2	1	1.0E-02	6.1E-02	3.8E-01	1.0E-02	ACS-SA01-03	Jul-89	Yes	1.0E-02
3	SURFACE (0-2')	VOC	Ethyl Benzene	100-41-4	2	2	7.0E+00	7.4E+01	4.9E+02	1.4E+02	ACS-SA02-03	Jul-89	Yes	1.4E+02
3	SURFACE (0-2')	VOC	Methylene Chloride	75-09-2	2	1	2.0E-01	8.3E-01	4.8E+00	2.0E-01	ACS-SA01-03	Jul-89	Yes	2.0E-01
3	SURFACE (0-2')	VOC	Styrene	100-42-5	2	1	2.3E+01	1.2E+01	8.4E+01	2.3E+01	ACS-SA02-03	Jul-89	Yes	2.3E+01
3	SURFACE (0-2')	VOC	Tetrachloroethene	127-18-4	2	2	1.3E-01	1.3E+02	9.1E+02	2.5E+02	ACS-SA02-03	Jul-89	Yes	2.5E+02
3	SURFACE (0-2')	VOC	Toluene	108-88-3	2	2	2.9E+01	3.3E+02	2.3E+03	6.4E+02	ACS-SA02-03	Jul-89	Yes	6.4E+02
3	SURFACE (0-2')	VOC	Trichloroethene	79-01-6	2	2	1.1E-02	5.0E+01	3.7E+02	1.0E+02	ACS-SA02-03	Jul-89	Yes	1.0E+02
3	SURFACE (0-2')	VOC	Xylenes (total)	1330-20-7	2	2	4.4E+01	3.1E+02	2.0E+03	5.7E+02	ACS-SA02-03	Jul-89	Yes	5.7E+02
3	SURFACE (0-2')	SVOC	1,2-Dichlorobenzene	95-50-1	2	1	5.9E-01	4.6E-01	1.3E+00	5.9E-01	ACS-SA02-03	Jul-89	Yes	5.9E-01
3	SURFACE (0-2')	SVOC	2,4,5-Trichlorophenol	95-95-4	2	1	1.7E-01	4.9E+00	3.5E+01	1.7E-01	ACS-SA01-03	Jul-89	Yes	1.7E-01
3	SURFACE (0-2')	SVOC	2,4-Dimethylphenol	105-67-9	2	2	1.3E+00	3.1E+00	1.4E+01	4.9E+00	ACS-SA02-03	Jul-89	Yes	4.9E+00
3	SURFACE (0-2')	SVOC	2-Methylnaphthalene	91-57-6	2	2	5.5E+00	1.1E+01	4.8E+01	1.7E+01	ACS-SA02-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	SVOC	2-Methylphenol	95-48-7	2	1	4.7E+00	2.5E+00	1.6E+01	4.7E+00	ACS-SA02-03	Jul-89	Yes	4.7E+00
3	SURFACE (0-2')	SVOC	4-Methylphenol	106-44-5	2	1	4.6E+00	2.5E+00	1.6E+01	4.6E+00	ACS-SA02-03	Jul-89	Yes	4.6E+00
3	SURFACE (0-2')	SVOC	Acenaphthene	83-32-9	2	1	3.6E-01	5.0E+00	3.4E+01	3.6E-01	ACS-SA01-03	Jul-89	Yes	3.6E-01
3	SURFACE (0-2')	SVOC	Anthracene	120-12-7	2	1	6.6E-01	1.3E+00	5.5E+00	6.6E-01	ACS-SA01-03	Jul-89	Yes	6.6E-01
3	SURFACE (0-2')	SVOC	Benzo(a)anthracene	56-55-3	2	1	2.4E+00	2.2E+00	3.5E+00	2.4E+00	ACS-SA01-03	Jul-89	Yes	2.4E+00
3	SURFACE (0-2')	SVOC	Benzo(b)fluoranthene	205-99-2	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SURFACE (0-2')	SVOC	Benzo(k)fluoranthene	207-08-9	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01
3	SURFACE (0-2')	SVOC	Butylbenzylphthalate	85-68-7	2	2	3.2E+00	1.0E+01	5.4E+01	1.7E+01	ACS-SA02-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	SVOC	Chrysene	218-01-9	2	1	1.3E+00	1.6E+00	3.8E+00	1.3E+00	ACS-SA01-03	Jul-89	Yes	1.3E+00
3	SURFACE (0-2')	SVOC	Di-n-butylphthalate	84-74-2	2	2	1.1E+01	1.3E+01	2.6E+01	1.5E+01	ACS-SA02-03	Jul-89	Yes	1.5E+01
3	SURFACE (0-2')	SVOC	Di-n-octylphthalate	117-84-0	2	1	1.3E+00	8.2E-01	3.9E+00	1.3E+00	ACS-SA02-03	Jul-89	Yes	1.3E+00
3	SURFACE (0-2')	SVOC	Dibenzofuran	132-64-9	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01
3	SURFACE (0-2')	SVOC	Diethylphthalate	84-66-2	2	1	1.5E-01	1.1E+00	6.8E+00	1.5E-01	ACS-SA01-03	Jul-89	Yes	1.5E-01
3	SURFACE (0-2')	SVOC	Dimethylphthalate	131-11-3	2	1	1.4E+00	8.7E-01	4.2E+00	1.4E+00	ACS-SA02-03	Jul-89	Yes	1.4E+00
3	SURFACE (0-2')	SVOC	Fluoranthene	206-44-0	2	1	3.4E+00	2.7E+00	7.2E+00	3.4E+00	ACS-SA01-03	Jul-89	Yes	3.4E+00
3	SURFACE (0-2')	SVOC	Fluorene	86-73-7	2	2	4.7E-01	5.4E-01	9.8E-01	6.1E-01	ACS-SA01-03	Jul-89	Yes	6.1E-01
3	SURFACE (0-2')	SVOC	Isophorone	78-59-1	2	2	8.4E+00	2.4E+01	1.2E+02	4.0E+01	ACS-SA02-03	Jul-89	Yes	4.0E+01
3	SURFACE (0-2')	SVOC	N-Nitrosodiphenylamine	86-30-6	2	1	4.3E+00	2.3E+00	1.5E+01	4.3E+00	ACS-SA02-03	Jul-89	Yes	4.3E+00
3	SURFACE (0-2')	SVOC	Naphthalene	91-20-3	2	2	9.9E+00	1.9E+01	7.6E+01	2.8E+01	ACS-SA02-03	Jul-89	Yes	2.8E+01
3	SURFACE (0-2')	SVOC	Pentachlorophenol	87-86-5	2	1	1.5E+00	5.6E+00	3.1E+01	1.5E+00	ACS-SA01-03	Jul-89	Yes	1.5E+00
3	SURFACE (0-2')	SVOC	Phenanthrene	85-01-8	2	2	4.5E-01	1.8E+00	1.0E+01	3.1E+00	ACS-SA01-03	Jul-89	Yes	3.1E+00
3	SURFACE (0-2')	SVOC	Phenol	108-95-2	2	2	7.0E-01	3.6E+00	2.2E+01	6.4E+00	ACS-SA02-03	Jul-89	Yes	6.4E+00
3	SURFACE (0-2')	SVOC	Pyrene	129-00-0	2	1	2.3E+00	2.1E+00	3.2E+00	2.3E+00	ACS-SA01-03	Jul-89	Yes	2.3E+00
3	SURFACE (0-2')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2	2	2.9E+02	3.6E+02	8.0E+02	4.3E+02	ACS-SA01-03	Jul-89	Yes	4.3E+02
3	SURFACE (0-2')	P/PCB	4,4'-DDD	72-54-8	14	3	2.5E-02	2.1E-01	3.3E-01	1.5E-01	ACS-SB46-01	Jun-90	Yes	1.5E-01
3	SURFACE (0-2')	P/PCB	Aroclor-1242	53469-21-9	14	3	1.5E+01	6.4E+00	1.2E+01	4.2E+01	ACS-SA01-03	Jul-89	Yes	1.2E+01
3	SURFACE (0-2')	P/PCB	Aroclor-1248	12672-29-6	14	3	5.1E+00	3.6E+00	7.0E+00	2.7E+01	ACS-SB48-01	Jun-90	Yes	7.0E+00
3	SURFACE (0-2')	P/PCB	Aroclor-1254	11097-69-1	14	5	2.0E+00	5.6E+00	9.2E+00	2.2E+01	ACS-SB48-01	Jun-90	Yes	9.2E+00
3	SURFACE (0-2')	P/PCB	Heptachlor	76-44-8	14	1	8.8E-02	1.1E-01	1.7E-01	8.8E-02	ACS-SB46-01	Jun-90	Yes	8.8E-02
3	SURFACE (0-2')	P/PCB	Heptachlor epoxide	1024-57-3	14	1	4.2E-02	1.1E-01	1.6E-01	4.2E-02	ACS-SB46-01	Jun-90	Yes	4.2E-02
3	SURFACE (0-2')	INORG	Aluminum	7429-90-5	2	2	4.7E+03	7.1E+03	2.2E+04	9.5E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Antimony	7440-36-0	2	2	3.7E+01	5.2E+01	1.5E+02	6.8E+01	ACS-SA02-03	Jul-89	Yes	6.8E+01
3	SURFACE (0-2')	INORG	Arsenic	7440-38-2	2	2	4.4E+00	1.8E+01	1.0E+02	3.1E+01	ACS-SA02-03	Jul-89	Yes	3.1E+01
3	SURFACE (0-2')	INORG	Barium	7440-39-3	2	2	1.8E+03	2.1E+03	4.3E+03	2.5E+03	ACS-SA01-03	Jul-89	Yes	2.5E+03
3	SURFACE (0-2')	INORG	Beryllium	7440-41-7	2	2	1.6E-01	8.3E-01	5.1E+00	1.5E+00	ACS-SA01-03	Jul-89	Yes	1.5E+00
3	SURFACE (0-2')	INORG	Cadmium	7440-43-9	2	2	1.2E+02	1.4E+02	2.7E+02	1.6E+02	ACS-SA02-03	Jul-89	Yes	1.6E+02
3	SURFACE (0-2')	INORG	Calcium	7440-70-2	2	2	1.9E+04	8.8E+04	5.2E+05	1.6E+05	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Chromium (total)	7440-47-3	2	2	8.6E+02	1.1E+03	2.5E+03	1.3E+03	ACS-SA02-03	Jul-89	Yes	1.3E+03
3	SURFACE (0-2')	INORG	Cobalt	7440-48-4	2	2	4.2E+01	5.0E+01	9.6E+01	5.7E+01	ACS-SA01-03	Jul-89	Yes	5.7E+01
3	SURFACE (0-2')	INORG	Copper	7440-50-8	2	2	3.8E+02	7.8E+02	3.3E+03	1.2E+03	ACS-SA01-03	Jul-89	Yes	1.2E+03
3	SURFACE (0-2')	INORG	Cyanide (total)	57-12-5	2	2	2.0E+01	3.4E+01	1.2E+02	4.8E+01	ACS-SA02-03	Jul-89	Yes	4.8E+01
3	SURFACE (0-2')	INORG	Iron	7439-89-6	2	2	9.2E+03	1.1E+04	2.2E+04	1.3E+04	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Lead	7439-92-1	2	2	5.8E+03	8.3E+03	2.4E+04	1.1E+04	ACS-SA01-03	Jul-89	Yes	1.1E+04
3	SURFACE (0-2')	INORG	Magnesium	7439-95-4	2	2	2.3E+03	2.0E+04	1.3E+05	3.7E+04	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Manganese	7439-96-5	2	2	1.4E+02	8.4E+02	5.3E+03	1.5E+03	ACS-SA01-03	Jul-89	Yes	1.5E+03
3	SURFACE (0-2')	INORG	Mercury	7439-97-6	2	2	9.2E+00	9.4E+00	1.0E+01	9.5E+00	ACS-SA02-03	Jul-89	Yes	9.5E+00
3	SURFACE (0-2')	INORG	Nickel	7440-02-0	2	2	2.3E+01	3.8E+01	1.3E+02	5.3E+01	ACS-SA01-03	Jul-89	Yes	5.3E+01
3	SURFACE (0-2')	INORG	Potassium	7440-09-7	2	2	3.8E+02	9.0E+02	4.2E+03	1.4E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Selenium	7782-49-2	2	2	8.8E+00	1.3E+01	4.0E+01	1.7E+01	ACS-SA01-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	INORG	Sodium	7440-23-5	2	2	4.6E+02	8.3E+02	3.1E+03	1.2E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Vanadium	7440-62-2	2	2	1.2E+01	1.9E+01	6.4E+01	2.6E+01	ACS-SA02-03	Jul-89	Yes	2.6E+01
3	SURFACE (0-2')	INORG	Zinc	7440-66-6	2	2	3.6E+03	9.4E+03	4.6E+04	1.5E+04	ACS-SA02-03	Jul-89	Yes	1.5E+04
3	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	29	4	8.3E-02	2.7E+02	7.2E+02	7.6E+03	ACS-SB30-10	May-90	Yes	7.2E+02
3	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	29	1	6.3E-01	9.5E+01	2.4E+02	6.3E-01	ACS-SB29-08	May-90	No (f)	
3	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	24	5	5.0E-03	1.1E+02	2.9E+02	1.7E+00	ACS-SB29-08	May-90	Yes	1.7E+00
3	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	29	2	4.4E-02	9.5E+01	2.4E+02	8.1E-01	ACS-SB29-08	May-90	Yes	8.1E-01
3	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	21	4	3.6E-01	1.3E+02	3.3E+02	2.6E+01	ACS-SB44-04.5	Jun-90	Yes	2.6E+01
3	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	29	2	3.5E-02	9.5E+01	2.4E+02	5.5E-01	ACS-SB29-08	May-90	Yes	5.5E-01
3	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	29	7	5.0E-03	3.4E+03	9.2E+03	9.9E+04	ACS-SB30-10	May-90	Yes	9.2E+03
3	SUBSURFACE (2-10')	VOC	2-Hexanone	591-78-6	24	2	4.0E-03	2.3E+02	5.8E+02	3.9E-01	ACS-SB47-04.5	Jun-90	Yes	3.9E-01
3	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	29	9	2.0E-03	2.2E+03	5.7E+03	6.1E+04	ACS-SB30-10	May-90	Yes	5.7E+03
3	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	29	6	7.9E-02	1.2E+03	3.2E+03	3.4E+04	ACS-SB30-10	May-90	Yes	3.2E+03

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	29	8	2.0E-03	6.3E+01	1.5E+02	1.5E+03	ACS-SB30-10	May-90	Yes	1.5E+02
3	SUBSURFACE (2-10')	VOC	Carbon Disulfide	75-15-0	24	1	3.0E-03	1.1E+02	2.9E+02	3.0E-03	ACS-SB47-04.5	Jun-90	No (f)	
3	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	29	5	1.8E-02	4.5E+01	1.0E+02	1.0E+03	ACS-SB30-10	May-90	Yes	1.0E+02
3	SUBSURFACE (2-10')	VOC	Chloroethane	75-00-3	29	1	1.2E-02	1.9E+02	4.7E+02	1.2E-02	ACS-SB47-04.5	Jun-90	No (f)	
3	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	29	3	1.0E-03	9.5E+01	2.4E+02	3.0E-03	ACS-SB47-04.5	Jun-90	Yes	3.0E-03
3	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	29	22	2.0E-03	1.0E+03	2.4E+03	2.3E+04	ACS-SB30-10	May-90	Yes	2.4E+03
3	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	29	4	2.3E-02	1.1E+02	2.9E+02	2.7E+00	SB84-05-FT	Jun-93	Yes	2.7E+00
3	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	29	4	5.8E-02	1.1E+02	2.6E+02	3.1E+02	ACS-SB29-08	May-90	Yes	2.6E+02
3	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	29	14	2.0E-03	1.6E+03	4.3E+03	4.6E+04	ACS-SB30-10	May-90	Yes	4.3E+03
3	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	24	20	1.0E-03	6.4E+03	1.6E+04	1.3E+05	ACS-SB30-10	May-90	Yes	1.6E+04
3	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	29	8	2.0E-02	6.7E+02	1.8E+03	1.9E+04	ACS-SB30-10	May-90	Yes	1.8E+03
3	SUBSURFACE (2-10')	VOC	Vinyl Chloride	75-01-4	29	1	1.2E-02	2.1E+02	4.9E+02	1.2E-02	SB87-07-FT	Jun-93	No (f)	
3	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	24	22	1.0E-02	5.7E+03	1.3E+04	1.0E+05	ACS-SB30-10	May-90	Yes	1.3E+04
3	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	8	1	2.2E-02	9.6E+00	2.1E+01	2.2E-02	SB87-07-FT	Jun-93	Yes	2.2E-02
3	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	5	2	1.2E+02	4.8E+01	1.1E+02	1.2E+02	SB84-05-FT	Jun-93	Yes	1.1E+02
3	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	5	4	1.0E-02	1.4E+01	4.2E+01	6.7E+01	SB84-05-FT	Jun-93	Yes	4.2E+01
3	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	12	2	2.0E-01	7.2E+00	1.3E+01	2.6E-01	ACS-SB02-07	Aug-89	Yes	2.6E-01
3	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	17	1	9.3E-02	5.4E+00	9.2E+00	9.3E-02	ACS-SB41-05.5	Jun-90	Yes	9.3E-02
3	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	12	4	3.9E-02	1.0E+01	1.9E+01	6.2E+01	ACS-SB30-10	May-90	Yes	1.9E+01
3	SUBSURFACE (2-10')	SVOC	2,4-Dinitrotoluene	121-14-2	17	1	8.4E-01	5.4E+00	9.2E+00	8.4E-01	ACS-SB02-07	Aug-89	Yes	8.4E-01
3	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	12	8	2.9E-01	2.9E+01	6.0E+01	2.1E+02	ACS-SB30-10	May-90	Yes	6.0E+01
3	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	12	4	8.0E-02	6.7E+00	1.1E+01	2.1E+01	ACS-SB30-10	May-90	Yes	1.1E+01
3	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	12	7	4.1E-02	5.9E+00	1.0E+01	2.2E+01	ACS-SB30-10	May-90	Yes	1.0E+01
3	SUBSURFACE (2-10')	SVOC	4-Nitrophenol	100-02-7	12	1	6.6E-02	1.5E+01	2.7E+01	6.6E-02	ACS-TP01-06	Aug-89	Yes	6.6E-02
3	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	12	2	4.3E-01	2.7E+01	5.2E+01	7.1E-01	ACS-SB02-07	Aug-89	Yes	7.1E-01
3	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	12	2	8.9E-01	7.4E+00	1.3E+01	1.2E+00	ACS-SB41-05.5	Jun-90	Yes	1.2E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	12	3	8.5E-01	7.6E+00	1.3E+01	2.1E+00	ACS-SB02-07	Aug-89	Yes	2.1E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	17	3	6.1E-01	5.5E+00	9.3E+00	1.4E+00	ACS-SB41-05.5	Jun-90	Yes	1.4E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	17	3	2.2E+00	5.8E+00	9.5E+00	3.9E+00	ACS-SB01-03	Aug-89	Yes	3.9E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	17	3	2.6E-01	5.4E+00	9.2E+00	1.1E+00	ACS-SB01-03	Aug-89	Yes	1.1E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	17	3	2.2E+00	5.8E+00	9.5E+00	3.9E+00	ACS-SB01-03	Aug-89	Yes	3.9E+00
3	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	12	5	7.9E-02	3.8E+01	1.5E+04	2.3E+02	ACS-SB30-10	May-90	Yes	2.3E+02
3	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	12	6	3.5E+00	2.0E+01	3.4E+01	6.6E+01	ACS-SB30-10	May-90	Yes	3.4E+01
3	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	17	3	1.3E+00	5.6E+00	9.3E+00	1.6E+00	ACS-SB41-05.5	Jun-90	Yes	1.6E+00
3	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	17	13	3.9E-02	4.0E+01	6.7E+01	2.4E+02	ACS-SB30-10	May-90	Yes	6.7E+01
3	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	12	6	4.5E-01	9.5E+00	1.6E+01	3.8E+01	ACS-SB01-03	Aug-89	Yes	1.6E+01
3	SUBSURFACE (2-10')	SVOC	Dibenzo(a,h)anthracene	53-70-3	17	2	1.9E-01	5.4E+00	9.2E+00	2.7E-01	ACS-SB01-03	Aug-89	Yes	2.7E-01
3	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	12	4	7.1E-02	7.3E+00	1.3E+01	6.4E-01	ACS-SB02-07	Aug-89	Yes	6.4E-01
3	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	12	3	1.3E+00	5.6E+00	1.0E+01	5.0E+00	ACS-TP01-03.5	Aug-89	Yes	5.0E+00
3	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	12	2	6.5E+00	6.5E+00	1.0E+01	1.6E+01	ACS-SB30-10	May-90	Yes	1.0E+01
3	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	12	4	4.0E-02	8.3E+00	1.3E+01	6.1E+00	ACS-SB41-05.5	Jun-90	Yes	6.1E+00
3	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	12	4	9.2E-02	7.4E+00	1.3E+01	9.8E-01	ACS-SB41-05.5	Jun-90	Yes	9.8E-01
3	SUBSURFACE (2-10')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	17	2	5.5E-01	5.4E+00	9.2E+00	8.2E-01	ACS-SB01-03	Aug-89	Yes	8.2E-01
3	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	17	9	1.4E-01	2.4E+02	6.0E+02	3.6E+03	ACS-SB30-10	May-90	Yes	6.0E+02
3	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	17	2	1.8E-01	5.5E+00	9.3E+00	1.9E+00	ACS-SB01-03	Aug-89	Yes	1.9E+00
3	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	17	12	5.4E-02	5.8E+01	1.3E+02	6.8E+02	ACS-SB30-10	May-90	Yes	1.3E+02
3	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	17	3	4.5E-02	2.7E+01	4.5E+01	1.6E+01	ACS-SB02-07	Aug-89	Yes	1.6E+01
3	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	12	5	2.2E-01	7.0E+00	1.2E+01	6.4E+00	ACS-SB41-05.5	Jun-90	Yes	6.4E+00
3	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	12	8	5.8E-02	7.8E+01	2.1E+02	8.6E+02	ACS-SB30-10	May-90	Yes	2.1E+02
3	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	12	4	7.1E-02	7.9E+00	1.3E+01	4.2E+00	ACS-SB02-07	Aug-89	Yes	4.2E+00
3	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	17	15	1.1E-01	6.4E+02	1.5E+03	8.9E+03	ACS-SB30-10	May-90	Yes	1.5E+03
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	29	5	3.2E+00	1.3E+01	2.9E+01	2.8E+02	ACS-TP01-03.5	Aug-89	Yes	2.9E+01
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672-29-6	29	6	1.6E-01	8.0E+00	1.6E+01	1.3E+02	KP01-S-IEA	Jul-97	Yes	1.6E+01
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	29	9	1.0E+00	6.3E+00	9.5E+00	4.4E+01	ACS-SB30-10	May-90	Yes	9.5E+00
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82-5	29	4	9.8E-01	3.9E+00	6.5E+00	3.6E+01	SP02-S-IEA	Jul-97	Yes	6.5E+00
3	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	12	12	2.4E+03	6.5E+03	9.5E+03	1.8E+04	ACS-SB29-08	May-90	No (e)	

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	8	6	9.0E+00	3.8E+01	2.5E+03	1.5E+02	ACS-SB30-10	May-90	Yes	1.5E+02
3	SUBSURFACE (2-10')	INORG	Arsenic	7440-38-2	12	12	1.5E+00	3.1E+00	3.7E+00	5.4E+00	ACS-SB29-08	May-90	Yes	3.7E+00
3	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	12	8	6.7E+01	1.2E+03	2.4E+03	6.4E+03	ACS-SB30-10	May-90	Yes	2.4E+03
3	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	12	9	6.0E-02	2.5E-01	3.9E-01	8.0E-01	ACS-SB29-08	May-90	Yes	3.9E-01
3	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	12	12	9.0E-02	1.7E+02	4.2E+02	1.7E+03	ACS-SB30-10	May-90	Yes	4.2E+02
3	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	12	10	4.0E+02	1.6E+04	2.4E+04	4.8E+04	ACS-SB30-10	May-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	12	12	4.8E+00	7.3E+02	1.4E+03	3.8E+03	ACS-SB30-10	May-90	Yes	1.4E+03
3	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	12	7	8.4E+00	2.5E+01	4.7E+01	1.5E+02	ACS-TP01-03.5	Aug-89	Yes	4.7E+01
3	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	12	9	7.7E+00	9.4E+02	2.0E+03	5.8E+03	ACS-SB30-10	May-90	Yes	2.0E+03
3	SUBSURFACE (2-10')	INORG	Cyanide (total)	57-12-5	9	4	4.6E+00	1.4E+01	2.8E+01	6.6E+01	ACS-TP01-03.5	Aug-89	Yes	2.8E+01
3	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	12	12	2.0E+03	1.4E+04	3.1E+04	7.0E+04	ACS-TP01-03.5	Aug-89	No (e)	
3	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	12	12	5.0E+00	3.5E+03	6.7E+03	1.7E+04	ACS-SB30-10	May-90	Yes	6.7E+03
3	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	12	9	5.8E+02	5.7E+03	8.6E+03	1.5E+04	ACS-SB41-05.5	Jun-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	12	12	2.6E+01	2.4E+02	6.6E+02	7.3E+02	ACS-TP01-03.5	Aug-89	Yes	6.6E+02
3	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	12	9	7.0E-02	5.1E+00	1.0E+01	3.6E+01	ACS-SB30-10	May-90	Yes	1.0E+01
3	SUBSURFACE (2-10')	INORG	Nickel	7440-02-0	12	8	1.0E+01	2.7E+01	5.5E+01	2.0E+02	ACS-TP01-03.5	Aug-89	Yes	5.5E+01
3	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	12	10	2.1E+02	7.2E+02	1.2E+03	3.6E+03	ACS-SB29-08	May-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Selenium	7782-49-2	12	7	1.4E+00	1.4E+01	3.8E+01	1.6E+02	ACS-SB30-10	May-90	Yes	3.8E+01
3	SUBSURFACE (2-10')	INORG	Silver	7440-22-4	12	5	2.5E+00	3.4E+01	8.1E+01	3.1E+02	ACS-SB30-10	May-90	Yes	8.1E+01
3	SUBSURFACE (2-10')	INORG	Sodium	7440-23-5	12	4	2.1E+02	6.9E+02	1.3E+03	3.9E+03	ACS-TP01-03.5	Aug-89	No (e)	
3	SUBSURFACE (2-10')	INORG	Thallium	7440-28-0	12	1	1.5E+00	6.5E-01	8.0E-01	1.5E+00	ACS-SB29-08	May-90	Yes	8.0E-01
3	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	12	11	3.9E+00	1.2E+01	1.9E+01	4.8E+01	ACS-TP01-03.5	Aug-89	Yes	1.9E+01
3	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	12	12	9.4E+00	2.1E+03	1.3E+05	1.6E+04	ACS-TP01-03.5	Aug-89	Yes	1.6E+04
5	SURFACE (0-2')	VOC	Methylene Chloride	75-09-2	2	2	6.0E-03	6.5E-03	9.7E-03	7.0E-03	ACS-SS02-001	Sep-97	Yes	7.0E-03
5	SURFACE (0-2')	VOC	Toluene	108-88-3	2	1	2.0E-03	3.8E-03	1.5E-02	2.0E-03	ACS-SS02-001	Sep-97	Yes	2.0E-03
5	SURFACE (0-2')	SVOC	Benzo(a)anthracene	56-55-3	2	2	5.5E-02	7.2E-02	1.8E-01	8.9E-02	ACS-SS02-001	Sep-97	Yes	8.9E-02
5	SURFACE (0-2')	SVOC	Benzo(a)pyrene	50-32-8	2	2	5.7E-02	8.3E-02	2.5E-01	1.1E-01	ACS-SS02-001	Sep-97	Yes	1.1E-01
5	SURFACE (0-2')	SVOC	Benzo(b)fluoranthene	205-99-2	2	2	5.3E-02	8.2E-02	2.6E-01	1.1E-01	ACS-SS02-001	Sep-97	Yes	1.1E-01
5	SURFACE (0-2')	SVOC	*Benzo(g,h,i)perylene*	191-24-2	2	2	1.1E-01	1.7E-01	5.1E-01	2.2E-01	ACS-SS01-AVG	Sep-97	Yes	2.2E-01
5	SURFACE (0-2')	SVOC	Benzo(k)fluoranthene	207-08-9	2	2	5.5E-02	7.1E-02	1.7E-01	8.7E-02	ACS-SS02-001	Sep-97	Yes	8.7E-02
5	SURFACE (0-2')	SVOC	Butylbenzylphthalate	85-68-7	2	2	5.3E-02	5.5E-02	6.4E-02	5.6E-02	ACS-SS01-AVG	Sep-97	Yes	5.6E-02
5	SURFACE (0-2')	SVOC	Chrysene	218-01-9	2	2	6.6E-02	8.8E-02	2.3E-01	1.1E-01	ACS-SS02-001	Sep-97	Yes	1.1E-01
5	SURFACE (0-2')	SVOC	Di-n-butylphthalate	84-74-2	2	2	6.8E-02	9.4E-02	2.6E-01	1.2E-01	ACS-SS01-AVG	Sep-97	Yes	1.2E-01
5	SURFACE (0-2')	SVOC	Fluoranthene	206-44-0	2	2	1.1E-01	1.3E-01	2.6E-01	1.5E-01	ACS-SS02-001	Sep-97	Yes	1.5E-01
5	SURFACE (0-2')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2	2	4.9E-02	6.8E-02	1.9E-01	8.7E-02	ACS-SS02-001	Sep-97	Yes	8.7E-02
5	SURFACE (0-2')	SVOC	Phenanthrene	85-01-8	2	2	4.7E-02	5.5E-02	1.0E-01	6.2E-02	ACS-SS02-001	Sep-97	Yes	6.2E-02
5	SURFACE (0-2')	SVOC	Pyrene	129-00-0	2	2	1.1E-01	1.3E-01	3.1E-01	1.6E-01	ACS-SS02-001	Sep-97	Yes	1.6E-01
5	SURFACE (0-2')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2	1	6.3E-01	4.3E-01	1.7E+00	6.3E-01	ACS-SS01-AVG	Sep-97	Yes	6.3E-01
5	SURFACE (0-2')	P/PCB	4,4'-DDE	72-55-9	2	2	6.9E-03	8.9E-03	2.2E-02	1.1E-02	ACS-SS02-001	Sep-97	Yes	1.1E-02
5	SURFACE (0-2')	P/PCB	4,4'-DDT	50-29-3	2	2	9.2E-03	1.2E-02	2.7E-02	1.4E-02	ACS-SS02-001	Sep-97	Yes	1.4E-02
5	SURFACE (0-2')	P/PCB	Aroclor-1248	12672-29-6	2	1	1.4E-01	8.0E-02	4.6E-01	1.4E-01	ACS-SS02-001	Sep-97	Yes	1.4E-01
5	SURFACE (0-2')	P/PCB	Aroclor-1254	11097-69-1	2	2	2.6E-01	2.9E-01	4.9E-01	3.2E-01	ACS-SS02-001	Sep-97	Yes	3.2E-01
5	SURFACE (0-2')	P/PCB	Aroclor-1260	11096-82-5	2	2	1.8E-01	2.1E-01	3.6E-01	2.3E-01	ACS-SS02-001	Sep-97	Yes	2.3E-01
5	SURFACE (0-2')	P/PCB	Dieldrin	60-57-1	2	2	3.9E-03	4.4E-03	7.7E-03	5.0E-03	ACS-SS01-AVG	Sep-97	Yes	5.0E-03
5	SURFACE (0-2')	P/PCB	Endosulfan I	959-98-8	2	2	2.0E-03	2.8E-03	7.5E-03	3.5E-03	ACS-SS02-001	Sep-97	Yes	3.5E-03
5	SURFACE (0-2')	P/PCB	Endosulfan sulfate	1031-07-8	2	1	2.3E-03	2.1E-03	3.2E-03	2.3E-03	ACS-SS01-AVG	Sep-97	Yes	2.3E-03
5	SURFACE (0-2')	P/PCB	Endrin	72-20-8	2	2	4.8E-03	5.1E-03	7.5E-03	5.5E-03	ACS-SS02-001	Sep-97	Yes	5.5E-03
5	SURFACE (0-2')	P/PCB	Endrin aldehyde	7421-93-4	2	2	5.6E-03	6.2E-03	9.6E-03	6.7E-03	ACS-SS02-001	Sep-97	Yes	6.7E-03
5	SURFACE (0-2')	P/PCB	Endrin ketone	53494-70-5	2	2	5.7E-03	6.4E-03	1.0E-02	7.0E-03	ACS-SS02-001	Sep-97	Yes	7.0E-03
5	SURFACE (0-2')	P/PCB	Heptachlor	76-44-8	2	2	1.0E-03	1.2E-03	2.1E-03	1.3E-03	ACS-SS01-AVG	Sep-97	Yes	1.3E-03
5	SURFACE (0-2')	P/PCB	Heptachlor epoxide	1024-57-3	2	2	3.9E-03	4.2E-03	6.6E-03	4.6E-03	ACS-SS02-001	Sep-97	Yes	4.6E-03
5	SURFACE (0-2')	P/PCB	Methoxychlor	72-43-5	2	2	1.4E-02	1.6E-02	2.5E-02	1.7E-02	ACS-SS02-001	Sep-97	Yes	1.7E-02
5	SURFACE (0-2')	P/PCB	alpha-BHC	319-84-6	2	1	1.1E-03	1.0E-03	1.2E-03	1.1E-03	ACS-SS01-AVG	Sep-97	Yes	1.1E-03
5	SURFACE (0-2')	P/PCB	alpha-Chlordane	5103-71-9	2	2	5.0E-04	5.5E-03	3.7E-02	1.0E-02	ACS-SS01-AVG	Sep-97	Yes	1.0E-02
5	SURFACE (0-2')	P/PCB	gamma-BHC	58-89-9	2	1	5.0E-04	7.5E-04	2.3E-03	5.0E-04	ACS-SS01-AVG	Sep-97	Yes	5.0E-04
5	SURFACE (0-2')	P/PCB	gamma-Chlordane	5103-74-2	2	2	5.2E-03	6.9E-03	1.7E-02	8.5E-03	ACS-SS01-AVG	Sep-97	Yes	8.5E-03

Table 2-5a Summary of Constituents in Soil Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
5	SURFACE (0-2')	INORG	Aluminum	7429-90-5	2	2	4.1E+03	5.1E+03	1.1E+04	6.1E+03	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	Antimony	7440-36-0	2	1	1.5E+01	1.0E+01	4.0E+01	1.5E+01	ACS-SS02-001	Sep-97	Yes	1.5E+01
5	SURFACE (0-2')	INORG	Arsenic	7440-38-2	2	2	2.9E+00	3.2E+00	4.7E+00	3.4E+00	ACS-SS02-001	Sep-97	Yes	3.4E+00
5	SURFACE (0-2')	INORG	Barium	7440-39-3	2	2	5.3E+01	8.6E+01	2.9E+02	1.2E+02	ACS-SS02-001	Sep-97	Yes	1.2E+02
5	SURFACE (0-2')	INORG	Beryllium	7440-41-7	2	2	2.7E-01	3.8E-01	1.0E+00	4.8E-01	ACS-SS02-001	Sep-97	Yes	4.8E-01
5	SURFACE (0-2')	INORG	Cadmium	7440-43-9	2	2	1.4E+00	1.5E+00	1.8E+00	1.5E+00	ACS-SS02-001	Sep-97	Yes	1.5E+00
5	SURFACE (0-2')	INORG	Calcium	7440-70-2	2	2	2.3E+03	5.0E+03	2.2E+04	7.7E+03	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	*Chromium (total)*	7440-47-3	2	2	1.8E+01	2.3E+01	5.3E+01	2.8E+01	ACS-SS01-AVG	Sep-97	Yes	2.8E+01
5	SURFACE (0-2')	INORG	Cobalt	7440-48-4	2	2	4.1E+00	4.8E+00	9.7E+00	5.6E+00	ACS-SS02-001	Sep-97	Yes	5.6E+00
5	SURFACE (0-2')	INORG	Copper	7440-50-8	2	2	1.7E+01	1.9E+01	2.6E+01	2.0E+01	ACS-SS02-001	Sep-97	Yes	2.0E+01
5	SURFACE (0-2')	INORG	Cyanide (total)	57-12-5	2	2	1.5E-02	7.3E-02	4.4E-01	1.3E-01	ACS-SS02-001	Sep-97	Yes	1.3E-01
5	SURFACE (0-2')	INORG	Iron	7439-89-6	2	2	6.4E+03	8.4E+03	2.1E+04	1.0E+04	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	Lead	7439-92-1	2	2	4.7E+01	6.5E+01	1.8E+02	8.3E+01	ACS-SS02-001	Sep-97	Yes	8.3E+01
5	SURFACE (0-2')	INORG	Magnesium	7439-95-4	2	2	1.2E+03	1.9E+03	6.1E+03	2.6E+03	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	Manganese	7439-96-5	2	2	3.5E+02	4.0E+02	6.7E+02	4.4E+02	ACS-SS02-001	Sep-97	Yes	4.4E+02
5	SURFACE (0-2')	INORG	Mercury	7439-97-6	2	1	7.0E-02	4.8E-02	1.9E-01	7.0E-02	ACS-SS02-001	Sep-97	Yes	7.0E-02
5	SURFACE (0-2')	INORG	Nickel	7440-02-0	2	2	7.3E+00	1.2E+01	4.3E+01	1.7E+01	ACS-SS01-AVG	Sep-97	Yes	1.7E+01
5	SURFACE (0-2')	INORG	Potassium	7440-09-7	2	2	6.1E+02	7.3E+02	1.5E+03	8.6E+02	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	Selenium	7782-49-2	2	2	4.3E-01	5.0E-01	9.4E-01	5.7E-01	ACS-SS02-001	Sep-97	Yes	5.7E-01
5	SURFACE (0-2')	INORG	Silver	7440-22-4	2	1	1.1E+00	8.3E-01	2.6E+00	1.1E+00	ACS-SS01-AVG	Sep-97	Yes	1.1E+00
5	SURFACE (0-2')	INORG	Sodium	7440-23-5	2	2	2.1E+01	1.1E+02	6.4E+02	1.9E+02	ACS-SS02-001	Sep-97	No (e)	
5	SURFACE (0-2')	INORG	Vanadium	7440-62-2	2	2	9.1E+00	1.1E+01	2.0E+01	1.2E+01	ACS-SS02-001	Sep-97	Yes	1.2E+01
5	SURFACE (0-2')	INORG	Zinc	7440-66-6	2	2	6.9E+01	9.4E+01	2.5E+02	1.2E+02	ACS-SS02-001	Sep-97	Yes	1.2E+02

(a) Table only includes constituents that were detected at least once in media/area/depth.
(b) The arithmetic mean was calculated for >1 valid sample and assumed the concentration is equal to one-half the detection limit for non-detects.
(c) UCL = 95% Upper Confidence Limit on the arithmetic mean. The UCL was calculated for >1 valid sample. The UCL was calculated assuming the concentration is equal to one-half the detection limit for non-detects
(d) The UCL was used as the exposure point concentration unless it was greater than the maximum, in which case, the maximum detected concentration was used.
(e) Chemical was not retained for risk calculations because it is a major earth element and does not have a toxicity value. See text
(f) Chemical was not retained for risk calculations because it was detected in less than 5% of the samples from this media/area/depth.

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SURFACE (0-2')	VOC	1,1,1-Trichloroethane	71-55-6	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	1,1,2,2-Tetrachloroethane	79-34-5	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	1,1,2-Trichloroethane	79-00-5	14	1	1.3E-02	7.3E-02	1.6E-01	1.3E-02	SS103-AVG	Sep-97	Yes	1.3E-02
1	SURFACE (0-2')	VOC	1,1-Dichloroethane	75-34-3	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	1,2-Dichloroethane	107-06-2	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	1,2-Dichloroethene (total)	540-59-0	14	2	6.5E-03	7.3E-02	1.6E-01	1.2E-02	ACS-SS108	Sep-97	Yes	1.2E-02
1	SURFACE (0-2')	VOC	1,2-Dichloropropane	78-87-5	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	2-Butanone	78-93-3	14	0		9.8E-02	2.1E-01				Yes (g)	2.1E-01
1	SURFACE (0-2')	VOC	4-Methyl-2-pentanone	108-10-1	14	0		9.8E-02	2.1E-01				Yes (g)	2.1E-01
1	SURFACE (0-2')	VOC	Acetone	67-64-1	14	0		9.8E-02	2.1E-01				Yes (g)	2.1E-01
1	SURFACE (0-2')	VOC	Benzene	71-43-2	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	Carbon Disulfide	75-15-0	14	1	2.0E-03	7.2E-02	1.6E-01	2.0E-03	ACS-SS112	Sep-97	Yes	2.0E-03
1	SURFACE (0-2')	VOC	Chlorobenzene	108-90-7	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	Chloroform	67-66-3	14	2	2.0E-03	7.2E-02	1.6E-01	3.0E-03	ACS-SS109	Sep-97	Yes	3.0E-03
1	SURFACE (0-2')	VOC	Ethyl Benzene	100-41-4	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	Methylene Chloride	75-09-2	14	0		7.8E-02	1.7E-01				Yes (g)	1.7E-01
1	SURFACE (0-2')	VOC	Styrene	100-42-5	14	0		7.3E-02	1.6E-01				Yes (g)	1.6E-01
1	SURFACE (0-2')	VOC	Tetrachloroethene	127-18-4	14	4	2.7E-02	1.5E-01	3.5E-01	1.6E+00	ACS-SS101	Sep-97	Yes	3.5E-01
1	SURFACE (0-2')	VOC	Toluene	108-88-3	14	2	3.3E-01	6.3E-02	1.3E-01	4.8E-01	ACS-SS101	Sep-97	Yes	1.3E-01
1	SURFACE (0-2')	VOC	Trichloroethene	79-01-6	14	4	2.0E-03	4.5E-02	9.5E-02	2.2E-01	ACS-SS101	Sep-97	Yes	9.5E-02
1	SURFACE (0-2')	VOC	Xylenes (total)	1330-20-7	14	2	6.5E-01	1.7E+00	4.6E+00	2.3E+01	ACS-SS101	Sep-97	Yes	4.6E+00
1	SURFACE (0-2')	SVOC	1,2,4-Trichlorobenzene	120-82-1	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	1,2-Dichlorobenzene	95-50-1	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	1,3-Dichlorobenzene	541-73-1	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	1,4-Dichlorobenzene	106-46-7	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	2,4-Dichlorophenol	120-83-2	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	2,4-Dimethylphenol	105-67-9	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	2-Methylnaphthalene	91-57-6	14	1	3.4E-01	2.7E-01	3.4E-01	3.4E-01	SS103-AVG		Yes	3.4E-01
1	SURFACE (0-2')	SVOC	2-Methylphenol	95-48-7	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	3,3'-Dichlorobenzidine	91-94-1	14	1	2.1E-01	2.6E-01	3.3E-01	2.1E-01	ACS-SS101	Sep-97	Yes	2.1E-01
1	SURFACE (0-2')	SVOC	4-Methylphenol	106-44-5	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Acenaphthene	83-32-9	14	0		3.0E-01	4.0E-01				Yes (g)	4.0E-01
1	SURFACE (0-2')	SVOC	Acenaphthylene	208-96-8	14	1	5.7E-01	2.9E-01	3.7E-01	5.7E-01	SS103-AVG		Yes	3.7E-01
1	SURFACE (0-2')	SVOC	Anthracene	120-12-7	14	2	5.5E-02	2.4E-01	3.2E-01	8.9E-02	SS103-AVG		Yes	8.9E-02
1	SURFACE (0-2')	SVOC	Benzo(a)anthracene	56-55-3	14	2	4.4E-02	2.4E-01	3.2E-01	5.9E-02	ACS-SS107	Sep-97	Yes	5.9E-02
1	SURFACE (0-2')	SVOC	Benzo(a)pyrene	50-32-8	14	3	5.9E-02	2.3E-01	3.2E-01	8.3E-02	SS103-AVG		Yes	8.3E-02
1	SURFACE (0-2')	SVOC	Benzo(b)fluoranthene	205-99-2	14	3	8.2E-02	2.4E-01	3.2E-01	8.6E-02	ACS-SS109	Sep-97	Yes	8.6E-02
1	SURFACE (0-2')	SVOC	Benzo(k)fluoranthene	207-08-9	14	2	6.5E-02	2.4E-01	3.2E-01	7.3E-02	SS103-AVG		Yes	7.3E-02
1	SURFACE (0-2')	SVOC	Benzoic Acid	65-85-0	1	0							Yes (g)	1.3E+01
1	SURFACE (0-2')	SVOC	bis(2-Chloroethyl) ether	111-44-4	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	14	14	7.0E-02	2.4E+00	1.2E+01	9.8E+00	ACS-SS112	Sep-97	Yes	9.8E+00
1	SURFACE (0-2')	SVOC	Butylbenzylphthalate	85-68-7	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Chrysene	218-01-9	14	3	5.9E-02	2.3E-01	3.2E-01	7.4E-02	ACS-SS109	Sep-97	Yes	7.4E-02
1	SURFACE (0-2')	SVOC	Dibenzofuran	132-64-9	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Diethylphthalate	84-66-2	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Dimethylphthalate	131-11-3	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Di-n-butylphthalate	84-74-2	14	1	5.1E-02	2.5E-01	3.3E-01	5.1E-02	ACS-SA03-03	Aug-89	Yes	5.1E-02
1	SURFACE (0-2')	SVOC	Di-n-octylphthalate	117-84-0	14	2	4.9E-02	2.3E-01	3.1E-01	1.1E-01	ACS-SS101	Sep-97	Yes	1.1E-01
1	SURFACE (0-2')	SVOC	Fluoranthene	206-44-0	14	3	6.7E-02	2.4E-01	3.2E-01	9.8E-02	ACS-SS107	Sep-97	Yes	9.8E-02
1	SURFACE (0-2')	SVOC	Fluorene	86-73-7	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Hexachlorobenzene	118-74-1	14	1	2.9E-02	2.5E-01	3.3E-01	2.9E-02	ACS-SS110	Sep-97	Yes	2.9E-02
1	SURFACE (0-2')	SVOC	Hexachlorobutadiene	87-68-3	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	14	1	4.4E-02	2.5E-01	3.2E-01	4.4E-02	ACS-SS109	Sep-97	Yes	4.4E-02
1	SURFACE (0-2')	SVOC	Isophorone	78-59-1	14	4	3.7E-02	2.2E-01	3.0E-01	1.4E-01	ACS-SS101	Sep-97	Yes	1.4E-01
1	SURFACE (0-2')	SVOC	Naphthalene	91-20-3	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Pentachlorophenol	87-86-5	14	0		6.0E-01	7.1E-01				Yes (g)	7.1E-01
1	SURFACE (0-2')	SVOC	Phenanthrene	85-01-8	14	2	5.0E-02	2.4E-01	3.2E-01	6.1E-02	ACS-SS107	Sep-97	Yes	6.1E-02
1	SURFACE (0-2')	SVOC	Phenol	108-95-2	14	0		2.6E-01	3.3E-01				Yes (g)	3.3E-01
1	SURFACE (0-2')	SVOC	Pyrene	129-00-0	14	3	9.5E-02	2.4E-01	3.2E-01	1.2E-01	SS103-AVG		Yes	1.2E-01
1	SURFACE (0-2')	P/PCB	4,4'-DDD	72-54-8	14	0		1.5E-02	2.6E-02				Yes (g)	2.6E-02
1	SURFACE (0-2')	P/PCB	4,4'-DDT	50-29-3	14	0		1.5E-02	2.6E-02				Yes (g)	2.6E-02
1	SURFACE (0-2')	P/PCB	Aroclor-1242	53469-21-9	14	4	3.9E-02	2.3E-01	4.0E-01	1.5E+00	SS103-AVG		Yes	4.0E-01
1	SURFACE (0-2')	P/PCB	Aroclor-1248	12672-29-6	14	1	2.2E+00	2.7E-01	5.3E-01	2.2E+00	ACS-SS102	Sep-97	Yes	5.3E-01
1	SURFACE (0-2')	P/PCB	Aroclor-1254	11097-69-1	14	11	8.0E-02	1.5E+00	2.4E+00	5.5E+00	ACS-SS101	Sep-97	Yes	2.4E+00

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SURFACE (0-2')	P/PCB	Aroclor-1260	11096-82-5	14	2	2.1E-01	2.8E-01	5.0E-01	1.7E+00	SS103-AVG		Yes	5.0E-01
1	SURFACE (0-2')	P/PCB	Dieldrin	60-57-1	14	0		1.5E-02	2.6E-02				Yes (g)	2.6E-02
1	SURFACE (0-2')	P/PCB	Endosulfan I	959-98-8	14	0		7.8E-03	1.3E-02				Yes (g)	1.3E-02
1	SURFACE (0-2')	P/PCB	Endrin	72-20-8	14	0		1.5E-02	2.6E-02				Yes (g)	2.6E-02
1	SURFACE (0-2')	P/PCB	Endrin ketone	53494-70-5	14	1	1.1E-02	4.1E-02	9.6E-02	1.1E-02	ACS-SS106	Sep-97	Yes	1.1E-02
1	SURFACE (0-2')	P/PCB	gamma-Chlordane	5103-74-2	14	0		3.6E-02	9.1E-02				Yes (g)	9.1E-02
1	SURFACE (0-2')	INORG	Aluminum	7429-90-5	14	14	3.6E+03	1.1E+04	1.7E+04	2.5E+04	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Antimony	7440-36-0	13	4	5.3E-01	4.3E-01	7.2E-01	1.8E+00	SS103-AVG		Yes	7.2E-01
1	SURFACE (0-2')	INORG	Arsenic	7440-38-2	14	14	1.5E+00	2.4E+00	2.8E+00	3.3E+00	ACS-SS113	Sep-97	Yes	2.8E+00
1	SURFACE (0-2')	INORG	Barium	7440-39-3	14	13	3.8E+01	1.2E+02	1.5E+02	2.4E+02	ACS-SS109	Sep-97	Yes	1.5E+02
1	SURFACE (0-2')	INORG	Beryllium	7440-41-7	14	14	7.0E-02	2.2E+00	3.1E+00	5.8E+00	ACS-SS109	Sep-97	Yes	3.1E+00
1	SURFACE (0-2')	INORG	Cadmium	7440-43-9	14	14	2.7E-01	1.1E+00	1.7E+00	5.2E+00	ACS-SS101	Sep-97	Yes	1.7E+00
1	SURFACE (0-2')	INORG	Calcium	7440-70-2	14	14	3.7E+02	6.0E+04	8.4E+04	1.7E+05	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Chromium (total)	7440-47-3	14	14	1.1E+01	2.4E+01	3.2E+01	7.1E+01	ACS-SS101	Sep-97	Yes	3.2E+01
1	SURFACE (0-2')	INORG	Cobalt	7440-48-4	14	13	1.3E+00	2.8E+00	3.6E+00	4.5E+00	ACS-SS101	Sep-97	Yes	3.6E+00
1	SURFACE (0-2')	INORG	Copper	7440-50-8	14	14	9.7E+00	2.1E+01	2.7E+01	5.5E+01	ACS-SS110	Sep-97	Yes	2.7E+01
1	SURFACE (0-2')	INORG	Cyanide (total)	57-12-5	14	8	4.3E-01	5.8E-01	7.8E-01	1.2E+00	ACS-SS107	Sep-97	Yes	7.8E-01
1	SURFACE (0-2')	INORG	Iron	7439-89-6	14	14	2.1E+03	6.3E+03	8.5E+03	1.5E+04	ACS-SS101	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Lead	7439-92-1	14	14	2.3E+01	8.4E+01	1.3E+02	3.6E+02	ACS-SS101	Sep-97	Yes	1.3E+02
1	SURFACE (0-2')	INORG	Magnesium	7439-95-4	14	14	5.6E+02	1.5E+04	2.1E+04	3.7E+04	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Manganese	7439-96-5	14	14	1.9E+01	8.9E+02	1.2E+03	2.5E+03	ACS-SS109	Sep-97	Yes	1.2E+03
1	SURFACE (0-2')	INORG	Mercury	7439-97-6	9	8	7.0E-02	6.2E-01	5.6E+00	3.9E+00	SS103-AVG		Yes	3.9E+00
1	SURFACE (0-2')	INORG	Nickel	7440-02-0	14	13	4.9E+00	6.7E+00	7.7E+00	1.2E+01	ACS-SS101	Sep-97	Yes	7.7E+00
1	SURFACE (0-2')	INORG	Potassium	7440-09-7	14	14	2.6E+02	1.4E+03	2.5E+03	3.7E+03	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Selenium	7782-49-2	14	2	4.2E-01	3.3E-01	4.3E-01	5.0E-01	ACS-SS101	Sep-97	Yes	4.3E-01
1	SURFACE (0-2')	INORG	Silver	7440-22-4	14	4	1.8E-01	2.1E-01	3.4E-01	2.9E-01	ACS-SS109	Sep-97	Yes	2.9E-01
1	SURFACE (0-2')	INORG	Sodium	7440-23-5	14	13	5.8E+01	5.0E+02	7.0E+02	1.3E+03	ACS-SS109	Sep-97	No (e)	
1	SURFACE (0-2')	INORG	Vanadium	7440-62-2	14	14	6.7E+00	1.0E+01	1.2E+01	1.8E+01	ACS-SS109	Sep-97	Yes	1.2E+01
1	SURFACE (0-2')	INORG	Zinc	7440-66-6	14	14	4.6E+01	8.1E+01	9.7E+01	1.8E+02	ACS-SS101	Sep-97	Yes	9.7E+01
1	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	63	37	2.0E-03	7.3E+02	1.5E+03	2.1E+04	ACS-TP07-03	Aug-89	Yes	1.5E+03
1	SUBSURFACE (2-10')	VOC	1,1,2,2-Tetrachloroethane	79-34-5	63	4	2.0E-03	2.4E+03	5.5E+03	3.9E+00	ACS-SB11-10	Aug-89	Yes	3.9E+00
1	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	63	5	2.0E-03	8.2E+01	1.9E+02	8.1E+00	ACS-TP04-08	Aug-89	Yes	8.1E+00
1	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	49	8	2.0E-03	1.0E+02	2.4E+02	2.2E+01	ACS-SB16-06	Sep-89	Yes	2.2E+01
1	SUBSURFACE (2-10')	VOC	1,1-Dichloroethene	75-35-4	63	1	6.7E-01	8.2E+01	1.9E+02	6.7E-01	SB91-03-FT	Jun-93	No (f)	
1	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	63	5	1.0E-03	8.2E+01	1.9E+02	4.0E+01	ACS-SB17-06 5	Sep-89	Yes	4.0E+01
1	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	47	23	2.0E-03	1.1E+02	2.6E+02	2.4E+02	CS-SB110-SS4-07-0	Jan-96	Yes	2.4E+02
1	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	63	7	1.0E-03	8.3E+01	1.9E+02	2.2E+01	ACS-TP03-09	Aug-89	Yes	2.2E+01
1	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	63	18	1.5E-02	1.9E+02	4.0E+02	5.3E+02	ACS-TP03-09	Aug-89	Yes	4.0E+02
1	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	63	31	2.0E-03	2.1E+02	4.2E+02	1.5E+03	ACS-TP06-04	Aug-89	Yes	4.2E+02
1	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	62	6	8.8E-02	1.9E+02	4.0E+02	6.5E+02	SB92-03-FT	Jun-93	Yes	4.0E+02
1	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	62	35	1.0E-03	1.3E+02	3.2E+02	7.1E+03	ACS-TP02-03	Aug-89	Yes	3.2E+02
1	SUBSURFACE (2-10')	VOC	Carbon Disulfide	75-15-0	49	0		1.0E+02	2.4E+02				Yes (g)	2.0E-03
1	SUBSURFACE (2-10')	VOC	Carbon Tetrachloride	56-23-5	63	2	5.3E+02	1.4E+02	2.9E+02	3.6E+03	ACS-TP07-03	Aug-89	No (f)	
1	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	62	6	2.0E-03	8.3E+01	1.9E+02	1.0E+01	SB91-05-FT	Jun-93	Yes	1.0E+01
1	SUBSURFACE (2-10')	VOC	Chloroethane	75-00-3	63	1	1.2E-02	1.5E+02	3.6E+02	1.2E-02	SB-089-AVG		No (f)	
1	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	63	20	1.0E-03	1.6E+02	2.9E+02	2.1E+03	ACS-TP03-09	Aug-89	Yes	2.9E+02
1	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	16	4	2.1E-02	8.1E+01	1.4E+06	1.2E+03	SB92-03-FT	Jun-93	Yes	1.2E+03
1	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	63	57	2.0E-03	3.8E+02	5.9E+02	6.7E+03	ACS-TP02-03	Aug-89	Yes	5.9E+02
1	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	14	13	1.9E-01	8.8E+02	1.6E+03	5.5E+03	SB92-03-FT	Jun-93	Yes	1.6E+03
1	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	63	14	3.1E-02	1.8E+02	3.5E+02	5.7E+02	SB93-05-FT	Jun-93	Yes	3.5E+02
1	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	14	13	1.2E-01	1.8E+02	3.3E+02	1.1E+03	SB92-03-FT	Jun-93	Yes	3.3E+02
1	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	63	7	1.0E-03	8.5E+01	1.9E+02	9.0E+01	ACS-TP07-03	Aug-89	Yes	9.0E+01
1	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	63	45	2.0E-03	4.4E+02	7.3E+02	8.3E+03	CS-SB110-SS4-07-0	Jan 96	Yes	7.3E+02
1	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	49	42	4.0E-03	5.4E+03	1.2E+04	2.0E+05	ACS-TP02-03	Aug-89	Yes	1.2E+04
1	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	63	32	4.0E-03	2.0E+02	3.4E+02	2.8E+03	CS-SB110-SS4-07-0	Jan-96	Yes	3.4E+02
1	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	49	45	1.1E-02	1.8E+03	2.8E+03	2.5E+04	ACS-TP02-03	Aug 89	Yes	2.8E+03
1	SUBSURFACE (2-10')	SVOC	1,2,4-Trichlorobenzene	120-82-1	46	4	1.2E+00	4.9E+00	7.7E+00	4.3E+00	ACS-SB17-06 5	Sep-89	Yes	4.3E+00
1	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	30	16	1.1E-01	1.0E+01	1.5E+01	5.3E+01	ACS-SB17-06 5	Sep-89	Yes	1.5E+01
1	SUBSURFACE (2-10')	SVOC	1,3-Dichlorobenzene	541-73-1	30	4	1.1E-01	6.8E+00	1.1E+01	8.8E-01	ACS-SB69-08	Jun-90	Yes	8.8E-01
1	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	44	7	5.7E-01	5.0E+00	8.0E+00	5.2E+00	ACS-SB17-06 5	Sep-89	Yes	5.2E+00
1	SUBSURFACE (2-10')	SVOC	2,4,5-Trichlorophenol	95-95-4	32	1	2.7E-01	3.2E+01	5.2E+01	2.7E-01	ACS-SB11-10	Aug-89	No (f)	
1	SUBSURFACE (2-10')	SVOC	2,4-Dichlorophenol	120-83-2	32	3	8.9E-02	6.5E+00	1.1E+01	4.1E+00	ACS-SB17-06 5	Sep-89	Yes	4.1E+00
1	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	32	10	7.6E-02	6.8E+00	1.1E+01	1.2E+01	ACS-TP02-03	Aug-89	Yes	1.1E+01
1	SUBSURFACE (2-10')	SVOC	2-Chloronaphthalene	91-58-7	32	1	1.8E+00	6.8E+00	1.1E+01	1.8E+00	ACS-SB70-08	Jun-90	No (f)	

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	32	23	1 5E-01	4 7E+01	7 2E+01	3 2E+02	ACS-SB70-08	Jun-90	Yes	7 2E+01
1	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	30	10	4 2E-02	6 9E+00	1 1E+01	1 5E+01	ACS-SB17-06 5	Sep-89	Yes	1 1E+01
1	SUBSURFACE (2-10')	SVOC	3 3'-Dichlorobenzidine	91-94-1	32	0		1 3E+01	2 1E+01				Yes (g)	2 1E-01
1	SUBSURFACE (2-10')	SVOC	4-Bromophenyl-phenylether	101-55-3	32	1	2 2E+00	6 8E+00	1 1E+01	2 2E+00	ACS-SB20-07	May-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	32	13	5 9E-02	8 2E+00	1 3E+01	4 3E+01	ACS-SB17-06 5	Sep-89	Yes	1 3E+01
1	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	32	10	6 0E-02	2 7E+01	4 7E+01	1 1E+01	ACS-TP02-03	Aug-89	Yes	1 1E+01
1	SUBSURFACE (2-10')	SVOC	Acenaphthylene	208-96-8	32	3	3 4E-01	6 5E+00	1 0E+01	5 5E+00	ACS-TP02-03	Aug-89	Yes	5 5E+00
1	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	32	4	2 2E-02	6 5E+00	1 0E+01	1 1E+00	ACS-SB70-08	Jun-90	Yes	1 1E+00
1	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	32	1	1 7E-01	6 8E+00	1 1E+01	1 7E-01	ACS-SB10-05	Aug-89	Yes	1 7E-01
1	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	46	1	1 8E-01	5 1E+00	7 9E+00	1 8E-01	SS01-AVG		Yes	1 8E-01
1	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	46	2	1 8E-01	5 0E+00	7 9E+00	3 9E-01	ACS-SB70-08	Jun-90	Yes	3 9E-01
1	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	46	1	1 8E-01	5 1E+00	7 9E+00	1 8E-01	SS01-AVG		No (f)	
1	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	46	2	1 8E-01	5 0E+00	7 9E+00	3 9E-01	ACS-SB70-08	Jun-90	Yes	3 9E-01
1	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	29	4	4 9E-02	3 5E+01	5 6E+01	1 3E+01	ACS-SB73-05	Jun-90	Yes	1 3E+01
1	SUBSURFACE (2-10')	SVOC	Benzyl Alcohol	100-51-6	30	1	1 4E+00	6 9E+00	1 1E+01	1 4E+00	ACS-SB73-05	Jun-90	No (f)	
1	SUBSURFACE (2-10')	SVOC	bis(2-Chloroethyl) ether	111-44-4	46	9	9 9E-02	6 6E+00	1 0E+01	6 4E+01	ACS-SB17-06 5	Sep-89	Yes	1 0E+01
1	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	46	39	3 9E-02	2 1E+02	3 3E+02	2 6E+03	ACS-TP06-04	Aug-89	Yes	3 3E+02
1	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	32	21	1 9E-01	7 1E+01	1 3E+02	9 6E+02	ACS-TP06-04	Aug-89	Yes	1 3E+02
1	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	46	2	8 4E-02	5 0E+00	7 9E+00	2 6E-01	ACS-SB70-08	Jun-90	Yes	2 6E-01
1	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	32	3	4 5E-01	6 4E+00	1 0E+01	4 2E+00	ACS-TP02-03	Aug-89	Yes	4 2E+00
1	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	32	15	4 6E-02	9 7E+00	1 6E+01	1 0E+02	ACS-TP06-04	Aug-89	Yes	1 6E+01
1	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	32	12	4 2E-02	3 0E+01	5 4E+01	3 2E+02	ACS-TP06-04	Aug-89	Yes	5 4E+01
1	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	46	25	1 6E-01	5 4E+01	8 6E+01	6 9E+02	ACS-TP06-04	Aug-89	Yes	8 6E+01
1	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	32	10	7 7E-02	6 1E+00	1 0E+01	2 4E+01	ACS-TP06-04	Aug-89	Yes	1 0E+01
1	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	32	8	5 4E-02	6 1E+00	1 0E+01	3 8E+00	ACS-TP02-03	Aug-89	Yes	3 8E+00
1	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	32	10	1 1E-01	6 5E+00	1 0E+01	1 4E+01	ACS-TP02-03	Aug-89	Yes	1 0E+01
1	SUBSURFACE (2-10')	SVOC	Hexachlorobenzene	118-74-1	46	2	5 2E-01	5 0E+00	7 9E+00	5 9E-01	SB90-03-FT	Jun-93	Yes	5 9E-01
1	SUBSURFACE (2-10')	SVOC	Hexachlorobutadiene	87-68-3	46	11	2 1E-01	4 4E+00	6 0E+00	2 2E+01	ACS-TP05-03	Aug-89	Yes	6 0E+00
1	SUBSURFACE (2-10')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	46	1	1 8E-01	5 1E+00	7 9E+00	1 8E-01	SS01-AVG		Yes	1 8E-01
1	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	46	17	4 1E-02	1 1E+02	2 2E+02	2 6E+03	ACS-TP06-04	Aug-89	Yes	2 2E+02
1	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	46	37	3 7E-01	7 3E+01	1 2E+02	8 5E+02	SB91-05-FT	Jun-93	Yes	1 2E+02
1	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	46	1	1 3E+01	5 1E+00	7 9E+00	1 3E+01	ACS-SB17-06 5	Sep-89	No (f)	
1	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	44	9	1 6E-01	1 4E+01	2 0E+01	6 1E+01	ACS-TP05-03	Aug-89	Yes	2 0E+01
1	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	32	14	2 1E-02	5 2E+00	9 1E+00	2 0E+01	ACS-TP02-03	Aug-89	Yes	9 1E+00
1	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	32	18	5 3E-02	1 2E+01	2 1E+01	1 7E+02	ACS-TP06-04	Aug-89	Yes	2 1E+01
1	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	32	7	7 9E-02	6 2E+00	1 0E+01	5 9E+00	ACS-TP02-03	Aug-89	Yes	5 9E+00
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDD	72-54-8	38	2	1 5E-02	2 4E+00	4 3E+00	3 6E+00	SS02	Sep-96	Yes	3 6E+00
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDE	72-55-9	38	1	1 6E-02	2 3E+00	4 2E+00	1 6E-02	SS01-AVG		No (f)	
1	SUBSURFACE (2-10')	P/PCB	4,4'-DDT	50-29-3	37	3	5 0E-02	2 8E+00	4 8E+00	1 2E+01	ACS-SB17-06 5	Sep-89	Yes	4 8E+00
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	57	8	1 3E-01	1 8E+01	3 1E+01	4 0E+02	ACS-TP02-03	Aug-89	Yes	3 1E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672-29-6	57	13	5 3E-01	1 4E+01	2 1E+01	7 6E+01	ACS-SB20-07	May-90	Yes	2 1E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	57	24	2 3E-01	2 2E+01	3 5E+01	1 0E+02	ACS-TP02-03	Aug-89	Yes	3 5E+01
1	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82-5	57	5	3 3E-01	1 7E+01	3 0E+01	2 2E+01	ACS-SB70-08	Jun-90	Yes	2 2E+01
1	SUBSURFACE (2-10')	P/PCB	Dieldrin	60-57-1	38	2	1 0E-02	2 3E+00	4 2E+00	2 4E-01	SS02	Sep-96	Yes	2 4E-01
1	SUBSURFACE (2-10')	P/PCB	Endosulfan I	959-98-8	38	2	1 2E-02	1 2E+00	2 1E+00	1 2E+00	ACS-SB16-06	Sep-89	Yes	1 2E+00
1	SUBSURFACE (2-10')	P/PCB	Endrin	72-20-8	38	2	1 4E-02	2 3E+00	4 2E+00	1 6E+00	SS02	Sep-96	Yes	1 6E+00
1	SUBSURFACE (2-10')	P/PCB	Endrin ketone	53494-70-5	38	0		2 5E+00	4 4E+00				Yes (g)	1 1E-02
1	SUBSURFACE (2-10')	P/PCB	gamma-BHC	58-89-9	37	1	1 1E+00	1 2E+00	2 2E+00	1 1E+00	ACS-SB17-06 5	Sep-89	No (f)	
1	SUBSURFACE (2-10')	P/PCB	gamma-Chlordane	5103-74-2	38	2	7 3E-03	1 1E+01	2 1E+01	1 2E+00	SS02	Sep-96	Yes	1 2E+00
1	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	25	25	4 9E+02	3 4E+03	3 9E+03	5 7E+03	SS02	Sep-96	No (e)	
1	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	9	2	5 3E+00	6 9E+00	1 6E+01	4 7E+01	ACS-TP06-04	Aug-89	Yes	1 6E+01
1	SUBSURFACE (2-10')	INORG	Arsenic	7440-38-2	25	22	9 5E-01	2 9E+00	4 3E+00	2 1E+01	ACS-TP02-05	Aug-89	Yes	4 3E+00
1	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	25	6	8 2E+01	1 2E+02	2 3E+02	1 6E+03	ACS-TP06-04	Aug-89	Yes	2 3E+02
1	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	25	22	8 0E-02	1 7E-01	2 1E-01	4 4E-01	ACS-SB12-10	Aug-89	Yes	2 1E-01
1	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	25	20	5 0E-02	6 6E+00	1 5E+01	1 2E+02	ACS-TP06-04	Aug-89	Yes	1 5E+01
1	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	25	24	1 8E+02	7 8E+03	1 1E+04	3 8E+04	ACS-SB09-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	25	22	4 6E+00	9 4E+01	1 9E+02	1 4E+03	ACS-TP06-04	Aug-89	Yes	1 9E+02
1	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	25	2	2 2E+01	7 9E+00	1 1E+01	4 2E+01	ACS-TP06-04	Aug-89	Yes	1 1E+01
1	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	25	18	6 2E+00	3 9E+01	6 5E+01	3 6E+02	ACS-TP06-04	Aug-89	Yes	6 5E+01
1	SUBSURFACE (2-10')	INORG	Cyanide (total)	57-12-5	25	5	2 7E+00	4 8E+00	9 5E+00	7 1E+01	ACS-TP06-04	Aug-89	Yes	9 5E+00
1	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	25	25	4 8E+02	4 8E+03	5 6E+03	1 0E+04	ACS-TP02-05	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	25	25	2 9E+00	4 0E+02	8 4E+02	6 3E+03	ACS-TP06-04	Aug-89	Yes	8 4E+02
1	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	25	24	1 0E+02	3 6E+03	8 5E+03	1 7E+04	ACS-SB09-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	25	25	4 3E+00	1 6E+02	3 6E+02	1 0E+03	ACS-TP03-09	Aug-89	Yes	3 6E+02

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	25	10	1 6E-01	1 2E+00	2 3E+00	1 2E+01	ACS-TP02-03	Aug-89	Yes	2 3E+00
1	SUBSURFACE (2-10')	INORG	Nickel	7440-02 0	25	6	1 0E+01	7 0E+00	8 6E+00	2 0E+01	ACS-TP06-04	Aug-89	Yes	8 6E+00
1	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	25	23	1 8E+02	4 1E+02	4 7E+02	7 6E+02	ACS-SB12-10	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Selenium	7782-49 2	25	4	4 5E-01	4 2E-01	6 0E-01	2 8E+00	ACS-TP06-04	Aug-89	Yes	6 0E-01
1	SUBSURFACE (2-10')	INORG	Silver	7440-22-4	25	0		1 2E+00	1 3E+00				Yes (g)	2 9E 01
1	SUBSURFACE (2-10')	INORG	Sodium	7440 23-5	25	2	5 0E+02	1 9E+02	2 7E+02	1 3E+03	ACS-TP06-04	Aug-89	No (e)	
1	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	25	23	1 2E+00	9 3E+00	1 1E+01	2 1E+01	ACS-TP02-05	Aug-89	Yes	1 1E+01
1	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	25	25	5 3E+00	2 0E+02	3 6E+02	2 3E+03	ACS-TP06-04	Aug-89	Yes	3 6E+02
2	SUBSURFACE (2-4')	VOC	1,1,1-Trichloroethane	71-55-6	10	1	3 1E-02	7 7E+00	1 4E+01	3 1E-02	T12-S-IEA	Jul-97	Yes	3 1E-02
2	SUBSURFACE (2-4')	VOC	1,1-Dichloroethene	75-35-4	10	1	8 6E-03	7 7E+00	1 4E+01	8 6E-03	SB81-04-FT	Jun-93	Yes	8 6E-03
2	SUBSURFACE (2-4')	VOC	2-Butanone	78-93-3	10	4	2 8E+01	9 5E+01	8 1E+09	5 2E+02	SA02-S-IEA	Jul-97	Yes	5 2E+02
2	SUBSURFACE (2-4')	VOC	2-Hexanone	591-78-6	9	1	9 1E+01	2 5E+01	5 0E+01	9 1E+01	SA04-S-IEA	Jul-97	Yes	5 0E+01
2	SUBSURFACE (2-4')	VOC	4-Methyl-2-pentanone	108-10-1	10	3	1 5E+01	6 5E+01	1 5E+02	3 6E+02	SA02-S-IEA	Jul-97	Yes	1 5E+02
2	SUBSURFACE (2-4')	VOC	Acetone	67-64-1	10	1	1 2E+03	2 0E+02	4 8E+02	1 2E+03	SA04-S-IEA	Jul-97	Yes	4 8E+02
2	SUBSURFACE (2-4')	VOC	Benzene	71-43-2	10	1	4 5E+01	1 1E+01	2 2E+01	4 5E+01	SA04-S-IEA	Jul-97	Yes	2 2E+01
2	SUBSURFACE (2-4')	VOC	cis-1,2-Dichloroethene	156-59-2	10	2	1 8E-02	7 7E+00	1 4E+01	1 4E-01	T12-S-IEA	Jul-97	Yes	1 4E-01
2	SUBSURFACE (2-4')	VOC	Ethyl Benzene	100-41-4	10	5	1 1E-02	1 3E+02	3 0E+02	6 8E+02	SA02-S-IEA	Jul-97	Yes	3 0E+02
2	SUBSURFACE (2-4')	VOC	m,p-xylene	136777-61-2	1	1	3 2E-02			3 2E-02	SB81-04-FT	Jun-93	Yes	3 2E-02
2	SUBSURFACE (2-4')	VOC	Methylene Chloride	75-09-2	10	1	2 0E-02	1 5E+01	2 7E+01	2 0E-02	SB81-04-FT	Jun-93	Yes	2 0E-02
2	SUBSURFACE (2-4')	VOC	ortho-xylene	95-47-6	1	1	1 2E-02			1 2E-02	SB81-04-FT	Jun-93	Yes	1 2E-02
2	SUBSURFACE (2-4')	VOC	Tetrachloroethene	127-18-4	10	7	1 0E+00	1 7E+02	3 7E+02	8 8E+02	SA04-S-IEA	Jul-97	Yes	3 7E+02
2	SUBSURFACE (2-4')	VOC	Toluene	108-88-3	9	9	8 2E-02	3 7E+02	7 5E+02	1 3E+03	SA02-S-IEA	Jul-97	Yes	7 5E+02
2	SUBSURFACE (2-4')	VOC	Trichloroethene	79-01-6	10	3	1 1E+00	6 7E+01	1 5E+02	3 5E+02	SA04-S-IEA	Jul-97	Yes	1 5E+02
2	SUBSURFACE (2-4')	VOC	Xylenes (total)	1330-20-7	9	9	8 0E-01	8 4E+02	9 3E+08	3 6E+03	SA02-S-IEA	Jul-97	Yes	3 6E+03
2	SUBSURFACE (2-4')	SVOC	1,2-Dichlorobenzene	95-50-1	9	1	2 1E+02	3 8E+01	2 1E+03	2 1E+02	SA04-S-IEA	Jul-97	Yes	2 1E+02
2	SUBSURFACE (2-4')	SVOC	2,4-Dimethylphenol	105-67-9	9	1	8 8E+01	2 0E+01	4 6E+02	8 8E+01	SA04-S-IEA	Jul-97	Yes	8 8E+01
2	SUBSURFACE (2-4')	SVOC	2-Methylnaphthalene	91-57-6	9	2	1 6E+01	1 8E+01	3 2E+01	5 8E+01	SA02-S-IEA	Jul-97	Yes	3 2E+01
2	SUBSURFACE (2-4')	SVOC	2-Methylphenol	95-48-7	9	1	1 2E+02	2 5E+01	7 5E+02	1 2E+02	SA04-S-IEA	Jul-97	Yes	1 2E+02
2	SUBSURFACE (2-4')	SVOC	4-Methylphenol	106-44-5	9	1	1 8E+02	3 4E+01	1 6E+03	1 8E+02	SA04-S-IEA	Jul-97	Yes	1 8E+02
2	SUBSURFACE (2-4')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	10	6	9 3E+00	5 9E+01	1 1E+02	2 4E+02	SA02-S-IEA	Jul-97	Yes	1 1E+02
2	SUBSURFACE (2-4')	SVOC	Dimethylphthalate	131-11-3	9	1	1 1E+02	2 4E+01	7 0E+02	1 1E+02	SA02-S-IEA	Jul-97	Yes	1 1E+02
2	SUBSURFACE (2-4')	SVOC	Di-n-butylphthalate	84-74-2	10	3	1 1E+01	2 6E+01	5 0E+01	8 4E+01	SA02-S-IEA	Jul-97	Yes	5 0E+01
2	SUBSURFACE (2-4')	SVOC	Isophorone	78-59-1	10	2	6 7E+01	4 0E+01	4 9E+04	2 1E+02	SA02-S-IEA	Jul-97	Yes	2 1E+02
2	SUBSURFACE (2-4')	SVOC	Naphthalene	91-20-3	10	3	1 6E+01	3 1E+01	2 3E+04	1 4E+02	SA02-S-IEA	Jul-97	Yes	1 4E+02
2	SUBSURFACE (2-4')	SVOC	Phenol	108-95-2	9	1	1 7E+02	3 2E+01	1 4E+03	1 7E+02	SA04-S-IEA	Jul-97	Yes	1 7E+02
2	SUBSURFACE (2-4')	P/PCB	Aroclor-1248	12672-29-6	10	6	9 4E+00	5 3E+01	1 3E+02	3 3E+02	SA04-S-IEA	Jul-97	Yes	1 3E+02
2	SUBSURFACE (2-4')	P/PCB	Aroclor-1254	11097-69-1	10	1	4 7E+00	9 0E+00	1 4E+01	4 7E+00	T12-S-IEA	Jul-97	Yes	4 7E+00
2	SUBSURFACE (2-4')	P/PCB	Aroclor-1260	11096-82-5	10	3	2 0E+01	1 8E+01	3 2E+01	6 2E+01	SA02-S-IEA	Jul-97	Yes	3 2E+01
2	SUBSURFACE (2-4')	INORG	Aluminum	7429-90-5	9	9	2 7E+03	4 5E+03	5 9E+03	8 2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Antimony	7440-36-0	9	4	1 3E+01	3 2E+01	7 5E+01	1 6E+02	D01-S-IEA	Jul-97	Yes	7 5E+01
2	SUBSURFACE (2-4')	INORG	Arsenic	7440-38-2	9	9	2 3E+00	4 5E+00	6 5E+00	7 8E+00	D02-S-IEA	Jul-97	Yes	6 5E+00
2	SUBSURFACE (2-4')	INORG	Barium	7440-39-3	9	9	3 1E+01	7 9E+02	5 7E+04	2 7E+03	D01-S-IEA	Jul-97	Yes	2 7E+03
2	SUBSURFACE (2-4')	INORG	Cadmium	7440-43-9	9	9	8 3E-01	2 3E+01	5 2E+01	1 1E+02	D01-S-IEA	Jul-97	Yes	5 2E+01
2	SUBSURFACE (2-4')	INORG	Calcium	7440-70-2	9	9	4 3E+03	1 3E+04	1 9E+04	2 6E+04	SA01-S-IEA-02	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Chromium (total)	7440-47-3	9	9	1 0E+01	4 3E+02	8 3E+02	1 5E+03	D01-S-IEA	Jul-97	Yes	8 3E+02
2	SUBSURFACE (2-4')	INORG	Cobalt	7440-48-4	9	4	5 6E+00	1 0E+01	1 9E+01	3 3E+01	D01-S-IEA	Jul-97	Yes	1 9E+01
2	SUBSURFACE (2-4')	INORG	Copper	7440-50-8	9	9	3 6E+01	5 5E+02	9 3E+02	1 3E+03	SA02-S-IEA	Jul-97	Yes	9 3E+02
2	SUBSURFACE (2-4')	INORG	Iron	7439-89-6	9	9	7 8E+02	1 0E+04	1 5E+04	1 9E+04	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Lead	7439-92-1	9	9	6 0E+01	2 6E+03	5 9E+05	1 0E+04	D01-S-IEA	Jul-97	Yes	1 0E+04
2	SUBSURFACE (2-4')	INORG	Magnesium	7439-95-4	9	9	1 3E+03	4 7E+03	7 2E+03	1 2E+04	SA01-S-IEA-02	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Manganese	7439-96-5	9	9	1 0E+02	2 1E+02	3 3E+02	4 0E+02	D01-S-IEA	Jul-97	Yes	3 3E+02
2	SUBSURFACE (2-4')	INORG	Mercury	7439-97-6	9	8	3 2E-01	1 6E+00	4 2E+01	7 9E+00	SA02-S-IEA	Jul-97	Yes	7 9E+00
2	SUBSURFACE (2-4')	INORG	Nickel	7440-02-0	9	9	4 6E+00	2 0E+01	5 4E+01	5 3E+01	D01-S-IEA	Jul-97	Yes	5 3E+01
2	SUBSURFACE (2-4')	INORG	Potassium	7440-09-7	9	3	6 6E+02	5 5E+02	9 1E+02	1 6E+03	SA01-S-IEA-02	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Selenium	7782-49-2	9	3	6 4E-01	2 0E+00	4 3E+00	8 3E+00	D01-S-IEA	Jul-97	Yes	4 3E+00
2	SUBSURFACE (2-4')	INORG	Silver	7440-22-4	9	2	3 8E+00	5 9E+00	1 5E+01	3 5E+01	D01-S-IEA	Jul-97	Yes	1 5E+01
2	SUBSURFACE (2-4')	INORG	Sodium	7440-23-5	9	2	7 4E+02	4 9E+02	7 4E+02	1 2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-4')	INORG	Vanadium	7440-62-2	9	8	6 7E+00	8 0E+00	1 0E+01	1 2E+01	SA04-S-IEA	Jul-97	Yes	1 0E+01
2	SUBSURFACE (2-4')	INORG	Zinc	7440-66-6	9	9	1 0E+02	2 5E+03	5 2E+03	8 3E+03	D01-S-IEA	Jul-97	Yes	5 2E+03
2	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	28	8	2 7E-02	8 2E+00	1 4E+01	6 5E+01	ACS-SB38-10	Jun-90	Yes	1 4E+01
2	SUBSURFACE (2-10')	VOC	1,1,2,2-Tetrachloroethane	79-34-5	28	2	1 3E-02	4 3E+00	6 8E+00	3 6E-02	SB82-04 5-FT	Jun-93	Yes	3 6E-02
2	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	28	1	6 6E+01	6 4E+00	1 1E+01	6 6E+01	ACS-SB39-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	15	3	3 6E-02	7 9E+00	1 2E+01	1 3E+01	ACS-SB39-10	Jun-90	Yes	1 2E+01
2	SUBSURFACE (2-10')	VOC	1,1 Dichloroethene	75-35-4	28	1	8 6E-03	4 3E+00	6 8E+00	8 6E-03	SB81-04-FT	Jun-93	No (f)	

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
2	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	28	3	1.1E-01	4.2E+00	6.6E+00	1.8E+01	ACS-SB28-08	May-90	Yes	6.6E+00
2	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	8	3	5.0E-03	8.6E+00	1.7E+01	3.4E+01	ACS-SB28-08	May-90	Yes	1.7E+01
2	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	28	5	1.0E-03	4.2E+00	6.7E+00	2.7E+00	ACS-SB39-10	Jun-90	Yes	2.7E+00
2	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	28	9	1.4E+00	2.2E+02	5.0E+02	4.5E+03	ACS-SB04-05	Aug-89	Yes	5.0E+02
2	SUBSURFACE (2-10')	VOC	2-Hexanone	591-78-6	15	2	1.6E+01	2.0E+01	3.2E+01	9.1E+01	SA04-S-IEA	Jul-97	Yes	3.2E+01
2	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	28	9	1.4E+00	4.9E+01	8.2E+01	3.6E+02	SA02-S-IEA	Jul-97	Yes	8.2E+01
2	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	28	6	1.7E+00	8.3E+01	1.6E+02	1.2E+03	SA04-S-IEA	Jul-97	Yes	1.6E+02
2	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	28	13	1.0E-02	8.8E+00	1.5E+01	9.6E+01	ACS-SB39-10	Jun-90	Yes	1.5E+01
2	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	28	1	2.5E+01	4.9E+00	7.8E+00	2.5E+01	ACS-SB39-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	28	8	7.0E-03	1.0E+01	1.9E+01	1.4E+02	ACS-SB39-10	Jun-90	Yes	1.9E+01
2	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	20	5	1.8E-02	3.1E+00	5.8E+00	2.3E-01	SB82-06 5-FT	Jun-93	Yes	2.3E-01
2	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	28	18	4.0E-03	9.4E+01	1.5E+02	6.8E+02	SA02-S-IEA	Jul-97	Yes	1.5E+02
2	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	13	9	1.4E-02	4.1E-01	1.1E+00	4.9E+00	SB78-10-FT	Jun-93	Yes	1.1E+00
2	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	28	12	2.0E-02	6.0E+00	1.5E+01	6.8E+00	ACS-SB40-10	Jun-90	Yes	6.8E+00
2	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	13	6	1.2E-02	2.0E-01	5.4E-01	2.5E+00	SB78-10-FT	Jun-93	Yes	5.4E-01
2	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	28	2	3.0E-02	6.0E+00	9.9E+00	5.2E+01	ACS-SB40-10	Jun-90	Yes	9.9E+00
2	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	28	13	2.2E-02	7.1E+01	1.3E+02	8.8E+02	SA04-S-IEA	Jul-97	Yes	1.3E+02
2	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	15	15	5.2E-02	4.3E+02	6.7E+02	1.3E+03	ACS-SB39-10	Jun-90	Yes	6.7E+02
2	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	28	10	1.2E-02	3.1E+01	5.5E+01	3.5E+02	SA04-S-IEA	Jul-97	Yes	5.5E+01
2	SUBSURFACE (2-10')	VOC	Vinyl Chloride	75-01-4	28	3	9.3E-03	8.4E+00	1.3E+01	1.1E-01	SB82-06 5-FT	Jun-93	Yes	1.1E-01
2	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	15	15	3.0E-03	8.8E+02	1.4E+03	3.6E+03	SA02-S-IEA	Jul-97	Yes	1.4E+03
2	SUBSURFACE (2-10')	SVOC	1,2,4-Trichlorobenzene	120-82-1	26	4	1.8E+00	6.1E+00	9.1E+00	1.0E+01	ACS-SB38-10	Jun-90	Yes	9.1E+00
2	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	13	5	5.3E+00	2.6E+01	5.4E+01	2.1E+02	SA04-S-IEA	Jul-97	Yes	5.4E+01
2	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	26	2	3.6E-01	6.6E+00	9.7E+00	9.1E-01	ACS-SB38-10	Jun-90	Yes	9.1E-01
2	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	13	4	1.1E+01	2.1E+01	3.3E+01	8.8E+01	SA04-S-IEA	Jul-97	Yes	3.3E+01
2	SUBSURFACE (2-10')	SVOC	2,6-Dinitrotoluene	606-20-2	13	1	3.5E+00	3.4E+01	3.2E+02	3.5E+00	ACS-SB38-10	Jun-90	Yes	3.5E+00
2	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	13	7	1.7E-01	8.0E+01	4.8E+03	5.2E+02	ACS-SB39-10	Jun-90	Yes	5.2E+02
2	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	13	5	6.7E+00	2.2E+01	3.8E+01	1.2E+02	SA04-S-IEA	Jul-97	Yes	3.8E+01
2	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	13	5	1.4E+01	3.0E+01	5.3E+01	1.8E+02	SA04-S-IEA	Jul-97	Yes	5.3E+01
2	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	13	4	1.5E-01	2.8E+01	5.8E+02	1.5E+01	ACS-SB39-10	Jun-90	Yes	1.5E+01
2	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	13	2	2.3E-01	1.2E+01	1.7E+01	1.3E+00	ACS-SB38-10	Jun-90	Yes	1.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	13	2	4.7E-01	1.2E+01	1.7E+01	2.7E+00	ACS-SB38-10	Jun-90	Yes	2.7E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	26	2	3.8E-01	6.6E+00	9.8E+00	1.5E+00	ACS-SB38-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	26	2	7.6E-01	6.8E+00	9.9E+00	5.3E+00	ACS-SB38-10	Jun-90	Yes	5.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	26	2	2.3E-01	6.6E+00	9.8E+00	1.5E+00	ACS-SB38-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	26	2	7.6E-01	6.8E+00	9.9E+00	5.3E+00	ACS-SB38-10	Jun-90	Yes	5.3E+00
2	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	13	5	2.3E-01	8.0E+01	1.2E+02	2.4E+02	ACS-SB39-10	Jun-90	Yes	1.2E+02
2	SUBSURFACE (2-10')	SVOC	Benzyl Alcohol	100-51-6	13	2	1.5E+00	1.9E+01	2.7E+01	3.4E+01	ACS-SB39-10	Jun-90	Yes	2.7E+01
2	SUBSURFACE (2-10')	SVOC	bis(2-Chloroethyl) ether	111-44-4	26	3	1.9E+01	1.1E+01	1.9E+01	1.1E+02	ACS-SB39-10	Jun-90	Yes	1.9E+01
2	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	26	14	1.2E+00	1.8E+02	3.4E+02	2.3E+03	ACS-SB39-10	Jun-90	Yes	3.4E+02
2	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	13	5	1.6E-01	7.2E+01	5.1E+03	4.2E+02	ACS-SB39-10	Jun-90	Yes	4.2E+02
2	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	26	3	4.0E-01	6.1E+00	9.2E+00	3.8E+00	ACS-SB39-10	Jun-90	Yes	3.8E+00
2	SUBSURFACE (2-10')	SVOC	Dibenzo(a,h)anthracene	53-70-3	26	1	7.0E-02	6.7E+00	9.8E+00	7.0E-02	ACS-SB42-05 5	Jun-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	13	3	1.7E-01	1.2E+01	1.7E+01	2.5E+00	ACS-SB38-10	Jun-90	Yes	2.5E+00
2	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	13	4	6.8E+00	1.6E+01	2.5E+01	6.4E+01	ACS-SB39-10	Jun-90	Yes	2.5E+01
2	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	13	3	3.8E+00	3.6E+01	9.6E+02	2.6E+02	ACS-SB39-10	Jun-90	Yes	2.6E+02
2	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	26	9	1.1E-01	4.5E+01	7.5E+01	3.9E+02	ACS-SB39-10	Jun-90	Yes	7.5E+01
2	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	13	4	3.7E+00	1.1E+01	1.7E+01	1.3E+01	ACS-SB38-10	Jun-90	Yes	1.3E+01
2	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	13	4	3.9E-01	1.1E+01	1.6E+01	4.1E+00	ACS-SB38-10	Jun-90	Yes	4.1E+00
2	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	13	4	2.9E-01	1.2E+01	1.8E+01	1.8E+01	ACS-SB39-10	Jun-90	Yes	1.8E+01
2	SUBSURFACE (2-10')	SVOC	Hexachlorobenzene	118-74-1	26	1	9.3E-01	6.6E+00	9.8E+00	9.3E-01	ACS-SB38-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Hexachlorobutadiene	87-68-3	26	2	2.0E+01	8.9E+00	1.4E+01	6.0E+01	ACS-SB39-10	Jun-90	Yes	1.4E+01
2	SUBSURFACE (2-10')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	26	2	4.2E-01	6.6E+00	9.8E+00	1.4E+00	ACS-SB38-10	Jun-90	Yes	1.4E+00
2	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	26	6	1.2E+01	1.1E+02	2.3E+02	1.8E+03	ACS-SB39-10	Jun-90	Yes	2.3E+02
2	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	26	9	2.8E-01	6.0E+01	1.0E+02	4.9E+02	ACS-SB39-10	Jun-90	Yes	1.0E+02
2	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	26	1	6.9E+00	6.3E+00	9.4E+00	6.9E+00	ACS-SB28-08	May-90	No (f)	
2	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	26	3	1.2E+00	3.1E+01	4.6E+01	6.3E+01	ACS-SB39-10	Jun-90	Yes	4.6E+01
2	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	13	5	7.6E-01	1.2E+01	1.8E+01	2.1E+01	ACS-SB39-10	Jun-90	Yes	1.8E+01
2	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	13	5	1.2E+01	3.1E+01	5.5E+01	1.7E+02	SA04-S-IEA	Jul-97	Yes	5.5E+01
2	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	13	3	7.1E-01	1.1E+01	1.7E+01	8.0E+00	ACS-SB38 10	Jun-90	Yes	8.0E+00
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDD	72-54-8	15	1	3.3E+00	9.6E-01	1.5E+00	3.3E+00	ACS-SB36-10	Jun-90	Yes	1.5E+00
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDE	72-55-9	15	1	8.8E-01	8.0E-01	1.2E+00	8.8E-01	ACS-SB36-10	Jun-90	Yes	8.8E-01
2	SUBSURFACE (2-10')	P/PCB	4,4'-DDT	50-29-3	15	1	1.7E+00	8.3E-01	1.2E+00	1.7E+00	ACS-SB38-10	Jun-90	Yes	1.2E+00
2	SUBSURFACE (2-10')	P/PCB	Aldrin	309-00-2	15	1	7.7E+00	7.9E-01	6.0E+00	7.7E+00	ACS-SB39-10	Jun-90	Yes	6.0E+00

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
2	SUBSURFACE (2-10')	P/PCB	alpha-BHC	319-84-6	15	1	3.3E-01	3.9E-01	5.9E-01	3.3E-01	ACS-SB36-10	Jun-90	Yes	3.3E-01
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	28	1	8.7E+00	1.1E+01	2.6E+01	8.7E+00	ACS-SB40-10	Jun-90	No (f)	
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672-29-6	28	4	9.4E+00	2.5E+01	5.0E+01	3.3E+02	SA04-S-IEA	Jul-97	Yes	5.0E+01
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	28	11	2.2E-02	2.4E+01	5.5E+01	3.6E+01	ACS-SB37-10	Jun-90	Yes	3.6E+01
2	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82-5	28	13	3.6E-02	1.4E+02	3.5E+02	3.4E+03	SB78-07-FT	Jun-93	Yes	3.5E+02
2	SUBSURFACE (2-10')	P/PCB	beta-BHC	319-85-7	15	1	8.0E-01	4.2E-01	6.3E-01	8.0E-01	ACS-SB36-10	Jun-90	Yes	6.3E-01
2	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	12	12	1.4E+02	4.2E+03	5.3E+03	8.2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	8	3	1.3E+01	2.8E+01	6.5E+01	1.6E+02	D01-S-IEA	Jul-97	Yes	6.5E+01
2	SUBSURFACE (2-10')	INORG	Arsenic	7440-38-2	12	11	2.3E+00	3.8E+00	4.9E+00	7.8E+00	D02-S-IEA	Jul-97	Yes	4.9E+00
2	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	12	7	3.1E+01	5.1E+02	9.7E+02	2.7E+03	D01-S-IEA	Jul-97	Yes	9.7E+02
2	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	12	4	1.0E-01	2.6E-01	3.1E-01	3.4E-01	ACS-SB42-05 5	Jun-90	Yes	3.1E-01
2	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	11	11	3.0E-01	2.2E+01	8.7E+02	1.1E+02	D01-S-IEA	Jul-97	Yes	1.1E+02
2	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	12	11	4.1E+02	1.3E+04	2.1E+04	5.1E+04	ACS-SB42-05 5	Jun-90	No (e)	
2	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	12	11	1.0E+01	2.8E+02	3.0E+04	1.5E+03	D01-S-IEA	Jul-97	Yes	1.5E+03
2	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	12	3	5.6E+00	8.9E+00	1.4E+01	3.3E+01	D01-S-IEA	Jul-97	Yes	1.4E+01
2	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	12	11	1.4E+01	3.7E+02	1.9E+04	1.3E+03	SA02-S-IEA	Jul-97	Yes	1.3E+03
2	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	12	12	7.8E+02	9.2E+03	1.3E+04	1.9E+04	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	12	12	2.3E+00	1.7E+03	5.2E+05	1.0E+04	D01-S-IEA	Jul-97	Yes	1.0E+04
2	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	12	11	3.9E+02	4.9E+03	8.0E+03	1.9E+04	ACS-SB42-05 5	Jun-90	No (e)	
2	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	12	12	1.3E+01	1.7E+02	2.4E+02	4.0E+02	D01-S-IEA	Jul-97	Yes	2.4E+02
2	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	12	8	1.6E-01	1.1E+00	1.4E+01	7.9E+00	SA02-S-IEA	Jul-97	Yes	7.9E+00
2	SUBSURFACE (2-10')	INORG	Nickel	7440-02-0	12	9	4.6E+00	1.7E+01	2.5E+01	5.3E+01	D01-S-IEA	Jul-97	Yes	2.5E+01
2	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	12	7	3.5E+01	5.7E+02	8.5E+02	1.6E+03	SA01-S-IEA-02	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Selenium	7782-49-2	12	3	6.4E-01	1.4E+00	2.8E+00	8.3E+00	D01-S-IEA	Jul-97	Yes	2.8E+00
2	SUBSURFACE (2-10')	INORG	Silver	7440-22-4	12	2	3.8E+00	4.2E+00	9.8E+00	3.5E+01	D01-S-IEA	Jul-97	Yes	9.8E+00
2	SUBSURFACE (2-10')	INORG	Sodium	7440-23-5	12	2	7.4E+02	3.6E+02	5.3E+02	1.2E+03	D01-S-IEA	Jul-97	No (e)	
2	SUBSURFACE (2-10')	INORG	Thallium	7440-28-0	12	3	7.2E-01	6.4E-01	7.2E-01	1.0E+00	ACS-SB28-08	May-90	Yes	7.2E-01
2	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	12	10	6.7E+00	7.8E+00	9.6E+00	1.2E+01	SA04-S-IEA	Jul-97	Yes	9.6E+00
2	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	12	12	7.8E+00	1.7E+03	3.3E+03	8.3E+03	D01-S-IEA	Jul-97	Yes	3.3E+03
3	SURFACE (0-2')	VOC	1,1,1-Trichloroethane	71-55-6	2	1	9.0E-03	6.1E-02	3.9E-01	9.0E-03	ACS-SA01-03	Jul-89	Yes	9.0E-03
3	SURFACE (0-2')	VOC	1,1-Dichloroethane	75-34-3	2	1	8.6E-02	9.9E-02	1.8E-01	8.6E-02	ACS-SA01-03	Jul-89	Yes	8.6E-02
3	SURFACE (0-2')	VOC	1,2-Dichloroethane	107-06-2	2	0		6.4E-02	3.7E-01				Yes (g)	3.7E-01
3	SURFACE (0-2')	VOC	1,2-Dichloroethene (total)	540-59-0	2	2	2.1E-02	3.8E+00	2.8E+01	7.6E+00	ACS-SA02-03	Jul-89	Yes	7.6E+00
3	SURFACE (0-2')	VOC	1,2-Dichloropropane	78-87-5	2	1	1.9E-02	6.6E-02	3.6E-01	1.9E-02	ACS-SA01-03	Jul-89	Yes	1.9E-02
3	SURFACE (0-2')	VOC	2-Butanone	78-93-3	1	0							Yes (g)	9.2E+03
3	SURFACE (0-2')	VOC	2-Hexanone	591-78-6	2	0		1.3E-01	7.4E-01				Yes (g)	3.9E-01
3	SURFACE (0-2')	VOC	4-Methyl-2-pentanone	108-10-1	2	0		1.3E-01	7.4E-01				Yes (g)	7.4E-01
3	SURFACE (0-2')	VOC	Acetone	67-64-1	2	1	1.3E-01	1.8E-01	4.8E-01	1.3E-01	ACS-SA01-03	Jul-89	Yes	1.3E-01
3	SURFACE (0-2')	VOC	Benzene	71-43-2	2	2	3.2E-01	1.8E+00	1.1E+01	3.2E+00	ACS-SA02-03	Jul-89	Yes	3.2E+00
3	SURFACE (0-2')	VOC	Chlorobenzene	108-90-7	2	1	6.2E+00	3.1E+00	2.3E+01	6.2E+00	ACS-SA02-03	Jul-89	Yes	6.2E+00
3	SURFACE (0-2')	VOC	Chloroform	67-66-3	2	1	1.0E-02	6.1E-02	3.8E-01	1.0E-02	ACS-SA01-03	Jul-89	Yes	1.0E-02
3	SURFACE (0-2')	VOC	Ethyl Benzene	100-41-4	2	2	7.0E+00	7.4E+01	4.9E+02	1.4E+02	ACS-SA02-03	Jul-89	Yes	1.4E+02
3	SURFACE (0-2')	VOC	Methylene Chloride	75-09-2	2	1	2.0E-01	8.3E-01	4.8E+00	2.0E-01	ACS-SA01-03	Jul-89	Yes	2.0E-01
3	SURFACE (0-2')	VOC	Styrene	100-42-5	2	1	2.3E+01	1.2E+01	8.4E+01	2.3E+01	ACS-SA02-03	Jul-89	Yes	2.3E+01
3	SURFACE (0-2')	VOC	Tetrachloroethene	127-18-4	2	2	1.3E-01	1.3E+02	9.1E+02	2.5E+02	ACS-SA02-03	Jul-89	Yes	2.5E+02
3	SURFACE (0-2')	VOC	Toluene	108-88-3	2	2	2.9E+01	3.3E+02	2.3E+03	6.4E+02	ACS-SA02-03	Jul-89	Yes	6.4E+02
3	SURFACE (0-2')	VOC	Trichloroethene	79-01-6	2	2	1.1E-02	5.0E+01	3.7E+02	1.0E+02	ACS-SA02-03	Jul-89	Yes	1.0E+02
3	SURFACE (0-2')	VOC	Xylenes (total)	1330-20-7	2	2	4.4E+01	3.1E+02	2.0E+03	5.7E+02	ACS-SA02-03	Jul-89	Yes	5.7E+02
3	SURFACE (0-2')	SVOC	1,2-Dichlorobenzene	95-50-1	2	1	5.9E-01	4.6E-01	1.3E+00	5.9E-01	ACS-SA02-03	Jul-89	Yes	5.9E-01
3	SURFACE (0-2')	SVOC	1,4-Dichlorobenzene	106-46-7	2	0		1.2E+00	6.4E+00				Yes (g)	9.3E-02
3	SURFACE (0-2')	SVOC	2,4,5-Trichlorophenol	95-95-4	2	1	1.7E-01	4.9E+00	3.5E+01	1.7E-01	ACS-SA01-03	Jul-89	Yes	1.7E-01
3	SURFACE (0-2')	SVOC	2,4-Dimethylphenol	105-67-9	2	2	1.3E+00	3.1E+00	1.4E+01	4.9E+00	ACS-SA02-03	Jul-89	Yes	4.9E+00
3	SURFACE (0-2')	SVOC	2,4-Dinitrotoluene	121-14-2	2	0		1.2E+00	6.4E+00				Yes (g)	8.4E-01
3	SURFACE (0-2')	SVOC	2-Methylnaphthalene	91-57-6	2	2	5.5E+00	1.1E+01	4.8E+01	1.7E+01	ACS-SA02-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	SVOC	2-Methylphenol	95-48-7	2	1	4.7E+00	2.5E+00	1.6E+01	4.7E+00	ACS-SA02-03	Jul-89	Yes	4.7E+00
3	SURFACE (0-2')	SVOC	4-Methylphenol	106-44-5	2	1	4.6E+00	2.5E+00	1.6E+01	4.6E+00	ACS-SA02-03	Jul-89	Yes	4.6E+00
3	SURFACE (0-2')	SVOC	4-Nitrophenol	100-02-7	2	0		1.2E+00	6.4E+00				Yes (g)	6.6E-02
3	SURFACE (0-2')	SVOC	Acenaphthene	83-32-9	2	1	3.6E-01	5.0E+00	3.4E+01	3.6E-01	ACS-SA01-03	Jul-89	Yes	3.6E-01
3	SURFACE (0-2')	SVOC	Anthracene	120-12-7	2	1	6.6E-01	1.3E+00	5.5E+00	6.6E-01	ACS-SA01-03	Jul-89	Yes	6.6E-01
3	SURFACE (0-2')	SVOC	Benzo(a)anthracene	56-55-3	2	1	2.4E+00	2.2E+00	3.5E+00	2.4E+00	ACS-SA01-03	Jul-89	Yes	2.4E+00
3	SURFACE (0-2')	SVOC	Benzo(a)pyrene	50-32-8	2	0		1.2E+00	6.4E+00				Yes (g)	1.4E+00
3	SURFACE (0-2')	SVOC	Benzo(b)fluoranthene	205-99-2	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01
3	SURFACE (0-2')	SVOC	Benzo(g,h,i)perylene	191-24-2	2	0		1.2E+00	6.4E+00				Yes (g)	1.1E+00
3	SURFACE (0-2')	SVOC	Benzo(k)fluoranthene	207-08-9	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SURFACE (0-2')	SVOC	Benzoic Acid	65-85-0	2	0		5.6E+00	3.1E+01				Yes (g)	3.1E+01
3	SURFACE (0-2')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2	2	2.9E+02	3.6E+02	8.0E+02	4.3E+02	ACS-SA01-03	Jul-89	Yes	4.3E+02
3	SURFACE (0-2')	SVOC	Butylbenzylphthalate	85-68-7	2	2	3.2E+00	1.0E+01	5.4E+01	1.7E+01	ACS-SA02-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	SVOC	Chrysene	218-01-9	2	1	1.3E+00	1.6E+00	3.8E+00	1.3E+00	ACS-SA01-03	Jul-89	Yes	1.3E+00
3	SURFACE (0-2')	SVOC	Dibenzo(a,h)anthracene	53-70-3	2	0		1.2E+00	6.4E+00				Yes (g)	2.7E-01
3	SURFACE (0-2')	SVOC	Dibenzofuran	132-64-9	2	1	4.3E-01	1.2E+00	6.1E+00	4.3E-01	ACS-SA01-03	Jul-89	Yes	4.3E-01
3	SURFACE (0-2')	SVOC	Diethylphthalate	84-66-2	2	1	1.5E-01	1.1E+00	6.8E+00	1.5E-01	ACS-SA01-03	Jul-89	Yes	1.5E-01
3	SURFACE (0-2')	SVOC	Dimethylphthalate	131-11-3	2	1	1.4E+00	8.7E-01	4.2E+00	1.4E+00	ACS-SA02-03	Jul-89	Yes	1.4E+00
3	SURFACE (0-2')	SVOC	Di-n-butylphthalate	84-74-2	2	2	1.1E+01	1.3E+01	2.6E+01	1.5E+01	ACS-SA02-03	Jul-89	Yes	1.5E+01
3	SURFACE (0-2')	SVOC	Di-n-octylphthalate	117-84-0	2	1	1.3E+00	8.2E-01	3.9E+00	1.3E+00	ACS-SA02-03	Jul-89	Yes	1.3E+00
3	SURFACE (0-2')	SVOC	Fluoranthene	206-44-0	2	1	3.4E+00	2.7E+00	7.2E+00	3.4E+00	ACS-SA01-03	Jul-89	Yes	3.4E+00
3	SURFACE (0-2')	SVOC	Fluorene	86-73-7	2	2	4.7E-01	5.4E-01	9.8E-01	6.1E-01	ACS-SA01-03	Jul-89	Yes	6.1E-01
3	SURFACE (0-2')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2	0		1.2E+00	6.4E+00				Yes (g)	8.2E-01
3	SURFACE (0-2')	SVOC	Isophorone	78-59-1	2	2	8.4E+00	2.4E+01	1.2E+02	4.0E+01	ACS-SA02-03	Jul-89	Yes	4.0E+01
3	SURFACE (0-2')	SVOC	Naphthalene	91-20-3	2	2	9.9E+00	1.9E+01	7.6E+01	2.8E+01	ACS-SA02-03	Jul-89	Yes	2.8E+01
3	SURFACE (0-2')	SVOC	N-Nitrosodiphenylamine	86-30-6	2	1	4.3E+00	2.3E+00	1.5E+01	4.3E+00	ACS-SA02-03	Jul-89	Yes	4.3E+00
3	SURFACE (0-2')	SVOC	Pentachlorophenol	87-86-5	2	1	1.5E+00	5.6E+00	3.1E+01	1.5E+00	ACS-SA01-03	Jul-89	Yes	1.5E+00
3	SURFACE (0-2')	SVOC	Phenanthrene	85-01-8	2	2	4.5E-01	1.8E+00	1.0E+01	3.1E+00	ACS-SA01-03	Jul-89	Yes	3.1E+00
3	SURFACE (0-2')	SVOC	Phenol	108-95-2	2	2	7.0E-01	3.6E+00	2.2E+01	6.4E+00	ACS-SA02-03	Jul-89	Yes	6.4E+00
3	SURFACE (0-2')	SVOC	Pyrene	129-00-0	2	1	2.3E+00	2.1E+00	3.2E+00	2.3E+00	ACS-SA01-03	Jul-89	Yes	2.3E+00
3	SURFACE (0-2')	P/PCB	4,4'-DDD	72-54-8	14	3	2.5E-02	2.1E-01	3.3E-01	1.5E-01	ACS-SB46-01	Jun-90	Yes	1.5E-01
3	SURFACE (0-2')	P/PCB	Aroclor-1242	53469-21-9	14	3	1.5E+01	6.4E+00	1.2E+01	4.2E+01	ACS-SA01-03	Jul-89	Yes	1.2E+01
3	SURFACE (0-2')	P/PCB	Aroclor-1248	12672-29-6	14	3	5.1E+00	3.6E+00	7.0E+00	2.7E+01	ACS-SB48-01	Jun-90	Yes	7.0E+00
3	SURFACE (0-2')	P/PCB	Aroclor-1254	11097-69-1	14	5	2.0E+00	5.6E+00	9.2E+00	2.2E+01	ACS-SB48-01	Jun-90	Yes	9.2E+00
3	SURFACE (0-2')	P/PCB	Aroclor-1260	11096-82-5	14	0		2.0E+00	3.2E+00				Yes (g)	3.2E+00
3	SURFACE (0-2')	P/PCB	Heptachlor	76-44-8	14	1	8.8E-02	1.1E-01	1.7E-01	8.8E-02	ACS-SB46-01	Jun-90	Yes	8.8E-02
3	SURFACE (0-2')	P/PCB	Heptachlor epoxide	1024-57-3	14	1	4.2E-02	1.1E-01	1.6E-01	4.2E-02	ACS-SB46-01	Jun-90	Yes	4.2E-02
3	SURFACE (0-2')	INORG	Aluminum	7429-90-5	2	2	4.7E+03	7.1E+03	2.2E+04	9.5E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Antimony	7440-36-0	2	2	3.7E+01	5.2E+01	1.5E+02	6.8E+01	ACS-SA02-03	Jul-89	Yes	6.8E+01
3	SURFACE (0-2')	INORG	Arsenic	7440-38-2	2	2	4.4E+00	1.8E+01	1.0E+02	3.1E+01	ACS-SA02-03	Jul-89	Yes	3.1E+01
3	SURFACE (0-2')	INORG	Barium	7440-39-3	2	2	1.8E+03	2.1E+03	4.3E+03	2.5E+03	ACS-SA01-03	Jul-89	Yes	2.5E+03
3	SURFACE (0-2')	INORG	Beryllium	7440-41-7	2	2	1.6E-01	8.3E-01	5.1E+00	1.5E+00	ACS-SA01-03	Jul-89	Yes	1.5E+00
3	SURFACE (0-2')	INORG	Cadmium	7440-43-9	2	2	1.2E+02	1.4E+02	2.7E+02	1.6E+02	ACS-SA02-03	Jul-89	Yes	1.6E+02
3	SURFACE (0-2')	INORG	Calcium	7440-70-2	2	2	1.9E+04	8.8E+04	5.2E+05	1.6E+05	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Chromium (total)	7440-47-3	2	2	8.6E+02	1.1E+03	2.5E+03	1.3E+03	ACS-SA02-03	Jul-89	Yes	1.3E+03
3	SURFACE (0-2')	INORG	Cobalt	7440-48-4	2	2	4.2E+01	5.0E+01	9.6E+01	5.7E+01	ACS-SA01-03	Jul-89	Yes	5.7E+01
3	SURFACE (0-2')	INORG	Copper	7440-50-8	2	2	3.8E+02	7.8E+02	3.3E+03	1.2E+03	ACS-SA01-03	Jul-89	Yes	1.2E+03
3	SURFACE (0-2')	INORG	Cyanide (total)	57-12-5	2	2	2.0E+01	3.4E+01	1.2E+02	4.8E+01	ACS-SA02-03	Jul-89	Yes	4.8E+01
3	SURFACE (0-2')	INORG	Iron	7439-89-6	2	2	9.2E+03	1.1E+04	2.2E+04	1.3E+04	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Lead	7439-92-1	2	2	5.8E+03	8.3E+03	2.4E+04	1.1E+04	ACS-SA01-03	Jul-89	Yes	1.1E+04
3	SURFACE (0-2')	INORG	Magnesium	7439-95-4	2	2	2.3E+03	2.0E+04	1.3E+05	3.7E+04	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Manganese	7439-96-5	2	2	1.4E+02	8.4E+02	5.3E+03	1.5E+03	ACS-SA01-03	Jul-89	Yes	1.5E+03
3	SURFACE (0-2')	INORG	Mercury	7439-97-6	2	2	9.2E+00	9.4E+00	1.0E+01	9.5E+00	ACS-SA02-03	Jul-89	Yes	9.5E+00
3	SURFACE (0-2')	INORG	Nickel	7440-02-0	2	2	2.3E+01	3.8E+01	1.3E+02	5.3E+01	ACS-SA01-03	Jul-89	Yes	5.3E+01
3	SURFACE (0-2')	INORG	Potassium	7440-09-7	2	2	3.8E+02	9.0E+02	4.2E+03	1.4E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Selenium	7782-49-2	2	2	8.8E+00	1.3E+01	4.0E+01	1.7E+01	ACS-SA01-03	Jul-89	Yes	1.7E+01
3	SURFACE (0-2')	INORG	Silver	7440-22-4	2	0		6.9E+00	8.0E+00				Yes (g)	8.0E+00
3	SURFACE (0-2')	INORG	Sodium	7440-23-5	2	2	4.6E+02	8.3E+02	3.1E+03	1.2E+03	ACS-SA01-03	Jul-89	No (e)	
3	SURFACE (0-2')	INORG	Thallium	7440-28-0	2	0		6.0E-01	6.0E-01				Yes (g)	6.0E-01
3	SURFACE (0-2')	INORG	Vanadium	7440-62-2	2	2	1.2E+01	1.9E+01	6.4E+01	2.6E+01	ACS-SA02-03	Jul-89	Yes	2.6E+01
3	SURFACE (0-2')	INORG	Zinc	7440-66-6	2	2	3.6E+03	9.4E+03	4.6E+04	1.5E+04	ACS-SA02-03	Jul-89	Yes	1.5E+04
3	SUBSURFACE (2-4')	VOC	1,1,1-Trichloroethane	71-55-6	6	0		4.4E+01	1.0E+02				Yes (g)	9.0E-03
3	SUBSURFACE (2-4')	VOC	1,1-Dichloroethane	75-34-3	5	1	1.5E-01	5.2E+01	1.3E+02	1.5E-01	ACS-SB01-03	Aug-89	Yes	1.5E-01
3	SUBSURFACE (2-4')	VOC	1,2-Dichloroethene (total)	540-59-0	2	0		9.3E+01	6.8E+02				Yes (g)	7.6E+00
3	SUBSURFACE (2-4')	VOC	1,2-Dichloropropane	78-87-5	6	0		4.4E+01	1.0E+02				Yes (g)	1.9E-02
3	SUBSURFACE (2-4')	VOC	2-Butanone	78-93-3	6	1	2.4E+02	1.1E+02	2.4E+02	2.4E+02	SP02-S-IEA	Jul-97	Yes	2.4E+02
3	SUBSURFACE (2-4')	VOC	4-Methyl-2-pentanone	108-10-1	6	3	2.7E+02	2.0E+02	3.8E+02	5.0E+02	SP02-S-IEA	Jul-97	Yes	3.8E+02
3	SUBSURFACE (2-4')	VOC	Acetone	67-64-1	6	1	9.7E-01	1.9E+02	3.6E+02	9.7E-01	ACS-SB01-03	Aug-89	Yes	9.7E-01
3	SUBSURFACE (2-4')	VOC	Benzene	71-43-2	6	0		4.4E+01	1.0E+02				Yes (g)	3.2E+00
3	SUBSURFACE (2-4')	VOC	Chlorobenzene	108-90-7	6	0		4.4E+01	1.0E+02				Yes (g)	6.2E+00
3	SUBSURFACE (2-4')	VOC	Chloroform	67-66-3	6	0		4.4E+01	1.0E+02				Yes (g)	1.0E-02
3	SUBSURFACE (2-4')	VOC	Ethyl Benzene	100-41-4	6	3	7.1E+02	9.7E+02	2.3E+03	4.3E+03	ACS-TP01-03.5	Aug-89	Yes	2.3E+03
3	SUBSURFACE (2-4')	VOC	Methylene Chloride	75-09-2	6	1	2.3E-02	5.5E+01	1.2E+02	2.3E-02	SB86-03-FT	Jun-93	Yes	2.3E-02
3	SUBSURFACE (2-4')	VOC	ortho-xylene	95-47-6	1	1	2.3E-02			2.3E-02	SB86-03-FT	Jun-93	Yes	2.3E-02

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
3	SUBSURFACE (2-4')	VOC	Styrene	100-42-5	6	0		4 4E+01	1 0E+02				Yes (g)	2 3E+01
3	SUBSURFACE (2-4')	VOC	Tetrachloroethene	127-18-4	6	4	2 4E-01	2 2E+02	4 7E+02	7 9E+02	ACS-TP01-03 5	Aug-89	Yes	4 7E+02
3	SUBSURFACE (2-4')	VOC	Toluene	108-88-3	5	4	2 7E+00	4 3E+03	1 2E+04	1 9E+04	ACS-TP01-03 5	Aug-89	Yes	1 2E+04
3	SUBSURFACE (2-4')	VOC	Trichloroethene	79-01-6	6	1	1 7E+02	4 1E+01	9 5E+01	1 7E+02	ACS-TP01-03 5	Aug-89	Yes	9 5E+01
3	SUBSURFACE (2-4')	VOC	Xylenes (total)	1330-20-7	5	5	5 9E+00	6 7E+03	1 6E+04	2 3E+04	ACS-TP01-03 5	Aug-89	Yes	1 6E+04
3	SUBSURFACE (2-4')	SVOC	1,2-Dichlorobenzene	95-50-1	5	1	2 0E-01	8 6E+00	1 7E+01	2 0E-01	ACS-SB01-03	Aug-89	Yes	2 0E-01
3	SUBSURFACE (2-4')	SVOC	2,4,5-Trichlorophenol	95-95-4	5	0		2 3E+01	2 1E+07				Yes (g)	1 7E-01
3	SUBSURFACE (2-4')	SVOC	2,4-Dimethylphenol	105-67-9	5	0		8 6E+00	1 7E+01				Yes (g)	4 9E+00
3	SUBSURFACE (2-4')	SVOC	2-Methylnaphthalene	91-57-6	5	3	4 6E-01	2 0E+01	4 3E+01	5 6E+01	ACS-TP01-03 5	Aug-89	Yes	4 3E+01
3	SUBSURFACE (2-4')	SVOC	2-Methylphenol	95-48-7	5	0		8 6E+00	1 7E+01				Yes (g)	4 7E+00
3	SUBSURFACE (2-4')	SVOC	4-Methylphenol	106-44-5	5	1	2 3E-01	8 6E+00	1 7E+01	2 3E-01	ACS-SB01-03	Aug-89	Yes	2 3E-01
3	SUBSURFACE (2-4')	SVOC	Acenaphthene	83-32-9	5	0		2 3E+01	2 1E+07				Yes (g)	3 6E-01
3	SUBSURFACE (2-4')	SVOC	Anthracene	120-12-7	5	0		8 6E+00	1 7E+01				Yes (g)	6 6E-01
3	SUBSURFACE (2-4')	SVOC	Benzo(a)anthracene	56-55-3	5	1	8 5E-01	8 7E+00	1 7E+01	8 5E-01	ACS-SB01-03	Aug-89	Yes	8 5E-01
3	SUBSURFACE (2-4')	SVOC	Benzo(a)pyrene	50-32-8	6	1	1 4E+00	7 6E+00	1 4E+01	1 4E+00	ACS-SB01-03	Aug-89	Yes	1 4E+00
3	SUBSURFACE (2-4')	SVOC	Benzo(b)fluoranthene	205-99-2	6	1	3 9E+00	8 0E+00	1 4E+01	3 9E+00	ACS-SB01-03	Aug-89	Yes	3 9E+00
3	SUBSURFACE (2-4')	SVOC	Benzo(g,h,i)perylene	191-24-2	6	1	1 1E+00	7 6E+00	1 4E+01	1 1E+00	ACS-SB01-03	Aug-89	Yes	1 1E+00
3	SUBSURFACE (2-4')	SVOC	Benzo(k)fluoranthene	207-08-9	6	1	3 9E+00	8 0E+00	1 4E+01	3 9E+00	ACS-SB01-03	Aug-89	Yes	3 9E+00
3	SUBSURFACE (2-4')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6	5	6 0E+01	1 8E+02	3 4E+02	5 4E+02	ACS-TP01-03 5	Aug-89	Yes	3 4E+02
3	SUBSURFACE (2-4')	SVOC	Butylbenzylphthalate	85-68-7	5	2	4 8E+01	2 2E+01	4 6E+01	5 1E+01	ACS-TP01-03 5	Aug-89	Yes	4 6E+01
3	SUBSURFACE (2-4')	SVOC	Chrysene	218-01-9	6	1	1 3E+00	7 6E+00	1 4E+01	1 3E+00	ACS-SB01-03	Aug-89	Yes	1 3E+00
3	SUBSURFACE (2-4')	SVOC	Dibenzo(a,h)anthracene	53-70-3	6	1	2 7E-01	7 4E+00	1 4E+01	2 7E-01	ACS-SB01-03	Aug-89	Yes	2 7E-01
3	SUBSURFACE (2-4')	SVOC	Dibenzofuran	132-64-9	5	1	3 6E-01	8 6E+00	1 7E+01	3 6E-01	ACS-SB01-03	Aug-89	Yes	3 6E-01
3	SUBSURFACE (2-4')	SVOC	Diethylphthalate	84-66-2	5	1	5 0E+00	5 9E+00	1 2E+01	5 0E+00	ACS-TP01-03 5	Aug-89	Yes	5 0E+00
3	SUBSURFACE (2-4')	SVOC	Dimethylphthalate	131-11-3	5	0		8 6E+00	1 7E+01				Yes (g)	1 4E+00
3	SUBSURFACE (2-4')	SVOC	Di-n-butylphthalate	84-74-2	6	3	2 4E+01	3 5E+01	7 0E+01	9 4E+01	ACS-TP01-03 5	Aug-89	Yes	7 0E+01
3	SUBSURFACE (2-4')	SVOC	Di-n-octylphthalate	117-84-0	5	2	8 1E+00	1 4E+01	2 8E+01	3 8E+01	ACS-SB01-03	Aug-89	Yes	2 8E+01
3	SUBSURFACE (2-4')	SVOC	Fluoranthene	206-44-0	5	1	7 6E-01	8 7E+00	1 7E+01	7 6E-01	ACS-SB01-03	Aug-89	Yes	7 6E-01
3	SUBSURFACE (2-4')	SVOC	Fluorene	86-73-7	5	1	6 2E-01	8 7E+00	1 7E+01	6 2E-01	ACS-SB01-03	Aug-89	Yes	6 2E-01
3	SUBSURFACE (2-4')	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	6	1	8 2E-01	7 5E+00	1 4E+01	8 2E-01	ACS-SB01-03	Aug-89	Yes	8 2E-01
3	SUBSURFACE (2-4')	SVOC	Isophorone	78-59-1	6	3	8 4E-01	5 0E+01	1 2E+08	1 9E+02	SP01-S-IEA	Jul-97	Yes	1 9E+02
3	SUBSURFACE (2-4')	SVOC	Naphthalene	91-20-3	6	3	6 8E-01	3 0E+01	6 6E+01	9 7E+01	ACS-TP01-03 5	Aug-89	Yes	6 6E+01
3	SUBSURFACE (2-4')	SVOC	N-Nitrosodiphenylamine	86-30-6	6	1	1 9E+00	7 7E+00	1 4E+01	1 9E+00	ACS-SB01-03	Aug-89	Yes	1 9E+00
3	SUBSURFACE (2-4')	SVOC	Pentachlorophenol	87-86-5	6	0		3 6E+01	6 8E+01				Yes (g)	1 5E+00
3	SUBSURFACE (2-4')	SVOC	Phenanthrene	85-01-8	5	2	7 5E-01	5 8E+00	2 3E+04	4 3E+00	ACS-TP01-03 5	Aug-89	Yes	4 3E+00
3	SUBSURFACE (2-4')	SVOC	Phenol	108-95-2	5	2	1 9E-01	1 0E+01	2 2E+01	2 8E+01	ACS-TP01-03 5	Aug-89	Yes	2 2E+01
3	SUBSURFACE (2-4')	SVOC	Pyrene	129-00-0	5	1	1 3E+00	8 8E+00	1 7E+01	1 3E+00	ACS-SB01-03	Aug-89	Yes	1 3E+00
3	SUBSURFACE (2-4')	P/PCB	4,4'-DDD	72-54-8	5	0		9 2E-01	1 7E+00				Yes (g)	1 5E-01
3	SUBSURFACE (2-4')	P/PCB	Aroclor-1242	53469-21-9	6	1	2 8E+02	5 0E+01	9 7E+09	2 8E+02	ACS-TP01-03 5	Aug-89	Yes	2 8E+02
3	SUBSURFACE (2-4')	P/PCB	Aroclor-1248	12672-29-6	6	4	1 6E-01	3 5E+01	7 5E+01	1 3E+02	KP01-S-IEA	Jul-97	Yes	7 5E+01
3	SUBSURFACE (2-4')	P/PCB	Aroclor-1254	11097-69-1	6	0		7 7E+00	1 4E+01				Yes (g)	1 4E+01
3	SUBSURFACE (2-4')	P/PCB	Aroclor-1260	11096-82-5	6	2	2 9E+01	1 3E+01	2 6E+01	3 6E+01	SP02-S-IEA	Jul-97	Yes	2 6E+01
3	SUBSURFACE (2-4')	P/PCB	Heptachlor	76-44-8	5	0		4 6E-01	8 5E-01				Yes (g)	8 8E-02
3	SUBSURFACE (2-4')	P/PCB	Heptachlor epoxide	1024-57-3	5	0		4 6E-01	8 5E-01				Yes (g)	4 2E-02
3	SUBSURFACE (2-4')	INORG	Aluminum	7429-90-5	5	5	3 1E+03	5 7E+03	9 8E+03	1 3E+04	ACS-TP01-03 5	Aug-89	No (e)	
3	SUBSURFACE (2-4')	INORG	Antimony	7440-36-0	5	4	9 0E+00	2 8E+01	1 0E+03	8 5E+01	ACS-TP01-03 5	Aug-89	Yes	8 5E+01
3	SUBSURFACE (2-4')	INORG	Arsenic	7440-38-2	5	5	2 1E+00	3 5E+00	5 3E+00	4 9E+00	KP01-S-IEA	Jul-97	Yes	4 9E+00
3	SUBSURFACE (2-4')	INORG	Barium	7440-39-3	5	5	1 1E+02	1 4E+03	3 7E+03	5 7E+03	ACS-TP01-03 5	Aug-89	Yes	3 7E+03
3	SUBSURFACE (2-4')	INORG	Beryllium	7440-41-7	5	2	2 0E-01	2 7E-01	3 1E-01	2 6E-01	ACS-TP01-03 5	Aug-89	Yes	2 6E-01
3	SUBSURFACE (2-4')	INORG	Cadmium	7440-43-9	5	5	5 0E+00	4 9E+01	3 9E+03	1 7E+02	ACS-TP01-03 5	Aug-89	Yes	1 7E+02
3	SUBSURFACE (2-4')	INORG	Calcium	7440-70-2	5	5	2 9E+03	1 5E+04	2 3E+04	2 4E+04	KP01-S-IEA	Jul-97	No (e)	
3	SUBSURFACE (2-4')	INORG	Chromium (total)	7440-47-3	5	5	7 0E+01	7 8E+02	2 0E+03	3 1E+03	ACS-TP01-03 5	Aug-89	Yes	2 0E+03
3	SUBSURFACE (2-4')	INORG	Cobalt	7440-48-4	5	4	8 4E+00	3 6E+01	9 6E+01	1 5E+02	ACS-TP01-03 5	Aug-89	Yes	9 6E+01
3	SUBSURFACE (2-4')	INORG	Copper	7440-50-8	5	5	7 5E+01	1 0E+03	2 9E+03	4 5E+03	ACS-TP01-03 5	Aug-89	Yes	2 9E+03
3	SUBSURFACE (2-4')	INORG	Cyanide (total)	57-12-5	2	2	4 6E+00	3 5E+01	2 3E+02	6 6E+01	ACS-TP01-03 5	Aug-89	Yes	6 6E+01
3	SUBSURFACE (2-4')	INORG	Iron	7439-89-6	5	5	5 4E+03	2 0E+04	4 7E+04	7 0E+04	ACS-TP01-03 5	Aug-89	No (e)	
3	SUBSURFACE (2-4')	INORG	Lead	7439-92-1	5	5	4 0E+02	4 0E+03	1 1E+04	1 6E+04	ACS-TP01-03 5	Aug-89	Yes	1 1E+04
3	SUBSURFACE (2-4')	INORG	Magnesium	7439-95-4	5	4	4 9E+03	6 4E+03	1 0E+04	1 1E+04	KP01-S-IEA	Jul-97	No (e)	
3	SUBSURFACE (2-4')	INORG	Manganese	7439-96-5	5	5	1 5E+02	3 6E+02	5 9E+02	7 3E+02	ACS-TP01-03 5	Aug-89	Yes	5 9E+02
3	SUBSURFACE (2-4')	INORG	Mercury	7439-97-6	5	5	2 4E-01	4 5E+00	7 8E+00	9 2E+00	ACS-TP01-03 5	Aug-89	Yes	7 8E+00
3	SUBSURFACE (2-4')	INORG	Nickel	7440-02-0	5	5	1 0E+01	4 9E+01	1 3E+02	2 0E+02	ACS-TP01-03 5	Aug-89	Yes	1 3E+02
3	SUBSURFACE (2-4')	INORG	Potassium	7440-09-7	5	3	3 3E+02	5 4E+02	8 5E+02	1 0E+03	KP01-S-IEA	Jul-97	No (e)	
3	SUBSURFACE (2-4')	INORG	Selenium	7782-49-2	5	5	1 4E+00	2 8E+00	4 7E+00	6 0E+00	ACS-TP01-03 5	Aug 89	Yes	4 7E+00
3	SUBSURFACE (2-4')	INORG	Silver	7440-22-4	5	3	2 5E+00	6 4E+00	1 6E+01	2 5E+01	ACS-TP01-03 5	Aug-89	Yes	1 6E+01

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SUBSURFACE (2-4')	INORG	Sodium	7440-23-5	5	2	2.2E+02	1.0E+03	2.6E+03	3.9E+03	ACS-TP01-03 5	Aug-89	No (e)	
3	SUBSURFACE (2-4')	INORG	Vanadium	7440-62-2	5	4	6.0E+00	1.6E+01	2.2E+02	4.8E+01	ACS-TP01-03 5	Aug-89	Yes	4.8E+01
3	SUBSURFACE (2-4')	INORG	Zinc	7440-66-6	5	5	2.9E+02	3.5E+03	1.0E+04	1.6E+04	ACS-TP01-03 5	Aug-89	Yes	1.0E+04
3	SUBSURFACE (2-10')	VOC	1,1,1-Trichloroethane	71-55-6	29	4	8.3E-02	2.7E+02	7.2E+02	7.6E+03	ACS-SB30-10	May-90	Yes	7.2E+02
3	SUBSURFACE (2-10')	VOC	1,1,2-Trichloroethane	79-00-5	29	1	6.3E-01	9.5E+01	2.4E+02	6.3E-01	ACS-SB29-08	May-90	No (f)	
3	SUBSURFACE (2-10')	VOC	1,1-Dichloroethane	75-34-3	24	5	5.0E-03	1.1E+02	2.9E+02	1.7E+00	ACS-SB29-08	May-90	Yes	1.7E+00
3	SUBSURFACE (2-10')	VOC	1,2-Dichloroethane	107-06-2	29	2	4.4E-02	9.5E+01	2.4E+02	8.1E-01	ACS-SB29-08	May-90	Yes	8.1E-01
3	SUBSURFACE (2-10')	VOC	1,2-Dichloroethene (total)	540-59-0	21	4	3.6E-01	1.3E+02	3.3E+02	2.6E+01	ACS-SB44-04 5	Jun-90	Yes	2.6E+01
3	SUBSURFACE (2-10')	VOC	1,2-Dichloropropane	78-87-5	29	2	3.5E-02	9.5E+01	2.4E+02	5.5E-01	ACS-SB29-08	May-90	Yes	5.5E-01
3	SUBSURFACE (2-10')	VOC	2-Butanone	78-93-3	29	7	5.0E-03	3.4E+03	9.2E+03	9.9E+04	ACS-SB30-10	May-90	Yes	9.2E+03
3	SUBSURFACE (2-10')	VOC	2-Hexanone	591-78-6	24	2	4.0E-03	2.3E+02	5.8E+02	3.9E-01	ACS-SB47-04 5	Jun-90	Yes	3.9E-01
3	SUBSURFACE (2-10')	VOC	4-Methyl-2-pentanone	108-10-1	29	9	2.0E-03	2.2E+03	5.7E+03	6.1E+04	ACS-SB30-10	May-90	Yes	5.7E+03
3	SUBSURFACE (2-10')	VOC	Acetone	67-64-1	29	6	7.9E-02	1.2E+03	3.2E+03	3.4E+04	ACS-SB30-10	May-90	Yes	3.2E+03
3	SUBSURFACE (2-10')	VOC	Benzene	71-43-2	29	8	2.0E-03	6.3E+01	1.5E+02	1.5E+03	ACS-SB30-10	May-90	Yes	1.5E+02
3	SUBSURFACE (2-10')	VOC	Carbon Disulfide	75-15-0	24	1	3.0E-03	1.1E+02	2.9E+02	3.0E-03	ACS-SB47-04 5	Jun-90	No (f)	
3	SUBSURFACE (2-10')	VOC	Chlorobenzene	108-90-7	29	5	1.8E-02	4.5E+01	1.0E+02	1.0E+03	ACS-SB30-10	May-90	Yes	1.0E+02
3	SUBSURFACE (2-10')	VOC	Chloroethane	75-00-3	29	1	1.2E-02	1.9E+02	4.7E+02	1.2E-02	ACS-SB47-04 5	Jun-90	No (f)	
3	SUBSURFACE (2-10')	VOC	Chloroform	67-66-3	29	3	1.0E-03	9.5E+01	2.4E+02	3.0E-03	ACS-SB47-04 5	Jun-90	Yes	3.0E-03
3	SUBSURFACE (2-10')	VOC	cis-1,2-Dichloroethene	156-59-2	8	1	2.2E-02	9.6E+00	2.1E+01	2.2E-02	SB87-07-FT	Jun-93	Yes	2.2E-02
3	SUBSURFACE (2-10')	VOC	Ethyl Benzene	100-41-4	29	22	2.0E-03	1.0E+03	2.4E+03	2.3E+04	ACS-SB30-10	May-90	Yes	2.4E+03
3	SUBSURFACE (2-10')	VOC	m,p-xylene	136777-61-2	5	2	1.2E+02	4.8E+01	1.1E+02	1.2E+02	SB84-05-FT	Jun-93	Yes	1.1E+02
3	SUBSURFACE (2-10')	VOC	Methylene Chloride	75-09-2	29	4	2.3E-02	1.1E+02	2.9E+02	2.7E+00	SB84-05-FT	Jun-93	Yes	2.7E+00
3	SUBSURFACE (2-10')	VOC	ortho-xylene	95-47-6	5	4	1.0E-02	1.4E+01	4.2E+01	6.7E+01	SB84-05-FT	Jun-93	Yes	4.2E+01
3	SUBSURFACE (2-10')	VOC	Styrene	100-42-5	29	4	5.8E-02	1.1E+02	2.6E+02	3.1E+02	ACS-SB29-08	May-90	Yes	2.6E+02
3	SUBSURFACE (2-10')	VOC	Tetrachloroethene	127-18-4	29	14	2.0E-03	1.6E+03	4.3E+03	4.6E+04	ACS-SB30-10	May-90	Yes	4.3E+03
3	SUBSURFACE (2-10')	VOC	Toluene	108-88-3	24	20	1.0E-03	6.4E+03	1.6E+04	1.3E+05	ACS-SB30-10	May-90	Yes	1.6E+04
3	SUBSURFACE (2-10')	VOC	Trichloroethene	79-01-6	29	8	2.0E-02	6.7E+02	1.8E+03	1.9E+04	ACS-SB30-10	May-90	Yes	1.8E+03
3	SUBSURFACE (2-10')	VOC	Vinyl Chloride	75-01-4	29	1	1.2E-02	2.1E+02	4.9E+02	1.2E-02	SB87-07-FT	Jun-93	No (f)	
3	SUBSURFACE (2-10')	VOC	Xylenes (total)	1330-20-7	24	22	1.0E-02	5.7E+03	1.3E+04	1.0E+05	ACS-SB30-10	May-90	Yes	1.3E+04
3	SUBSURFACE (2-10')	SVOC	1,2-Dichlorobenzene	95-50-1	12	2	2.0E-01	7.2E+00	1.3E+01	2.6E-01	ACS-SB02-07	Aug-89	Yes	2.6E-01
3	SUBSURFACE (2-10')	SVOC	1,4-Dichlorobenzene	106-46-7	17	1	9.3E-02	5.4E+00	9.2E+00	9.3E-02	ACS-SB41-05 5	Jun-90	Yes	9.3E-02
3	SUBSURFACE (2-10')	SVOC	2,4,5-Trichlorophenol	95-95-4	12	0		2.8E+01	5.3E+01				Yes (g)	1.7E-01
3	SUBSURFACE (2-10')	SVOC	2,4-Dimethylphenol	105-67-9	12	4	3.9E-02	1.0E+01	1.9E+01	6.2E+01	ACS-SB30-10	May-90	Yes	1.9E+01
3	SUBSURFACE (2-10')	SVOC	2,4-Dinitrotoluene	121-14-2	17	1	8.4E-01	5.4E+00	9.2E+00	8.4E-01	ACS-SB02-07	Aug-89	Yes	8.4E-01
3	SUBSURFACE (2-10')	SVOC	2-Methylnaphthalene	91-57-6	12	8	2.9E-01	2.9E+01	6.0E+01	2.1E+02	ACS-SB30-10	May-90	Yes	6.0E+01
3	SUBSURFACE (2-10')	SVOC	2-Methylphenol	95-48-7	12	4	8.0E-02	6.7E+00	1.1E+01	2.1E+01	ACS-SB30-10	May-90	Yes	1.1E+01
3	SUBSURFACE (2-10')	SVOC	4-Methylphenol	106-44-5	12	7	4.1E-02	5.9E+00	1.0E+01	2.2E+01	ACS-SB30-10	May-90	Yes	1.0E+01
3	SUBSURFACE (2-10')	SVOC	4-Nitrophenol	100-02-7	12	1	6.6E-02	1.5E+01	2.7E+01	6.6E-02	ACS-TP01-06	Aug-89	Yes	6.6E-02
3	SUBSURFACE (2-10')	SVOC	Acenaphthene	83-32-9	12	2	4.3E-01	2.7E+01	5.2E+01	7.1E-01	ACS-SB02-07	Aug-89	Yes	7.1E-01
3	SUBSURFACE (2-10')	SVOC	Anthracene	120-12-7	12	2	8.9E-01	7.4E+00	1.3E+01	1.2E+00	ACS-SB41-05.5	Jun-90	Yes	1.2E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(a)anthracene	56-55-3	12	3	8.5E-01	7.6E+00	1.3E+01	2.1E+00	ACS-SB02-07	Aug-89	Yes	2.1E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(a)pyrene	50-32-8	17	3	6.1E-01	5.5E+00	9.3E+00	1.4E+00	ACS-SB01-03	Aug-89	Yes	1.4E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(b)fluoranthene	205-99-2	17	3	2.2E+00	5.8E+00	9.5E+00	3.9E+00	ACS-SB01-03	Aug-89	Yes	3.9E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(g,h,i)perylene	191-24-2	17	3	2.6E-01	5.4E+00	9.2E+00	1.1E+00	ACS-SB01-03	Aug-89	Yes	1.1E+00
3	SUBSURFACE (2-10')	SVOC	Benzo(k)fluoranthene	207-08-9	17	3	2.2E+00	5.8E+00	9.5E+00	3.9E+00	ACS-SB01-03	Aug-89	Yes	3.9E+00
3	SUBSURFACE (2-10')	SVOC	Benzoic Acid	65-85-0	12	5	7.9E-02	3.8E+01	1.5E+04	2.3E+02	ACS-SB30-10	May-90	Yes	2.3E+02
3	SUBSURFACE (2-10')	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	17	15	1.1E-01	6.4E+02	1.5E+03	8.9E+03	ACS-SB30-10	May-90	Yes	1.5E+03
3	SUBSURFACE (2-10')	SVOC	Butylbenzylphthalate	85-68-7	12	6	3.5E+00	2.0E+01	3.4E+01	6.6E+01	ACS-SB30-10	May-90	Yes	3.4E+01
3	SUBSURFACE (2-10')	SVOC	Chrysene	218-01-9	17	3	1.3E+00	5.6E+00	9.3E+00	1.6E+00	ACS-SB41-05 5	Jun-90	Yes	1.6E+00
3	SUBSURFACE (2-10')	SVOC	Dibenzo(a,h)anthracene	53-70-3	17	2	1.9E-01	5.4E+00	9.2E+00	2.7E-01	ACS-SB01-03	Aug-89	Yes	2.7E-01
3	SUBSURFACE (2-10')	SVOC	Dibenzofuran	132-64-9	12	4	7.1E-02	7.3E+00	1.3E+01	6.4E-01	ACS-SB02-07	Aug-89	Yes	6.4E-01
3	SUBSURFACE (2-10')	SVOC	Diethylphthalate	84-66-2	12	3	1.3E+00	5.6E+00	1.0E+01	5.0E+00	ACS-TP01-03 5	Aug-89	Yes	5.0E+00
3	SUBSURFACE (2-10')	SVOC	Dimethylphthalate	131-11-3	12	2	6.5E+00	6.5E+00	1.0E+01	1.6E+01	ACS-SB30-10	May-90	Yes	1.0E+01
3	SUBSURFACE (2-10')	SVOC	Di-n-butylphthalate	84-74-2	17	13	3.9E-02	4.0E+01	6.7E+01	2.4E+02	ACS-SB30-10	May-90	Yes	6.7E+01
3	SUBSURFACE (2-10')	SVOC	Di-n-octylphthalate	117-84-0	12	6	4.5E-01	9.5E+00	1.6E+01	3.8E+01	ACS-SB01-03	Aug-89	Yes	1.6E+01
3	SUBSURFACE (2-10')	SVOC	Fluoranthene	206-44-0	12	4	4.0E-02	8.3E+00	1.3E+01	6.1E+00	ACS-SB41-05 5	Jun-90	Yes	6.1E+00
3	SUBSURFACE (2-10')	SVOC	Fluorene	86-73-7	12	4	9.2E-02	7.4E+00	1.3E+01	9.8E-01	ACS-SB41-05 5	Jun-90	Yes	9.8E-01
3	SUBSURFACE (2-10')	SVOC	*Indeno(1,2,3-cd)pyrene*	193-39-5	17	2	5.5E-01	5.4E+00	9.2E+00	8.2E-01	ACS-SB01-03	Aug-89	Yes	8.2E-01
3	SUBSURFACE (2-10')	SVOC	Isophorone	78-59-1	17	9	1.4E-01	2.4E+02	6.0E+02	3.6E+03	ACS-SB30-10	May-90	Yes	6.0E+02
3	SUBSURFACE (2-10')	SVOC	Naphthalene	91-20-3	17	12	5.4E-02	5.8E+01	1.3E+02	6.8E+02	ACS-SB30-10	May-90	Yes	1.3E+02
3	SUBSURFACE (2-10')	SVOC	N-Nitrosodiphenylamine	86-30-6	17	2	1.8E-01	5.5E+00	9.3E+00	1.9E+00	ACS-SB01-03	Aug-89	Yes	1.9E+00
3	SUBSURFACE (2-10')	SVOC	Pentachlorophenol	87-86-5	17	3	4.5E-02	2.7E+01	4.5E+01	1.6E+01	ACS-SB02-07	Aug-89	Yes	1.6E+01
3	SUBSURFACE (2-10')	SVOC	Phenanthrene	85-01-8	12	5	2.2E-01	7.0E+00	1.2E+01	6.4E+00	ACS-SB41-05 5	Jun-90	Yes	6.4E+00
3	SUBSURFACE (2-10')	SVOC	Phenol	108-95-2	12	8	5.8E-02	7.8E+01	2.1E+02	8.6E+02	ACS-SB30-10	May-90	Yes	2.1E+02

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
3	SUBSURFACE (2-10')	SVOC	Pyrene	129-00-0	12	4	7 1E-02	7 9E+00	1 3E+01	4 2E+00	ACS-SB02-07	Aug-89	Yes	4 2E+00
3	SUBSURFACE (2-10')	P/PCB	4 4'-DDD	72 54 8	24	0		2 9E-01	4 6E-01				Yes (g)	1 5E-01
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1242	53469-21-9	29	5	3 2E+00	1 3E+01	2 9E+01	2 8E+02	ACS-TP01-03 5	Aug-89	Yes	2 9E+01
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1248	12672 29 6	29	6	1 6E-01	8 0E+00	1 6E+01	1 3E+02	KP01-S-IEA	Jul-97	Yes	1 6E+01
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1254	11097-69-1	29	9	1 0E+00	6 3E+00	9 5E+00	4 4E+01	ACS-SB30-10	May-90	Yes	9 5E+00
3	SUBSURFACE (2-10')	P/PCB	Aroclor-1260	11096-82 5	29	4	9 8E-01	3 9E+00	6 5E+00	3 6E+01	SP02-S-IEA	Jul-97	Yes	6 5E+00
3	SUBSURFACE (2-10')	P/PCB	Heptachlor	76-44-8	24	0		1 4E-01	2 3E-01				Yes (g)	8 8E-02
3	SUBSURFACE (2-10')	P/PCB	Heptachlor epoxide	1024-57-3	24	0		1 4E-01	2 3E-01				Yes (g)	4 2E-02
3	SUBSURFACE (2-10')	INORG	Aluminum	7429-90-5	12	12	2 4E+03	6 5E+03	9 5E+03	1 8E+04	ACS-SB29-08	May-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Antimony	7440-36-0	8	6	9 0E+00	3 8E+01	2 5E+03	1 5E+02	ACS-SB30-10	May-90	Yes	1 5E+02
3	SUBSURFACE (2-10')	INORG	Arsenic	7440 38-2	12	12	1 5E+00	3 1E+00	3 7E+00	5 4E+00	ACS-SB29-08	May-90	Yes	3 7E+00
3	SUBSURFACE (2-10')	INORG	Barium	7440-39-3	12	8	6 7E+01	1 2E+03	2 4E+03	6 4E+03	ACS-SB30-10	May-90	Yes	2 4E+03
3	SUBSURFACE (2-10')	INORG	Beryllium	7440-41-7	12	9	6 0E-02	2 5E-01	3 9E-01	8 0E-01	ACS-SB29-08	May-90	Yes	3 9E-01
3	SUBSURFACE (2-10')	INORG	Cadmium	7440-43-9	12	12	9 0E-02	1 7E+02	4 2E+02	1 7E+03	ACS-SB30-10	May-90	Yes	4 2E+02
3	SUBSURFACE (2-10')	INORG	Calcium	7440-70-2	12	10	4 0E+02	1 6E+04	2 4E+04	4 8E+04	ACS-SB30-10	May-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Chromium (total)	7440-47-3	12	12	4 8E+00	7 3E+02	1 4E+03	3 8E+03	ACS-SB30-10	May-90	Yes	1 4E+03
3	SUBSURFACE (2-10')	INORG	Cobalt	7440-48-4	12	7	8 4E+00	2 5E+01	4 7E+01	1 5E+02	ACS-TP01-03 5	Aug-89	Yes	4 7E+01
3	SUBSURFACE (2-10')	INORG	Copper	7440-50-8	12	9	7 7E+00	9 4E+02	2 0E+03	5 8E+03	ACS-SB30-10	May-90	Yes	2 0E+03
3	SUBSURFACE (2-10')	INORG	Cyanide (total)	57-12-5	9	4	4 6E+00	1 4E+01	2 8E+01	6 6E+01	ACS-TP01-03 5	Aug-89	Yes	2 8E+01
3	SUBSURFACE (2-10')	INORG	Iron	7439-89-6	12	12	2 0E+03	1 4E+04	3 1E+04	7 0E+04	ACS-TP01-03 5	Aug-89	No (e)	
3	SUBSURFACE (2-10')	INORG	Lead	7439-92-1	12	12	5 0E+00	3 5E+03	6 7E+03	1 7E+04	ACS-SB30-10	May-90	Yes	6 7E+03
3	SUBSURFACE (2-10')	INORG	Magnesium	7439-95-4	12	9	5 8E+02	5 7E+03	8 6E+03	1 5E+04	ACS-SB41-05 5	Jun-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Manganese	7439-96-5	12	12	2 6E+01	2 4E+02	6 6E+02	7 3E+02	ACS-TP01-03 5	Aug-89	Yes	6 6E+02
3	SUBSURFACE (2-10')	INORG	Mercury	7439-97-6	12	9	7 0E-02	5 1E+00	1 0E+01	3 6E+01	ACS-SB30-10	May-90	Yes	1 0E+01
3	SUBSURFACE (2-10')	INORG	Nickel	7440-02-0	12	8	1 0E+01	2 7E+01	5 5E+01	2 0E+02	ACS-TP01-03 5	Aug-89	Yes	5 5E+01
3	SUBSURFACE (2-10')	INORG	Potassium	7440-09-7	12	10	2 1E+02	7 2E+02	1 2E+03	3 6E+03	ACS-SB29-08	May-90	No (e)	
3	SUBSURFACE (2-10')	INORG	Selenium	7782-49-2	12	7	1 4E+00	1 4E+01	3 8E+01	1 6E+02	ACS-SB30-10	May-90	Yes	3 8E+01
3	SUBSURFACE (2-10')	INORG	Silver	7440-22-4	12	5	2 5E+00	3 4E+01	8 1E+01	3 1E+02	ACS-SB30-10	May-90	Yes	8 1E+01
3	SUBSURFACE (2-10')	INORG	Sodium	7440-23-5	12	4	2 1E+02	6 9E+02	1 3E+03	3 9E+03	ACS-TP01-03 5	Aug-89	No (e)	
3	SUBSURFACE (2-10')	INORG	Thallium	7440-28-0	12	1	1 5E+00	6 5E-01	8 0E-01	1 5E+00	ACS-SB29-08	May-90	Yes	8 0E-01
3	SUBSURFACE (2-10')	INORG	Vanadium	7440-62-2	12	11	3 9E+00	1 2E+01	1 9E+01	4 8E+01	ACS-TP01-03 5	Aug-89	Yes	1 9E+01
3	SUBSURFACE (2-10')	INORG	Zinc	7440-66-6	12	12	9 4E+00	2 1E+03	1 3E+05	1 6E+04	ACS-TP01-03 5	Aug-89	Yes	1 6E+04
4B	SURFACE - SED	VOC	1,2-Dichloroethene (total)	540-59-0	4	1	1 2E-02	1 0E-02	1 4E-02	1 2E-02	APD-SD-30-01	May-96	Yes	1 2E-02
4B	SURFACE - SED	VOC	Acetone	67-64-1	4	2	1 4E-02	1 6E-02	2 9E-02	2 5E-02	APD-SD-30-01	May-96	Yes	2 5E-02
4B	SURFACE - SED	SVOC	2-Methylnaphthalene	91-57-6	6	1	3 1E-02	3 3E-01	5 1E-01	3 1E-02	ACS-ST01-001	Sep-97	Yes	3 1E-02
4B	SURFACE - SED	SVOC	Acenaphthylene	208-96-8	6	3	5 2E-02	2 3E-01	3 4E-01	2 8E-01	SD29-AVG	May-96	Yes	2 8E-01
4B	SURFACE - SED	SVOC	Anthracene	120-12-7	6	3	6 8E-02	2 3E-01	3 4E-01	2 6E-01	SD29-AVG	May-96	Yes	2 6E-01
4B	SURFACE - SED	SVOC	Benzo(a)anthracene	56-55-3	6	5	4 7E-02	2 0E-01	7 8E-01	3 6E-01	SD29-AVG	May-96	Yes	3 6E-01
4B	SURFACE - SED	SVOC	Benzo(a)pyrene	50-32 8	6	5	6 9E-02	2 5E-01	3 6E-01	4 0E-01	SD29-AVG	May-96	Yes	3 6E-01
4B	SURFACE - SED	SVOC	Benzo(b)fluoranthene	205-99-2	6	6	1 0E-01	2 6E-01	3 7E-01	4 4E-01	SD29-AVG	May-96	Yes	3 7E-01
4B	SURFACE - SED	SVOC	Benzo(g,h,i)perylene	191-24-2	6	4	7 7E-02	2 6E-01	3 4E-01	3 0E-01	SD29-AVG	May-96	Yes	3 0E-01
4B	SURFACE - SED	SVOC	Benzo(k)fluoranthene	207-08-9	6	4	5 8E-02	2 9E-01	3 9E-01	4 1E-01	SD29-AVG	May-96	Yes	3 9E-01
4B	SURFACE - SED	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6	4	4 9E-01	1 2E+00	7 1E+00	4 0E+00	ACS-ST11-101	Sep-97	Yes	4 0E+00
4B	SURFACE - SED	SVOC	Carbazole	86-74-8	6	1	3 6E-02	3 3E-01	5 1E-01	3 6E-02	ACS-ST01-001	Sep-97	Yes	3 6E-02
4B	SURFACE - SED	SVOC	Chrysene	218-01-9	6	6	7 9E-02	2 1E-01	3 1E-01	3 9E-01	SD29-AVG	May-96	Yes	3 1E-01
4B	SURFACE - SED	SVOC	Dibenzo(a,h)anthracene	53-70-3	6	3	6 3E-02	2 4E-01	3 5E-01	2 9E-01	SD29-AVG	May-96	Yes	2 9E-01
4B	SURFACE - SED	SVOC	Di-n-butylphthalate	84-74-2	6	1	8 4E-02	3 3E-01	9 8E-01	8 4E-02	ACS-ST11-101	Sep-97	Yes	8 4E-02
4B	SURFACE - SED	SVOC	Fluoranthene	206-44-0	6	6	7 0E-02	2 3E-01	3 4E-01	4 0E-01	SD29-AVG	May-96	Yes	3 4E-01
4B	SURFACE - SED	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	6	5	5 4E-02	2 0E-01	3 0E-01	3 4E-01	SD29-AVG	May-96	Yes	3 0E-01
4B	SURFACE - SED	SVOC	Isophorone	78-59-1	6	1	4 2E-02	3 2E-01	5 0E-01	4 2E-02	ACS-ST11-101	Sep-97	Yes	4 2E-02
4B	SURFACE - SED	SVOC	Naphthalene	91-20-3	6	1	2 5E-02	3 3E-01	5 1E-01	2 5E-02	ACS-ST01-001	Sep-97	Yes	2 5E-02
4B	SURFACE - SED	SVOC	Phenanthrene	85-01-8	6	4	3 6E-02	1 6E-01	7 0E-01	1 5E-01	ACS-ST02-001	Sep-97	Yes	1 5E-01
4B	SURFACE - SED	SVOC	Pyrene	129-00-0	6	6	1 0E-01	2 3E-01	3 4E-01	3 9E-01	SD29-AVG	May-96	Yes	3 4E-01
4B	SURFACE - SED	P/PCB	4,4'-DDD	72-54-8	6	1	7 8E-02	3 3E-02	6 0E-02	7 8E-02	ACS-ST11-101	Sep-97	Yes	6 0E-02
4B	SURFACE - SED	P/PCB	4,4'-DDE	72-55-9	6	1	2 9E-01	6 8E-02	2 0E+01	2 9E-01	ACS-ST11-101	Sep-97	Yes	2 9E-01
4B	SURFACE - SED	P/PCB	4,4'-DDT	50-29-3	6	1	2 4E-01	6 0E-02	1 3E+01	2 4E-01	ACS-ST11-101	Sep-97	Yes	2 4E-01
4B	SURFACE - SED	P/PCB	alpha-Chlordane	5103-71-9	6	1	2 2E-01	4 7E-02	1 2E-01	2 2E-01	ACS-ST11-101	Sep-97	Yes	1 2E-01
4B	SURFACE - SED	P/PCB	Aroclor-1248	12672-29-6	6	3	7 4E-02	2 8E-01	9 4E-01	2 2E-01	APD-SD-28-01	May-96	Yes	2 2E-01
4B	SURFACE - SED	P/PCB	Aroclor-1254	11097-69-1	6	4	4 2E-01	2 0E+00	4 7E+00	8 8E+00	ACS-ST11-101	Sep-97	Yes	4 7E+00
4B	SURFACE - SED	P/PCB	Aroclor-1260	11096-82-5	6	3	3 9E-01	5 1E-01	9 9E-01	9 7E-01	APD-SD-28-01	May-96	Yes	9 7E-01
4B	SURFACE - SED	P/PCB	beta-BHC	319-85-7	6	1	2 6E-02	1 4E-02	2 5E-02	2 6E-02	ACS-ST11-101	Sep-97	Yes	2 5E-02
4B	SURFACE - SED	P/PCB	Endosulfan I	959-98-8	6	1	3 9E-01	7 5E-02	2 0E-01	3 9E-01	ACS-ST11-101	Sep-97	Yes	2 0E-01
4B	SURFACE - SED	P/PCB	Endosulfan sulfate	1031-07-8	6	1	6 0E-02	3 0E-02	5 3E-02	6 0E-02	ACS-ST11-101	Sep-97	Yes	5 3E-02
4B	SURFACE - SED	P/PCB	Endrin	72-20-8	6	1	1 5E-01	4 5E-02	9 2E-02	1 5E-01	ACS-ST11-101	Sep-97	Yes	9 2E-02

Table 2-5b Summary of Constituents in Soil Evaluated in Risk Assessment for Utility Maintenance and Building Construction Scenarios
ACS NPL Site, Griffith, IN

Area	Depth	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
4B	SURFACE - SED	P/PCB	gamma-BHC	58-89-9	6	1	2 9E-02	1 5E-02	2 6E-02	2 9E-02	ACS-ST11-101	Sep-97	Yes	2 6E-02
4B	SURFACE - SED	P/PCB	gamma-Chlordane	5103-74-2	6	1	4 8E-02	1 8E-02	3 4E-02	4 8E-02	ACS-ST11-101	Sep-97	Yes	3 4E-02
4B	SURFACE - SED	P/PCB	Heptachlor	76-44-8	6	1	6 2E-02	2 0E-02	4 0E-02	6 2E-02	ACS-ST11-101	Sep-97	Yes	4 0E-02
4B	SURFACE - SED	P/PCB	Methoxychlor	72-43-5	6	1	2 9E-01	1 5E-01	2 6E-01	2 9E-01	ACS-ST11-101	Sep-97	Yes	2 6E-01
4B	SURFACE - SED	INORG	Arsenic	7440-38-2	3	3	3 3E+00	5 3E+00	2 9E+01	7 6E+00	APD-SD-28-01	May-96	Yes	7 6E+00
4B	SURFACE - SED	INORG	Cadmium	7440-43-9	3	3	2 0E+00	3 6E+00	7 0E+00	5 9E+00	APD-SD-28-01	May-96	Yes	5 9E+00
4B	SURFACE - SED	INORG	Chromium (total)	7440-47-3	3	3	9 9E+00	2 1E+01	6 3E+02	3 3E+01	APD-SD-28-01	May-96	Yes	3 3E+01
4B	SURFACE - SED	INORG	Copper	7440-50-8	3	3	9 4E+00	2 3E+01	2 1E+03	3 7E+01	APD-SD-28-01	May-96	Yes	3 7E+01
4B	SURFACE - SED	INORG	Lead	7439-92-1	3	3	4 8E+01	1 1E+02	2 0E+02	1 4E+02	APD-SD-28-01	May-96	Yes	1 4E+02
4B	SURFACE - SED	INORG	Mercury	7439-97-6	3	3	1 1E-01	2 5E-01	2 8E+01	4 5E-01	APD-SD-28-01	May-96	Yes	4 5E-01
4B	SURFACE - SED	INORG	Zinc	7440-66-6	3	3	7 9E+01	1 7E+02	1 2E+04	3 0E+02	APD-SD-28-01	May-96	Yes	3 0E+02

(a) Table only includes constituents that were detected at least once in media/area/depth

(b) The arithmetic mean was calculated assuming the concentration is equal to one-half the detection limit for non-detects

(c) UCL = 95% Upper Confidence Limit on the arithmetic mean. The UCL was calculated assuming the concentration is equal to one-half the detection limit for non-detects.

(d) The UCL was used as the exposure point concentration unless it was greater than the maximum, in which case, the maximum detected concentration was used

(e) Chemical was not retained for risk calculations because it is a major earth element and does not have a toxicity value. See text.

(f) Chemical was not retained for risk calculations because it was detected in less than 5% of the samples from this media/area

(g) Chemical was not detected in this area/depth, but was retained for calculation because it was detected in another soil depth that may be exposed during excavation. Concentration used in calculations was the 95% UCL on the mean of the (detection limits * 0.5), or the maximum concentration detected in the other depth, whichever was lower.

Table 2-6 Summary of Constituents in Sediment Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean [b] (mg/kg)	UCL [c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/kg)
1	VOC	Chloroform	67-66-3	2	2	2.0E-03	2.0E-03	2.0E-03	2.0E-03	ACS-SD-01-01	Jul-89	Yes	2.0E-03
1	VOC	Toluene	108-88-3	2	1	3.0E-03	2.8E-03	4.3E-03	3.0E-03	ACS-SD-02-01	Jul-89	Yes	3.0E-03
1	SVOC	Butylbenzylphthalate	85-68-7	2	1	1.6E-01	1.6E-01	1.8E-01	1.6E-01	ACS-SD-02-01	Jul-89	Yes	1.6E-01
1	SVOC	Di-n-butylphthalate	84-74-2	2	1	1.7E-01	1.7E-01	1.8E-01	1.7E-01	ACS-SD-02-01	Jul-89	Yes	1.7E-01
1	SVOC	Phenol	108-95-2	2	1	1.9E-01	1.8E-01	2.6E-01	1.9E-01	ACS-SD-02-01	Jul-89	Yes	1.9E-01
1	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2	2	3.5E-01	6.7E+00	4.7E+01	1.3E+01	ACS-SD-02-01	Jul-89	Yes	1.3E+01
1	P/PCB	Aroclor-1248	12672-29-6	2	1	4.6E+00	2.3E+00	1.7E+01	4.6E+00	ACS-SD-02-01	Jul-89	Yes	4.6E+00
1	P/PCB	Aroclor-1254	11097-69-1	2	2	5.9E-01	8.8E+00	6.1E+01	1.7E+01	ACS-SD-02-01	Jul-89	Yes	1.7E+01
1	INORG	Aluminum	7429-90-5	2	2	1.9E+03	3.4E+03	1.3E+04	4.9E+03	ACS-SD-02-01	Jul-89	No (e)	
1	INORG	Arsenic	7440-38-2	2	2	1.4E+00	1.5E+00	1.8E+00	1.5E+00	ACS-SD-01-01	Jul-89	Yes	1.5E+00
1	INORG	Barium	7440-39-3	2	1	6.9E+01	4.7E+01	1.9E+02	6.9E+01	ACS-SD-02-01	Jul-89	Yes	6.9E+01
1	INORG	Beryllium	7440-41-7	2	2	1.7E-01	2.5E-01	7.2E-01	3.2E-01	ACS-SD-02-01	Jul-89	Yes	3.2E-01
1	INORG	Cadmium	7440-43-9	2	2	8.0E-02	6.9E-01	4.5E+00	1.3E+00	ACS-SD-02-01	Jul-89	Yes	1.3E+00
1	INORG	Calcium	7440-70-2	2	2	9.9E+03	1.0E+04	1.3E+04	1.1E+04	ACS-SD-02-01	Jul-89	No (e)	
1	INORG	Chromium (total)	7440-47-3	2	2	7.3E+00	1.4E+01	5.7E+01	2.1E+01	ACS-SD-02-01	Jul-89	Yes	2.1E+01
1	INORG	Copper	7440-50-8	2	2	6.3E+00	1.5E+01	7.2E+01	2.4E+01	ACS-SD-02-01	Jul-89	Yes	2.4E+01
1	INORG	Iron	7439-89-6	2	2	3.3E+03	4.0E+03	8.3E+03	4.7E+03	ACS-SD-02-01	Jul-89	No (e)	
1	INORG	Lead	7439-92-1	2	2	8.2E+00	1.4E+02	1.0E+03	2.8E+02	ACS-SD-02-01	Jul-89	Yes	2.8E+02
1	INORG	Magnesium	7439-95-4	2	2	2.7E+03	3.5E+03	8.9E+03	4.4E+03	ACS-SD-01-01	Jul-89	No (e)	
1	INORG	Manganese	7439-96-5	2	2	7.6E+01	1.5E+02	5.9E+02	2.2E+02	ACS-SD-02-01	Jul-89	Yes	2.2E+02
1	INORG	Mercury	7439-97-6	2	1	7.1E-01	3.7E-01	2.5E+00	7.1E-01	ACS-SD-02-01	Jul-89	Yes	7.1E-01
1	INORG	Potassium	7440-09-7	2	2	3.4E+02	3.7E+02	5.4E+02	4.0E+02	ACS-SD-02-01	Jul-89	No (e)	
1	INORG	Vanadium	7440-62-2	2	2	4.5E+00	5.4E+00	1.1E+01	6.2E+00	ACS-SD-02-01	Jul-89	Yes	6.2E+00
1	INORG	Zinc	7440-66-6	2	2	2.0E+01	6.7E+01	3.6E+02	1.1E+02	ACS-SD-02-01	Jul-89	Yes	1.1E+02
2	VOC	Benzene	71-43-2	2	1	1.4E+01	7.0E+00	5.1E+01	1.4E+01	ACS-SD-05-01	Jul-89	Yes	1.4E+01
2	VOC	Chloroform	67-66-3	2	1	3.0E-03	2.8E-03	4.3E-03	3.0E-03	ACS-SD-05-01	Jul-89	Yes	3.0E-03
2	VOC	Ethyl Benzene	100-41-4	2	1	1.3E-01	6.6E-02	4.7E-01	1.3E-01	ACS-SD-05-01	Jul-89	Yes	1.3E-01
2	VOC	Toluene	108-88-3	2	1	5.6E-02	2.9E-02	2.0E-01	5.6E-02	ACS-SD-05-01	Jul-89	Yes	5.6E-02
2	VOC	Xylenes (total)	1330-20-7	2	1	2.0E-01	1.0E-01	7.2E-01	2.0E-01	ACS-SD-05-01	Jul-89	Yes	2.0E-01
2	SVOC	2,4-Dimethylphenol	105-67-9	2	1	6.1E-01	3.9E-01	1.8E+00	6.1E-01	ACS-SD-05-01	Jul-89	Yes	6.1E-01
2	SVOC	2-Methylnaphthalene	91-57-6	2	1	1.6E-01	1.6E-01	1.8E-01	1.6E-01	ACS-SD-05-01	Jul-89	Yes	1.6E-01
2	SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	2	1	7.5E-02	1.2E-01	4.0E-01	7.5E-02	ACS-SD-05-01	Jul-89	Yes	7.5E-02
2	SVOC	Anthracene	120-12-7	2	1	8.3E-02	1.2E-01	3.8E-01	8.3E-02	ACS-SD-05-01	Jul-89	Yes	8.3E-02
2	SVOC	Benzo(a)anthracene	56-55-3	2	2	7.8E-02	3.9E-01	2.4E+00	7.1E-01	ACS-SD-05-01	Jul-89	Yes	7.1E-01
2	SVOC	Benzo(a)pyrene	50-32-8	2	2	6.3E-02	3.8E-01	2.4E+00	6.9E-01	ACS-SD-05-01	Jul-89	Yes	6.9E-01
2	SVOC	Benzo(b)fluoranthene	205-99-2	2	2	1.6E-01	3.8E-01	1.8E+00	6.0E-01	ACS-SD-05-01	Jul-89	Yes	6.0E-01
2	SVOC	Benzo(g,h,i)perylene	191-24-2	2	1	4.6E-01	3.1E-01	1.2E+00	4.6E-01	ACS-SD-05-01	Jul-89	Yes	4.6E-01
2	SVOC	Benzo(k)fluoranthene	207-08-9	2	2	1.7E-01	4.3E-01	2.1E+00	6.9E-01	ACS-SD-05-01	Jul-89	Yes	6.9E-01
2	SVOC	Butylbenzylphthalate	85-68-7	2	1	1.7E-01	1.7E-01	1.8E-01	1.7E-01	ACS-SD-05-01	Jul-89	Yes	1.7E-01
2	SVOC	Chrysene	218-01-9	2	2	7.7E-02	3.8E-01	2.3E+00	6.9E-01	ACS-SD-05-01	Jul-89	Yes	6.9E-01
2	SVOC	Dibenzo(a,h)anthracene	53-70-3	2	1	1.6E-01	1.6E-01	1.8E-01	1.6E-01	ACS-SD-05-01	Jul-89	Yes	1.6E-01
2	SVOC	Fluoranthene	206-44-0	2	2	6.2E-02	5.3E-01	3.5E+00	1.0E+00	ACS-SD-05-01	Jul-89	Yes	1.0E+00
2	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2	1	3.8E-01	2.7E-01	9.5E-01	3.8E-01	ACS-SD-05-01	Jul-89	Yes	3.8E-01
2	SVOC	Naphthalene	91-20-3	2	1	1.1E-01	1.4E-01	3.1E-01	1.1E-01	ACS-SD-05-01	Jul-89	Yes	1.1E-01
2	SVOC	Phenanthrene	85-01-8	2	1	4.4E-01	3.0E-01	1.2E+00	4.4E-01	ACS-SD-05-01	Jul-89	Yes	4.4E-01
2	SVOC	Pyrene	129-00-0	2	2	7.1E-02	5.9E-01	3.8E+00	1.1E+00	ACS-SD-05-01	Jul-89	Yes	1.1E+00
2	SVOC	bis(2-Chloroethyl) ether	111-44-4	2	1	5.6E-01	3.6E-01	1.6E+00	5.6E-01	ACS-SD-05-01	Jul-89	Yes	5.6E-01
2	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2	1	4.4E+00	2.3E+00	1.5E+01	4.4E+00	ACS-SD-05-01	Jul-89	Yes	4.4E+00
2	INORG	Aluminum	7429-90-5	2	2	4.0E+03	4.4E+03	7.1E+03	4.9E+03	ACS-SD-05-01	Jul-89	No (e)	
2	INORG	Arsenic	7440-38-2	2	2	5.7E+00	7.9E+00	2.2E+01	1.0E+01	ACS-SD-05-01	Jul-89	Yes	1.0E+01
2	INORG	Barium	7440-39-3	2	1	9.1E+01	6.4E+01	2.4E+02	9.1E+01	ACS-SD-05-01	Jul-89	Yes	9.1E+01

Table 2-6 Summary of Constituents in Sediment Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
2	INORG	Beryllium	7440-41-7	2	2	2.2E-01	3.5E-01	1.1E+00	4.7E-01	ACS-SD-05-01	Jul-89	Yes	4.7E-01
2	INORG	Cadmium	7440-43-9	2	2	3.9E-01	1.3E+00	7.4E+00	2.3E+00	ACS-SD-05-01	Jul-89	Yes	2.3E+00
2	INORG	Calcium	7440-70-2	2	2	1.6E+03	3.7E+04	2.6E+05	7.3E+04	ACS-SD-05-01	Jul-89	No (e)	
2	INORG	Chromium (total)	7440-47-3	2	2	5.4E+00	1.7E+01	9.0E+01	2.9E+01	ACS-SD-05-01	Jul-89	Yes	2.9E+01
2	INORG	Copper	7440-50-8	2	1	3.7E+01	2.1E+01	1.3E+02	3.7E+01	ACS-SD-05-01	Jul-89	Yes	3.7E+01
2	INORG	Iron	7439-89-6	2	2	1.1E+04	1.3E+04	2.1E+04	1.4E+04	ACS-SD-05-01	Jul-89	No (e)	
2	INORG	Lead	7439-92-1	2	2	2.3E+01	8.8E+01	4.9E+02	1.5E+02	ACS-SD-05-01	Jul-89	Yes	1.5E+02
2	INORG	Magnesium	7439-95-4	2	2	6.5E+02	9.4E+03	6.5E+04	1.8E+04	ACS-SD-05-01	Jul-89	No (e)	
2	INORG	Manganese	7439-96-5	2	2	5.3E+01	2.1E+02	1.2E+03	3.7E+02	ACS-SD-05-01	Jul-89	Yes	3.7E+02
2	INORG	Mercury	7439-97-6	2	1	1.3E-01	1.1E-01	2.4E-01	1.3E-01	ACS-SD-05-01	Jul-89	Yes	1.3E-01
2	INORG	Nickel	7440-02-0	2	1	1.4E+01	1.1E+01	3.3E+01	1.4E+01	ACS-SD-05-01	Jul-89	Yes	1.4E+01
2	INORG	Potassium	7440-09-7	2	2	2.9E+02	7.3E+02	3.5E+03	1.2E+03	ACS-SD-05-01	Jul-89	No (e)	
2	INORG	Vanadium	7440-62-2	2	2	6.5E+00	1.0E+01	3.5E+01	1.4E+01	ACS-SD-05-01	Jul-89	Yes	1.4E+01
2	INORG	Zinc	7440-66-6	2	2	8.7E+01	1.0E+02	1.9E+02	1.2E+02	ACS-SD-05-01	Jul-89	Yes	1.2E+02
4A	VOC	1,1,1-Trichloroethane	71-55-6	32	1	3.0E-03	6.9E-02	1.7E-01	3.0E-03	ACS-SD-11-01	May-90	No (f)	
4A	VOC	1,2-Dichloroethene (total)	540-59-0	32	1	6.0E-03	6.9E-02	1.7E-01	6.0E-03	ACS-SD-10-01	May-90	No (f)	
4A	VOC	2-Butanone	78-93-3	32	9	5.0E-03	7.3E-02	1.7E-01	7.4E-02	APD-SD-33-01-RE	May-96	Yes	7.4E-02
4A	VOC	Acetone	67-64-1	32	19	1.2E-02	1.2E-01	2.2E-01	2.3E-01	APD-SD-33-01-RE	May-96	Yes	2.2E-01
4A	VOC	Benzene	71-43-2	32	3	2.3E-02	3.7E-01	9.5E-01	1.1E+01	APD-SD-38-01	May-96	Yes	9.5E-01
4A	VOC	Chloroethane	75-00-3	32	2	2.4E-02	7.1E-02	1.7E-01	4.0E-02	ACS-SD-10-01	May-90	Yes	4.0E-02
4A	VOC	Chloroform	67-66-3	32	2	2.0E-03	6.9E-02	1.7E-01	2.0E-03	ACS-SD-03-01	Jul-89	Yes	2.0E-03
4A	VOC	Methylene Chloride	75-09-2	32	2	6.0E-03	7.6E-02	1.8E-01	4.4E-02	ACS-SD-07A-01	Jul-89	Yes	4.4E-02
4A	VOC	Toluene	108-88-3	32	4	5.0E-03	7.3E-02	1.7E-01	1.1E-01	ACS-SD-04-01	Jul-89	Yes	1.1E-01
4A	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	26	5	5.4E-02	5.9E-01	9.0E-01	1.8E+00	ACS-SD-12-01	May-90	Yes	9.0E-01
4A	SVOC	2-Methylnaphthalene	91-57-6	26	3	5.5E-02	4.8E-01	7.6E-01	3.8E-01	ACS-SD-07A-01	Jul-89	Yes	3.8E-01
4A	SVOC	4-Methylphenol	106-44-5	26	2	1.0E-01	4.6E-01	7.4E-01	1.1E-01	APD-SD-35-01	May-96	Yes	1.1E-01
4A	SVOC	Acenaphthylene	208-96-8	26	2	1.1E-01	4.6E-01	7.5E-01	3.7E-01	SD22-AVG	May-96	Yes	3.7E-01
4A	SVOC	Anthracene	120-12-7	26	3	6.9E-02	4.6E-01	7.4E-01	2.7E-01	SD22-AVG	May-96	Yes	2.7E-01
4A	SVOC	Benzo(a)anthracene	56-55-3	26	9	7.1E-02	4.6E-01	7.5E-01	9.2E-01	SD22-AVG	May-96	Yes	7.5E-01
4A	SVOC	Benzo(a)pyrene	50-32-8	26	10	7.3E-02	4.7E-01	7.6E-01	1.2E+00	SD22-AVG	May-96	Yes	7.6E-01
4A	SVOC	Benzo(b)fluoranthene	205-99-2	26	13	7.3E-02	5.3E-01	8.3E-01	1.5E+00	ACS-SD-07A-01	Jul-89	Yes	8.3E-01
4A	SVOC	Benzo(g,h,i)perylene	191-24-2	26	5	1.2E-01	4.6E-01	7.4E-01	5.5E-01	ACS-SD-07A-01	Jul-89	Yes	5.5E-01
4A	SVOC	Benzo(k)fluoranthene	207-08-9	26	9	7.3E-02	5.3E-01	8.2E-01	1.5E+00	ACS-SD-07A-01	Jul-89	Yes	8.2E-01
4A	SVOC	Benzoic Acid	65-85-0	9	4	3.8E-01	7.5E-01	9.0E-01	1.2E+00	ACS-SD-07A-01	Jul-89	Yes	9.0E-01
4A	SVOC	Chrysene	218-01-9	26	12	6.4E-02	4.7E-01	7.6E-01	1.1E+00	SD22-AVG	May-96	Yes	7.6E-01
4A	SVOC	Di-n-butylphthalate	84-74-2	26	3	9.4E-02	4.7E-01	7.6E-01	1.0E+00	APD-SD-21-01	May-96	Yes	7.6E-01
4A	SVOC	Dibenzo(a,h)anthracene	53-70-3	26	2	2.0E-01	4.8E-01	7.6E-01	3.7E-01	SD22-AVG	May-96	Yes	3.7E-01
4A	SVOC	Dibenzofuran	132-64-9	26	1	2.3E-01	4.8E-01	7.6E-01	2.3E-01	ACS-SD-07A-01	Jul-89	No (f)	
4A	SVOC	Diethylphthalate	84-66-2	26	1	1.9E+00	5.3E-01	8.3E-01	1.9E+00	APD-SD-38-01	May-96	No (f)	
4A	SVOC	Fluoranthene	206-44-0	26	14	8.4E-02	4.6E-01	7.5E-01	8.2E-01	ACS-SD-07A-01	Jul-89	Yes	7.5E-01
4A	SVOC	Hexachlorobenzene	118-74-1	26	1	1.4E-01	4.7E-01	7.6E-01	1.4E-01	ACS-SD-16-01	Jul-90	No (f)	
4A	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	26	10	4.6E-02	4.1E-01	7.0E-01	5.6E-01	SD22-AVG	May-96	Yes	5.6E-01
4A	SVOC	Isophorone	78-59-1	26	1	4.2E-02	4.6E-01	7.5E-01	4.2E-02	APD-SD-26-01	May-96	No (f)	
4A	SVOC	Naphthalene	91-20-3	26	3	5.9E-02	4.8E-01	7.6E-01	4.2E-01	ACS-SD-07A-01	Jul-89	Yes	4.2E-01
4A	SVOC	Pentachlorophenol	87-86-5	26	1	2.3E-01	1.3E+00	1.9E+00	2.3E-01	ACS-SD-07B-01	Jul-89	No (f)	
4A	SVOC	Phenanthrene	85-01-8	26	9	6.6E-02	4.5E-01	7.4E-01	6.6E-01	ACS-SD-07A-01	Jul-89	Yes	6.6E-01
4A	SVOC	Phenol	108-95-2	26	1	5.8E-02	4.7E-01	7.5E-01	5.8E-02	ACS-SD-12-01	May-90	No (f)	
4A	SVOC	Pyrene	129-00-0	26	12	6.3E-02	4.7E-01	7.5E-01	8.1E-01	SD22-AVG	May-96	Yes	7.5E-01
4A	SVOC	bis(2-Chloroethyl) ether	111-44-4	26	2	2.0E-01	4.7E-01	7.6E-01	4.3E-01	ACS-SD-10-01	May-90	Yes	4.3E-01
4A	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	26	13	1.0E-01	7.2E-01	1.1E+00	4.6E+00	APD-SD-33-01	May-96	Yes	1.1E+00
4A	P/PCB	Aroclor-1248	12672-29-6	107	75	1.8E-03	2.8E+00	4.7E+00	9.9E+01	APD-SD-T2 (C)	Nov-96	Yes	4.7E+00

Table 2-6 Summary of Constituents in Sediment Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
4A	P/PCB	Aroclor-1254	11097-69-1	107	88	2.8E-03	5.9E+00	9.9E+00	2.0E+02	APD-SD-T2 (C)	Nov-96	Yes	9.9E+00
4A	P/PCB	Aroclor-1260	11096-82-5	107	75	6.9E-03	2.2E+00	3.5E+00	6.0E+01	APD-SD-T2 (C)	Nov-96	Yes	3.5E+00
4A	INORG	Aluminum	7429-90-5	9	9	2.5E+03	6.3E+03	7.7E+03	1.0E+04	ACS-SD-16-01	Jul-90	No (e)	
4A	INORG	Antimony	7440-36-0	4	1	2.8E+00	1.4E+00	2.5E+00	2.8E+00	ACS-SD-16-01	Jul-90	Yes	2.5E+00
4A	INORG	Arsenic	7440-38-2	28	23	1.1E+00	8.1E+00	1.2E+01	2.9E+01	APD-SD-21-01	May-96	Yes	1.2E+01
4A	INORG	Barium	7440-39-3	9	3	6.3E+01	4.7E+01	6.5E+01	8.0E+01	ACS-SD-16-01	Jul-90	Yes	6.5E+01
4A	INORG	Beryllium	7440-41-7	9	9	8.0E-02	4.6E-01	6.2E-01	1.0E+00	ACS-SD-04-01	Jul-89	Yes	6.2E-01
4A	INORG	Cadmium	7440-43-9	28	26	4.5E-01	3.3E+00	4.2E+00	1.1E+01	APD-SD-21-01	May-96	Yes	4.2E+00
4A	INORG	Calcium	7440-70-2	9	9	7.6E+02	9.4E+03	2.1E+04	5.8E+04	ACS-SD-07C-01	Jul-89	No (e)	
4A	INORG	Chromium (total)	7440-47-3	28	28	4.3E+00	3.6E+01	5.9E+01	2.9E+02	APD-SD-33-01	May-96	Yes	5.9E+01
4A	INORG	Copper	7440-50-8	28	26	3.7E+00	4.3E+01	7.4E+01	3.6E+02	ACS-SD-16-01	Jul-90	Yes	7.4E+01
4A	INORG	Iron	7439-89-6	10	10	9.5E+01	9.2E+03	1.3E+04	2.1E+04	ACS-SD-07A-01	Jul-89	No (e)	
4A	INORG	Lead	7439-92-1	27	27	3.6E+00	9.6E+01	2.2E+02	7.0E+02	ACS-SD-16-01	Jul-90	Yes	2.2E+02
4A	INORG	Magnesium	7439-95-4	9	7	4.4E+02	3.2E+03	7.7E+03	2.2E+04	ACS-SD-07C-01	Jul-89	No (e)	
4A	INORG	Manganese	7439-96-5	9	9	2.3E+01	1.4E+02	2.3E+02	4.0E+02	ACS-SD-07C-01	Jul-89	Yes	2.3E+02
4A	INORG	Mercury	7439-97-6	56	30	8.0E-02	7.7E-01	1.2E+00	8.9E+00	APD-SD-33-01	May-96	Yes	1.2E+00
4A	INORG	Nickel	7440-02-0	9	3	1.6E+01	1.2E+01	1.7E+01	2.7E+01	ACS-SD-07C-01	Jul-89	Yes	1.7E+01
4A	INORG	Potassium	7440-09-7	9	9	2.0E+02	4.5E+02	7.3E+02	1.6E+03	ACS-SD-07C-01	Jul-89	No (e)	
4A	INORG	Selenium	7782-49-2	9	3	8.7E-01	5.4E-01	7.7E-01	1.1E+00	ACS-SD-12-01	May-90	Yes	7.7E-01
4A	INORG	Thallium	7440-28-0	9	1	1.4E+00	7.7E-01	9.5E-01	1.4E+00	ACS-SD-16-01	Jul-90	Yes	9.5E-01
4A	INORG	Vanadium	7440-62-2	9	9	5.1E+00	2.5E+01	3.4E+01	4.8E+01	ACS-SD-04-01	Jul-89	Yes	3.4E+01
4A	INORG	Zinc	7440-66-6	28	28	6.4E+00	1.4E+02	1.8E+02	4.7E+02	APD-SD-26-01	May-96	Yes	1.8E+02
4B	VOC	1,2-Dichloroethene (total)	540-59-0	4	1	1.2E-02	1.0E-02	1.4E-02	1.2E-02	APD-SD-30-01	May-96	Yes	1.2E-02
4B	VOC	Acetone	67-64-1	4	2	1.4E-02	1.6E-02	2.9E-02	2.5E-02	APD-SD-30-01	May-96	Yes	2.5E-02
4B	SVOC	2-Methylnaphthalene	91-57-6	6	1	3.1E-02	3.3E-01	5.1E-01	3.1E-02	ACS-ST01-001	Sep-97	Yes	3.1E-02
4B	SVOC	Acenaphthylene	208-96-8	6	3	5.2E-02	2.3E-01	3.4E-01	2.8E-01	SD29-AVG	May-96	Yes	2.8E-01
4B	SVOC	Anthracene	120-12-7	6	3	6.8E-02	2.3E-01	3.4E-01	2.6E-01	SD29-AVG	May-96	Yes	2.6E-01
4B	SVOC	Benzo(a)anthracene	56-55-3	6	5	4.7E-02	2.0E-01	7.8E-01	3.6E-01	SD29-AVG	May-96	Yes	3.6E-01
4B	SVOC	Benzo(a)pyrene	50-32-8	6	5	6.9E-02	2.5E-01	3.6E-01	4.0E-01	SD29-AVG	May-96	Yes	3.6E-01
4B	SVOC	Benzo(b)fluoranthene	205-99-2	6	6	1.0E-01	2.6E-01	3.7E-01	4.4E-01	SD29-AVG	May-96	Yes	3.7E-01
4B	SVOC	Benzo(g,h,i)perylene	191-24-2	6	4	7.7E-02	2.6E-01	3.4E-01	3.0E-01	SD29-AVG	May-96	Yes	3.0E-01
4B	SVOC	Benzo(k)fluoranthene	207-08-9	6	4	5.8E-02	2.9E-01	3.9E-01	4.1E-01	SD29-AVG	May-96	Yes	3.9E-01
4B	SVOC	Carbazole	86-74-8	6	1	3.6E-02	3.3E-01	5.1E-01	3.6E-02	ACS-ST01-001	Sep-97	Yes	3.6E-02
4B	SVOC	Chrysene	218-01-9	6	6	7.9E-02	2.1E-01	3.1E-01	3.9E-01	SD29-AVG	May-96	Yes	3.1E-01
4B	SVOC	Di-n-butylphthalate	84-74-2	6	1	8.4E-02	3.3E-01	9.8E-01	8.4E-02	ACS-ST11-101	Sep-97	Yes	8.4E-02
4B	SVOC	Dibenzo(a,h)anthracene	53-70-3	6	3	6.3E-02	2.4E-01	3.5E-01	2.9E-01	SD29-AVG	May-96	Yes	2.9E-01
4B	SVOC	Fluoranthene	206-44-0	6	6	7.0E-02	2.3E-01	3.4E-01	4.0E-01	SD29-AVG	May-96	Yes	3.4E-01
4B	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	6	5	5.4E-02	2.0E-01	3.0E-01	3.4E-01	SD29-AVG	May-96	Yes	3.0E-01
4B	SVOC	Isophorone	78-59-1	6	1	4.2E-02	3.2E-01	5.0E-01	4.2E-02	ACS-ST11-101	Sep-97	Yes	4.2E-02
4B	SVOC	Naphthalene	91-20-3	6	1	2.5E-02	3.3E-01	5.1E-01	2.5E-02	ACS-ST01-001	Sep-97	Yes	2.5E-02
4B	SVOC	Phenanthrene	85-01-8	6	4	3.6E-02	1.6E-01	7.0E-01	1.5E-01	ACS-ST02-001	Sep-97	Yes	1.5E-01
4B	SVOC	Pyrene	129-00-0	6	6	1.0E-01	2.3E-01	3.4E-01	3.9E-01	SD29-AVG	May-96	Yes	3.4E-01
4B	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6	4	4.9E-01	1.2E+00	7.1E+00	4.0E+00	ACS-ST11-101	Sep-97	Yes	4.0E+00
4B	P/PCB	4,4'-DDD	72-54-8	6	1	7.8E-02	3.3E-02	6.0E-02	7.8E-02	ACS-ST11-101	Sep-97	Yes	6.0E-02
4B	P/PCB	4,4'-DDE	72-55-9	6	1	2.9E-01	6.8E-02	2.0E+01	2.9E-01	ACS-ST11-101	Sep-97	Yes	2.9E-01
4B	P/PCB	4,4'-DDT	50-29-3	6	1	2.4E-01	6.0E-02	1.3E+01	2.4E-01	ACS-ST11-101	Sep-97	Yes	2.4E-01
4B	P/PCB	Aroclor-1248	12672-29-6	6	3	7.4E-02	2.8E-01	9.4E-01	2.2E-01	APD-SD-28-01	May-96	Yes	2.2E-01
4B	P/PCB	Aroclor-1254	11097-69-1	6	4	4.2E-01	2.0E+00	4.7E+00	8.8E+00	ACS-ST11-101	Sep-97	Yes	4.7E+00
4B	P/PCB	Aroclor-1260	11096-82-5	6	3	3.9E-01	5.1E-01	9.9E-01	9.7E-01	APD-SD-28-01	May-96	Yes	9.7E-01
4B	P/PCB	Endosulfan I	959-98-8	6	1	3.9E-01	7.5E-02	2.0E-01	3.9E-01	ACS-ST11-101	Sep-97	Yes	2.0E-01
4B	P/PCB	Endosulfan sulfate	1031-07-8	6	1	6.0E-02	3.0E-02	5.3E-02	6.0E-02	ACS-ST11-101	Sep-97	Yes	5.3E-02

Table 2-6 Summary of Constituents in Sediment Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
4B	P/PCB	Endrin	72-20-8	6	1	1.5E-01	4.5E-02	9.2E-02	1.5E-01	ACS-ST11-101	Sep-97	Yes	9.2E-02
4B	P/PCB	Heptachlor	76-44-8	6	1	6.2E-02	2.0E-02	4.0E-02	6.2E-02	ACS-ST11-101	Sep-97	Yes	4.0E-02
4B	P/PCB	Methoxychlor	72-43-5	6	1	2.9E-01	1.5E-01	2.6E-01	2.9E-01	ACS-ST11-101	Sep-97	Yes	2.6E-01
4B	P/PCB	alpha-Chlordane	5103-71-9	6	1	2.2E-01	4.7E-02	1.2E-01	2.2E-01	ACS-ST11-101	Sep-97	Yes	1.2E-01
4B	P/PCB	beta-BHC	319-85-7	6	1	2.6E-02	1.4E-02	2.5E-02	2.6E-02	ACS-ST11-101	Sep-97	Yes	2.5E-02
4B	P/PCB	gamma-BHC	58-89-9	6	1	2.9E-02	1.5E-02	2.6E-02	2.9E-02	ACS-ST11-101	Sep-97	Yes	2.6E-02
4B	P/PCB	gamma-Chlordane	5103-74-2	6	1	4.8E-02	1.8E-02	3.4E-02	4.8E-02	ACS-ST11-101	Sep-97	Yes	3.4E-02
4B	INORG	Arsenic	7440-38-2	3	3	3.3E+00	5.3E+00	2.9E+01	7.6E+00	APD-SD-28-01	May-96	Yes	7.6E+00
4B	INORG	Cadmium	7440-43-9	3	3	2.0E+00	3.6E+00	7.0E+00	5.9E+00	APD-SD-28-01	May-96	Yes	5.9E+00
4B	INORG	Chromium (total)	7440-47-3	3	3	9.9E+00	2.1E+01	6.3E+02	3.3E+01	APD-SD-28-01	May-96	Yes	3.3E+01
4B	INORG	Copper	7440-50-8	3	3	9.4E+00	2.3E+01	2.1E+03	3.7E+01	APD-SD-28-01	May-96	Yes	3.7E+01
4B	INORG	Lead	7439-92-1	3	3	4.8E+01	1.1E+02	2.0E+02	1.4E+02	APD-SD-28-01	May-96	Yes	1.4E+02
4B	INORG	Mercury	7439-97-6	3	3	1.1E-01	2.5E-01	2.8E+01	4.5E-01	APD-SD-28-01	May-96	Yes	4.5E-01
4B	INORG	Zinc	7440-66-6	3	3	7.9E+01	1.7E+02	1.2E+04	3.0E+02	APD-SD-28-01	May-96	Yes	3.0E+02
6	VOC	2-Butanone	78-93-3	3	1	1.1E-02	7.0E-03	1.3E-02	1.1E-02	ACS-SD-14-01	May-90	Yes	1.1E-02
6	VOC	Chloroform	67-66-3	3	1	8.0E-03	4.3E-03	9.7E-03	8.0E-03	ACS-SD-06-01	Jul-89	Yes	8.0E-03
6	SVOC	4-Methylphenol	106-44-5	10	2	2.6E-02	2.7E-01	3.5E-01	2.7E-01	ACS-SD-13-01	May-90	Yes	2.7E-01
6	SVOC	Acenaphthene	83-32-9	10	1	2.3E-01	4.4E-01	5.9E-01	2.3E-01	ACS-ST08-001	Sep-97	Yes	2.3E-01
6	SVOC	Acenaphthylene	208-96-8	10	1	3.8E-02	2.6E-01	3.4E-01	3.8E-02	ACS-ST05-001	Sep-97	Yes	3.8E-02
6	SVOC	Anthracene	120-12-7	10	3	5.3E-02	2.4E-01	4.2E-01	6.1E-01	ACS-ST08-001	Sep-97	Yes	4.2E-01
6	SVOC	Benzo(a)anthracene	56-55-3	10	7	4.8E-02	5.5E-01	1.1E+00	3.2E+00	ACS-ST08-001	Sep-97	Yes	1.1E+00
6	SVOC	Benzo(a)pyrene	50-32-8	10	7	2.6E-02	6.3E-01	4.0E+00	4.0E+00	ACS-ST08-001	Sep-97	Yes	4.0E+00
6	SVOC	Benzo(b)fluoranthene	205-99-2	10	8	2.7E-02	7.4E-01	5.9E+00	4.8E+00	ACS-ST08-001	Sep-97	Yes	4.8E+00
6	SVOC	Benzo(g,h,i)perylene	191-24-2	10	5	3.0E-02	5.3E-01	3.0E+00	3.2E+00	ACS-ST08-001	Sep-97	Yes	3.0E+00
6	SVOC	Benzo(k)fluoranthene	207-08-9	10	8	4.6E-02	5.8E-01	2.4E+00	3.2E+00	ACS-ST08-001	Sep-97	Yes	2.4E+00
6	SVOC	Benzoic Acid	65-85-0	3	2	2.0E-01	5.8E-01	1.1E+00	7.3E-01	ACS-SD-06-01	Jul-89	Yes	7.3E-01
6	SVOC	Carbazole	86-74-8	7	2	7.5E-02	2.8E-01	4.0E-01	6.0E-01	ACS-ST08-001	Sep-97	Yes	4.0E-01
6	SVOC	Chrysene	218-01-9	10	7	3.3E-02	6.8E-01	1.4E+00	4.4E+00	ACS-ST08-001	Sep-97	Yes	1.4E+00
6	SVOC	Di-n-butylphthalate	84-74-2	10	2	4.4E-02	2.1E-01	2.8E-01	6.6E-02	ACS-ST09-001	Sep-97	Yes	6.6E-02
6	SVOC	Dibenzo(a,h)anthracene	53-70-3	10	3	3.4E-02	2.8E-01	4.2E-01	9.3E-01	ACS-ST08-001	Sep-97	Yes	4.2E-01
6	SVOC	Dibenzofuran	132-64-9	10	1	1.1E-01	2.4E-01	3.2E-01	1.1E-01	ACS-ST08-001	Sep-97	Yes	1.1E-01
6	SVOC	Fluoranthene	206-44-0	10	7	3.7E-02	1.3E+00	2.9E+00	9.2E+00	ACS-ST08-001	Sep-97	Yes	2.9E+00
6	SVOC	Fluorene	86-73-7	10	1	2.3E-01	2.5E-01	3.1E-01	2.3E-01	ACS-ST08-001	Sep-97	Yes	2.3E-01
6	SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	10	4	3.7E-02	4.7E-01	9.2E-01	2.6E+00	ACS-ST08-001	Sep-97	Yes	9.2E-01
6	SVOC	Naphthalene	91-20-3	10	1	2.6E-01	2.8E-01	3.5E-01	2.6E-01	ST04-AVG	Sep-97	Yes	2.6E-01
6	SVOC	Phenanthrene	85-01-8	10	7	3.1E-02	6.4E-01	1.5E+00	4.7E+00	ACS-ST08-001	Sep-97	Yes	1.5E+00
6	SVOC	Pyrene	129-00-0	10	7	3.6E-02	1.0E+00	2.2E+00	6.8E+00	ACS-ST08-001	Sep-97	Yes	2.2E+00
6	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	10	2	1.8E-01	3.4E-01	4.6E-01	8.2E-01	ACS-SD-14-01	May-90	Yes	4.6E-01
6	P/PCB	Heptachlor	76-44-8	10	1	2.5E-03	1.2E-02	1.7E-02	2.5E-03	ACS-ST08-001	Sep-97	Yes	2.5E-03
6	INORG	Aluminum	7429-90-5	3	3	6.7E+03	1.1E+04	6.3E+04	1.6E+04	ACS-SD-14-01	May-90	No (e)	
6	INORG	Antimony	7440-36-0	3	1	5.1E+00	2.7E+00	1.5E+03	5.1E+00	ACS-SD-06-01	Jul-89	Yes	5.1E+00
6	INORG	Arsenic	7440-38-2	3	3	5.9E+00	1.2E+01	2.7E+01	2.3E+01	ACS-SD-13-01	May-90	Yes	2.3E+01
6	INORG	Barium	7440-39-3	3	2	7.4E+01	8.5E+01	1.2E+02	1.1E+02	ACS-SD-14-01	May-90	Yes	1.1E+02
6	INORG	Beryllium	7440-41-7	3	3	6.2E-01	6.8E-01	7.8E-01	7.2E-01	ACS-SD-06-01	Jul-89	Yes	7.2E-01
6	INORG	Cadmium	7440-43-9	3	3	7.4E-01	8.1E-01	9.5E-01	9.0E-01	ACS-SD-13-01	May-90	Yes	9.0E-01
6	INORG	Calcium	7440-70-2	3	3	7.6E+03	3.2E+04	6.7E+04	4.4E+04	ACS-SD-06-01	Jul-89	No (e)	
6	INORG	Chromium (total)	7440-47-3	3	3	1.3E+01	2.3E+01	3.9E+01	3.2E+01	ACS-SD-14-01	May-90	Yes	3.2E+01
6	INORG	Copper	7440-50-8	3	3	2.7E+01	3.3E+01	5.8E+01	4.2E+01	ACS-SD-14-01	May-90	Yes	4.2E+01
6	INORG	Iron	7439-89-6	3	3	1.9E+04	2.7E+04	6.1E+04	3.5E+04	ACS-SD-14-01	May-90	No (e)	
6	INORG	Lead	7439-92-1	3	3	5.9E+01	7.1E+01	9.9E+01	9.0E+01	ACS-SD-06-01	Jul-89	Yes	9.0E+01
6	INORG	Magnesium	7439-95-4	3	3	1.2E+03	1.2E+04	2.9E+04	2.0E+04	ACS-SD-14-01	May-90	No (e)	

Table 2-6 Summary of Constituents in Sediment Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/kg)	Arithmetic Mean[b] (mg/kg)	UCL[c] (mg/kg)	Maximum Detected (mg/kg)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/kg)
6	INORG	Manganese	7439-96-5	3	3	1.1E+02	2.9E+02	5.6E+02	4.2E+02	ACS-SD-14-01	May-90	Yes	4.2E+02
6	INORG	Nickel	7440-02-0	3	2	3.1E+01	2.9E+01	5.1E+01	4.1E+01	ACS-SD-06-01	Jul-89	Yes	4.1E+01
6	INORG	Potassium	7440-09-7	3	3	5.5E+02	2.0E+03	4.0E+03	2.9E+03	ACS-SD-14-01	May-90	No (e)	
6	INORG	Vanadium	7440-62-2	3	3	2.7E+01	3.1E+01	4.0E+01	3.5E+01	ACS-SD-13-01	May-90	Yes	3.5E+01
6	INORG	Zinc	7440-66-6	3	3	1.7E+02	2.1E+02	3.9E+02	2.7E+02	ACS-SD-14-01	May-90	Yes	2.7E+02

(a) Table only includes constituents that were detected at least once in media/area/depth.
(b) The arithmetic mean was calculated for >1 valid sample and assumed the concentration is equal to one-half the detection limit for non-detects.
(c) UCL = 95% Upper Confidence Limit on the arithmetic mean. The UCL was calculated for >1 valid sample. The UCL was calculated assuming the concentration is equal to one-half the detection limit for non-detects.
(d) The UCL was used as the exposure point concentration unless it was greater than the maximum, in which case, the maximum detected concentration was used.
(e) Chemical is not retained for risk calculations because it is a major earth element and does not have a toxicity value. See text.
(f) Chemical is not retained for risk calculations because it was detected in less than 5% of the samples from this media/area.

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean[b] (mg/L)	UCL[c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/L)	Conc Used outdoor air[h] (mg/L)
1	UPPER	VOC	1,1-Dichloroethane	75-34-3	11	3	6.0E-03	9.7E-02	2.6E-01	2.6E-02	MW05-01-1994	Dec-94	Yes	2.6E-02	2.6E-02
1	UPPER	VOC	1,2-Dichloroethene (total)	540-59-0	11	2	3.0E-03	9.5E-02	2.6E-01	1.4E-02	MW05-01-1994	Dec-94	Yes	1.4E-02	1.4E-02
1	UPPER	VOC	4-Methyl-2-pentanone	108-10-1	11	1	6.0E-03	9.6E-02	2.6E-01	6.0E-03	MW05-01-1994	Dec-94	Yes	6.0E-03	6.0E-03
1	UPPER	VOC	Benzene	71-43-2	11	10	1.0E-03	1.2E+01	1.7E+06	1.0E+02	MW03-02-1990	May-90	Yes	1.0E+02	1.0E+02
1	UPPER	VOC	Chlorobenzene	108-90-7	11	4	2.0E-03	1.1E-01	2.7E-01	9.6E-02	MW05-01-1989	Aug-89	Yes	9.6E-02	9.6E-02
1	UPPER	VOC	Chloroethane	75-00-3	11	9	2.5E-02	3.6E-01	1.5E+01	1.9E+00	MW03-02-1990	May-90	Yes	1.9E+00	1.9E+00
1	UPPER	VOC	Chloromethane	74-87-3	11	1	6.8E-02	1.0E-01	2.6E-01	6.8E-02	MW03-02-1990	May-90	Yes	6.8E-02	6.8E-02
1	UPPER	VOC	Ethyl Benzene	100-41-4	11	5	3.0E-03	3.1E-01	5.5E-01	1.1E+00	MW05-02-1990	May-90	Yes	1.1E+00	5.5E-01 (h)
1	UPPER	VOC	Methylene Chloride	75-09-2	11	1	1.0E-03	9.7E-02	2.6E-01	1.0E-03	MW02-02-1990	May-90	Yes	1.0E-03	1.0E-03
1	UPPER	VOC	Toluene	108-88-3	11	3	6.0E-03	3.0E-01	7.0E-01	2.3E+00	MW03-02-1990	May-90	Yes	2.3E+00	7.0E-01 (h)
1	UPPER	VOC	Vinyl Chloride	75-01-4	11	1	1.6E-02	9.6E-02	2.6E-01	1.6E-02	MW05-01-1994	Dec-94	Yes	1.6E-02	1.6E-02
1	UPPER	VOC	Xylenes (total)	1330-20-7	11	5	8.3E-02	4.3E-01	9.2E-01	3.0E+00	MW03-02-1990	May-90	Yes	3.0E+00	9.2E-01 (h)
1	UPPER	SVOC	1,2-Dichlorobenzene	95-50-1	11	5	1.5E-02	1.6E-02	2.4E-02	5.1E-02	MW03-01-1994	Dec-94	Yes	5.1E-02	2.4E-02 (h)
1	UPPER	SVOC	1,3-Dichlorobenzene	541-73-1	11	2	2.0E-03	5.0E-03	6.1E-03	3.0E-03	MW05-02-1990	May-90	Yes	3.0E-03	3.0E-03
1	UPPER	SVOC	1,4-Dichlorobenzene	106-46-7	11	5	3.0E-03	5.8E-03	7.1E-03	1.0E-02	MW05-02-1990	May-90	Yes	1.0E-02	7.1E-03 (h)
1	UPPER	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	11	4	3.4E-02	4.5E-02	9.3E-02	3.0E-01	MW03-01-1989	Aug-89	Yes	3.0E-01	9.3E-02 (h)
1	UPPER	SVOC	2,4-Dimethylphenol	105-67-9	11	4	5.0E-03	1.5E-02	3.2E-02	1.1E-01	MW03-02-1990	May-90	Yes	1.1E-01	3.2E-02 (h)
1	UPPER	SVOC	2-Methylnaphthalene	91-57-6	11	2	9.0E-03	7.8E-03	1.1E-02	2.7E-02	MW05-02-1990	May-90	Yes	2.7E-02	1.1E-02 (h)
1	UPPER	SVOC	2-Methylphenol	95-48-7	11	1	1.3E-02	6.2E-03	7.7E-03	1.3E-02	MW03-01-1989	Aug-89	Yes	1.3E-02	7.7E-03 (h)
1	UPPER	SVOC	4-Chloro-3-methylphenol	59-50-7	11	2	2.0E-03	5.1E-03	6.0E-03	9.0E-03	MW03-01-1994	Dec-94	Yes	9.0E-03	6.0E-03 (h)
1	UPPER	SVOC	4-Methylphenol	106-44-5	11	3	2.0E-03	1.5E-02	2.9E-02	7.8E-02	MW03-02-1990	May-90	Yes	7.8E-02	2.9E-02 (h)
1	UPPER	SVOC	Benzoic Acid	65-85-0	8	1	1.3E-02	2.4E-02	2.6E-02	1.3E-02	MW05-01-1989	Aug-89	Yes	1.3E-02	1.3E-02
1	UPPER	SVOC	Di-n-octylphthalate	117-84-0	11	1	2.1E-02	6.9E-03	9.6E-03	2.1E-02	MW05-01-1994	Dec-94	Yes	2.1E-02	9.6E-03 (h)
1	UPPER	SVOC	Diethylphthalate	84-66-2	11	3	3.0E-03	5.3E-03	6.0E-03	9.0E-03	MW03-02-1990	May-90	Yes	9.0E-03	6.0E-03 (h)
1	UPPER	SVOC	Naphthalene	91-20-3	11	5	2.0E-03	1.6E-02	3.0E-02	7.1E-02	MW05-01-1989	Aug-89	Yes	7.1E-02	3.0E-02 (h)
1	UPPER	SVOC	Phenol	108-95-2	11	5	3.0E-03	2.9E-02	6.7E-02	2.4E-01	MW03-02-1990	May-90	Yes	2.4E-01	6.7E-02 (h)
1	UPPER	SVOC	bis(2-Chloroethyl) ether	111-44-4	11	7	4.0E-03	4.1E-02	7.4E-02	1.6E-01	MW03-01-1989	Aug-89	Yes	1.6E-01	7.4E-02 (h)
1	UPPER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	11	3	2.0E-03	5.0E-03	6.1E-03	5.0E-03	MW03-01-1989	Aug-89	Yes	5.0E-03	5.0E-03
1	UPPER	P/PCB	Aroclor-1248	12672-29-6	11	2	1.4E-03	6.1E-04	1.0E-03	2.6E-03	MW04-01-1989	Aug-89	Yes	2.6E-03	1.0E-03 (h)
1	UPPER	INORG	Aluminum	7429-90-5	8	2	2.5E-01	1.4E-01	1.9E-01	2.8E-01	MW02-01-1989	Aug-89	No (e)		
1	UPPER	INORG	Arsenic	7440-38-2	11	10	4.1E-03	2.2E-02	3.3E-02	5.7E-02	MW05-01-1994	Dec-94	Yes	5.7E-02	3.3E-02 (h)
1	UPPER	INORG	Barium	7440-39-3	8	7	2.5E-01	3.8E-01	7.3E-01	7.9E-01	MW05-02-1990	May-90	Yes	7.9E-01	7.3E-01 (h)
1	UPPER	INORG	Cadmium	7440-43-9	8	1	3.1E-03	5.1E-04	1.2E-03	3.1E-03	MW04-01-1989	Aug-89	Yes	3.1E-03	1.2E-03 (h)
1	UPPER	INORG	Calcium	7440-70-2	8	8	1.7E+02	2.0E+02	2.1E+02	2.2E+02	MW05-02-1990	May-90	No (e)		
1	UPPER	INORG	Cyanide (total)	57-12-5	8	1	1.0E-02	5.6E-03	6.8E-03	1.0E-02	MW04-01-1989	Aug-89	Yes	1.0E-02	6.8E-03 (h)
1	UPPER	INORG	Iron	7439-89-6	8	8	2.6E-01	2.0E+01	3.4E+01	5.1E+01	MW03-02-1990	May-90	No (e)		
1	UPPER	INORG	Magnesium	7439-95-4	8	5	1.8E+01	2.2E+01	2.7E+01	3.2E+01	MW04-01-1989	Aug-89	No (e)		
1	UPPER	INORG	Manganese	7439-96-5	11	11	4.7E-01	2.6E+00	3.4E+00	4.3E+00	MW04-01-1989	Aug-89	Yes	4.3E+00	3.4E+00 (h)
1	UPPER	INORG	Nickel	7440-02-0	8	2	4.8E-02	2.8E-02	3.7E-02	5.3E-02	MW03-01-1989	Aug-89	Yes	5.3E-02	3.7E-02 (h)
1	UPPER	INORG	Potassium	7440-09-7	8	8	4.9E+00	8.3E+00	1.1E+01	1.5E+01	MW03-01-1989	Aug-89	No (e)		
1	UPPER	INORG	Selenium	7782-49-2	8	1	6.2E-03	1.7E-03	2.9E-03	6.2E-03	MW04-01-1989	Aug-89	Yes	6.2E-03	2.9E-03 (h)
1	UPPER	INORG	Sodium	7440-23-5	8	6	1.3E+01	1.4E+02	4.1E+03	4.4E+02	MW05-02-1990	May-90	No (e)		
1	UPPER	INORG	Thallium	7440-28-0	11	2	1.1E-03	1.9E-03	2.4E-03	3.6E-03	MW04-01-1994	Dec-94	Yes	3.6E-03	2.4E-03 (h)
1	UPPER	INORG	Vanadium	7440-62-2	8	5	2.4E-03	6.7E-03	1.1E-02	2.0E-02	MW03-01-1989	Aug-89	Yes	2.0E-02	1.1E-02 (h)
1	UPPER	INORG	Zinc	7440-66-6	8	7	1.1E-02	1.4E-01	2.7E-01	5.1E-01	MW04-01-1989	Aug-89	Yes	5.1E-01	2.7E-01 (h)
4B	UPPER	VOC	1,1-Dichloroethane	75-34-3	32	3	3.0E-04	7.8E-02	1.3E-01	6.0E-03	MW04-02-1990	May-90	Yes	6.0E-03	6.0E-03
4B	UPPER	VOC	1,2-Dichloroethane	107-06-2	32	3	2.0E-04	7.8E-02	1.3E-01	2.0E-03	MW11-02-1990	Jul-90	Yes	2.0E-03	2.0E-03
4B	UPPER	VOC	1,2-Dichloroethene (total)	540-59-0	24	4	2.0E-03	9.4E-02	1.7E-01	4.0E-03	MW39-02-1997	Jun-97	Yes	4.0E-03	4.0E-03
4B	UPPER	VOC	Benzene	71-43-2	32	22	1.0E-03	5.9E+00	1.1E+01	1.0E+02	MW03-02-1990	May-90	Yes	1.0E+02	1.1E+01 (h)
4B	UPPER	VOC	Bromodichloromethane	75-27-4	32	1	9.0E-04	7.8E-02	1.3E-01	9.0E-04	MW48-01-1997-EPA	Mar-97	No (f)		
4B	UPPER	VOC	Chloroethane	75-00-3	32	20	2.0E-03	3.1E-01	4.5E-01	1.9E+00	MW03-02-1990	May-90	Yes	1.9E+00	4.5E-01 (h)
4B	UPPER	VOC	Chloroform	67-66-3	32	1	1.0E-03	7.9E-02	1.4E-01	1.0E-03	MW48-01-1997-EPA	Mar-97	No (f)		
4B	UPPER	VOC	Chloromethane	74-87-3	32	3	2.0E-04	7.8E-02	1.3E-01	6.8E-02	MW03-02-1990	May-90	Yes	6.8E-02	6.8E-02
4B	UPPER	VOC	Ethyl Benzene	100-41-4	32	2	6.9E-01	9.3E-02	1.5E-01	7.8E-01	MW03-02-1990	May-90	Yes	7.8E-01	1.5E-01 (h)
4B	UPPER	VOC	Methylene Chloride	75-09-2	32	2	4.0E-02	8.9E-02	1.5E-01	7.0E-02	MW48-01-1996	Aug-96	Yes	7.0E-02	7.0E-02
4B	UPPER	VOC	Tetrachloroethene	127-18-4	29	1	1.0E-03	8.5E-02	1.5E-01	1.0E-03	MW11-02-1997	Jun-97	No (f)		
4B	UPPER	VOC	Toluene	108-88-3	32	2	2.0E-03	1.5E-01	2.8E-01	2.3E+00	MW03-02-1990	May-90	Yes	2.3E+00	2.8E-01 (h)

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean[b] (mg/L)	UCL[c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used In Calculations[d] (mg/L)	Conc Used outdoor air[h] (mg/L)
4B	UPPER	VOC	Vinyl Chloride	75-01-4	32	2	7.0E-04	7.8E-02	1.3E-01	9.0E-04	MW39-01-1996	Aug-96	Yes	9.0E-04	9.0E-04
4B	UPPER	VOC	Xylenes (total)	1330-20-7	32	2	7.5E-01	1.9E-01	3.6E-01	3.0E+00	MW03-02-1990	May-90	Yes	3.0E+00	3.6E-01 (h)
4B	UPPER	VOC	cis-1,2-Dichloroethene	156-59-2	8	2	1.0E-04	3.0E-02	6.4E-02	2.0E-04	MW11-04-1997	Dec-97	Yes	2.0E-04	2.0E-04
4B	UPPER	VOC	trans-1,2-Dichloroethene	156-60-5	8	3	1.0E-03	3.0E-02	6.5E-02	4.0E-03	MW39-01-1996	Aug-96	Yes	4.0E-03	4.0E-03
4B	UPPER	SVOC	1,2-Dichlorobenzene	95-50-1	33	2	2.3E-02	1.2E-02	1.8E-02	5.1E-02	MW03-01-1994	Dec-94	Yes	5.1E-02	1.8E-02 (h)
4B	UPPER	SVOC	1,4-Dichlorobenzene	106-46-7	36	2	3.0E-03	9.2E-03	1.3E-02	3.0E-03	MW03-01-1989	Aug-89	Yes	3.0E-03	3.0E-03
4B	UPPER	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	31	6	1.0E-02	1.7E-02	3.3E-02	3.0E-01	MW03-01-1989	Aug-89	Yes	3.0E-01	3.3E-02 (h)
4B	UPPER	SVOC	2,4-Dimethylphenol	105-67-9	28	3	5.0E-03	9.8E-03	1.6E-02	1.1E-01	MW03-02-1990	May-90	Yes	1.1E-01	1.6E-02 (h)
4B	UPPER	SVOC	2,6-Dinitrotoluene	606-20-2	31	1	9.0E-04	8.4E-03	1.1E-02	9.0E-04	MW48-01-1996	Aug-96	No (f)		
4B	UPPER	SVOC	2-Methylphenol	95-48-7	28	1	1.3E-02	6.4E-03	7.8E-03	1.3E-02	MW03-01-1989	Aug-89	No (f)		
4B	UPPER	SVOC	4-Chloro-3-methylphenol	59-50-7	28	1	9.0E-03	6.0E-03	7.4E-03	9.0E-03	MW03-01-1994	Dec-94	No (f)		
4B	UPPER	SVOC	4-Methylphenol	106-44-5	31	2	4.5E-02	9.6E-03	1.4E-02	7.8E-02	MW03-02-1990	May-90	Yes	7.8E-02	1.4E-02 (h)
4B	UPPER	SVOC	Anthracene	120-12-7	28	1	1.1E-02	6.1E-03	7.5E-03	1.1E-02	MW49-03-1997-AVG	Sep-97	No (f)		
4B	UPPER	SVOC	Diethylphthalate	84-66-2	28	3	3.0E-03	6.0E-03	7.4E-03	9.0E-03	MW03-02-1990	May-90	Yes	9.0E-03	7.4E-03 (h)
4B	UPPER	SVOC	Isophorone	78-59-1	31	5	1.0E-03	4.9E-03	5.6E-03	7.5E-03	MW49-02-1997-AVG	Jun-97	Yes	7.5E-03	5.6E-03 (h)
4B	UPPER	SVOC	Naphthalene	91-20-3	31	2	2.0E-03	5.6E-03	6.9E-03	3.0E-03	MW03-02-1990	May-90	Yes	3.0E-03	3.0E-03
4B	UPPER	SVOC	Phenol	108-95-2	31	18	3.0E-03	3.9E-02	5.7E-02	2.4E-01	MW03-02-1990	May-90	Yes	2.4E-01	5.7E-02 (h)
4B	UPPER	SVOC	bis(2-Chloroethyl) ether	111-44-4	31	12	1.0E-03	1.9E-02	3.1E-02	1.6E-01	MW03-01-1989	Aug-89	Yes	1.6E-01	3.1E-02 (h)
4B	UPPER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	31	6	2.0E-03	6.3E-03	7.6E-03	1.6E-02	MW49-03-1997-AVG	Sep-97	Yes	1.6E-02	7.6E-03 (h)
4B	UPPER	P/PCB	Aroclor-1248	12672-29-6	27	2	1.4E-03	4.9E-04	6.5E-04	2.6E-03	MW04-01-1989	Aug-89	Yes	2.6E-03	6.5E-04 (h)
4B	UPPER	INORG	Aluminum	7429-90-5	27	16	5.9E-02	4.1E-01	5.7E-01	1.6E+00	MW11-04-1997	Dec-97	No (e)		
4B	UPPER	INORG	Antimony	7440-36-0	25	2	1.5E-03	1.4E-03	1.9E-03	2.0E-03	MW49-01-1997	Apr-97	Yes	2.0E-03	1.9E-03 (h)
4B	UPPER	INORG	Arsenic	7440-38-2	30	17	1.8E-03	1.1E-02	1.6E-02	4.6E-02	MW03-01-1994	Dec-94	Yes	4.6E-02	1.6E-02 (h)
4B	UPPER	INORG	Barium	7440-39-3	27	25	1.7E-02	1.3E-01	1.6E-01	5.2E-01	MW03-01-1989	Aug-89	Yes	5.2E-01	1.6E-01 (h)
4B	UPPER	INORG	Beryllium	7440-41-7	30	2	1.1E-03	6.3E-04	8.4E-04	1.3E-03	MW48-01-1997-EPA	Mar-97	Yes	1.3E-03	8.4E-04 (h)
4B	UPPER	INORG	Cadmium	7440-43-9	27	2	3.2E-04	4.7E-04	6.6E-04	3.1E-03	MW04-01-1989	Aug-89	Yes	3.1E-03	6.6E-04 (h)
4B	UPPER	INORG	Calcium	7440-70-2	27	27	3.2E+01	1.0E+02	1.2E+02	2.2E+02	MW03-01-1989	Aug-89	No (e)		
4B	UPPER	INORG	Chromium (total)	7440-47-3	27	12	1.9E-03	3.7E-03	4.7E-03	1.1E-02	MW49-03-1997-AVG	Sep-97	Yes	1.1E-02	4.7E-03 (h)
4B	UPPER	INORG	Cobalt	7440-48-4	27	13	1.2E-03	7.4E-03	1.1E-02	3.5E-03	MW48-03-1997	Sep-97	Yes	3.5E-03	3.5E-03
4B	UPPER	INORG	Copper	7440-50-8	27	6	3.4E-03	6.6E-03	8.2E-03	2.2E-02	MW11-04-1997	Dec-97	Yes	2.2E-02	8.2E-03 (h)
4B	UPPER	INORG	Cyanide (total)	57-12-5	24	1	1.0E-02	5.2E-03	5.5E-03	1.0E-02	MW04-01-1989	Aug-89	No (f)		
4B	UPPER	INORG	Iron	7439-89-6	27	27	5.2E-01	1.6E+01	2.0E+01	5.1E+01	MW03-02-1990	May-90	No (e)		
4B	UPPER	INORG	Lead	7439-92-1	27	8	1.2E-03	2.2E-03	2.8E-03	7.7E-03	MW48-03-1997	Sep-97	Yes	7.7E-03	2.8E-03 (h)
4B	UPPER	INORG	Magnesium	7439-95-4	27	26	7.2E+00	1.6E+01	1.9E+01	3.2E+01	MW04-01-1989	Aug-89	No (e)		
4B	UPPER	INORG	Manganese	7439-96-5	30	30	1.3E-01	1.2E+00	1.6E+00	4.3E+00	MW04-01-1989	Aug-89	Yes	4.3E+00	1.6E+00 (h)
4B	UPPER	INORG	Mercury	7439-97-6	27	1	3.0E-04	1.2E-04	1.4E-04	3.0E-04	MW48-01-1997-EPA	Mar-97	No (f)		
4B	UPPER	INORG	Nickel	7440-02-0	27	16	4.5E-03	4.0E-02	8.4E-02	7.1E-01	MW39-01-1996	Aug-96	Yes	7.1E-01	8.4E-02 (h)
4B	UPPER	INORG	Potassium	7440-09-7	27	26	1.2E+00	5.2E+00	6.3E+00	1.5E+01	MW03-01-1989	Aug-89	No (e)		
4B	UPPER	INORG	Selenium	7782-49-2	27	1	6.2E-03	1.2E-03	1.5E-03	6.2E-03	MW04-01-1989	Aug-89	No (f)		
4B	UPPER	INORG	Sodium	7440-23-5	27	24	4.2E+00	5.5E+01	7.5E+01	2.5E+02	MW04-02-1990	May-90	No (e)		
4B	UPPER	INORG	Thallium	7440-28-0	30	4	1.0E-03	1.4E-03	1.6E-03	4.0E-03	MW48-01-1997	Mar-97	Yes	4.0E-03	1.6E-03 (h)
4B	UPPER	INORG	Vanadium	7440-62-2	27	15	1.4E-03	4.6E-03	6.4E-03	2.0E-02	MW11-04-1997	Dec-97	Yes	2.0E-02	6.4E-03 (h)
4B	UPPER	INORG	Zinc	7440-66-6	27	10	4.6E-03	5.0E-02	8.7E-02	5.1E-01	MW04-01-1989	Aug-89	Yes	5.1E-01	8.7E-02 (h)
5A	UPPER	VOC	1,1-Dichloroethane	75-34-3	14	3	3.0E-03	2.5E-02	3.9E-02	2.1E-02	MW06-01-1996	Nov-96	Yes	2.1E-02	--
5A	UPPER	VOC	1,2-Dichloroethane	107-06-2	14	1	3.0E-03	2.6E-02	3.9E-02	3.0E-03	MW06-03-1997	Sep-97	Yes	3.0E-03	--
5A	UPPER	VOC	1,2-Dichloroethene (total)	540-59-0	10	4	2.0E-03	2.6E-02	4.4E-02	2.6E-02	MW06-01-1996	Nov-96	Yes	2.6E-02	--
5A	UPPER	VOC	4-Methyl-2-pentanone	108-10-1	14	1	2.0E-03	5.1E-02	9.0E-02	2.0E-03	MW06-01-1997-EPA-AVG	Mar-97	Yes	2.0E-03	--
5A	UPPER	VOC	Benzene	71-43-2	14	14	3.3E-02	8.4E-01	1.2E+00	3.0E+00	MW06-01-1994	Dec-94	Yes	3.0E+00	--
5A	UPPER	VOC	Chlorobenzene	108-90-7	14	6	1.0E-03	2.4E-02	3.7E-02	4.2E-02	MW45-02-1997	Jun-97	Yes	4.2E-02	--
5A	UPPER	VOC	Chloroethane	75-00-3	14	14	3.3E-02	2.3E-01	3.3E-01	7.2E-01	MW06-01-1996	Nov-96	Yes	7.2E-01	--
5A	UPPER	VOC	Ethyl Benzene	100-41-4	14	7	1.0E-02	8.6E-02	7.4E-01	7.7E-01	MW06-01-1994	Dec-94	Yes	7.7E-01	--
5A	UPPER	VOC	Methylene Chloride	75-09-2	14	2	2.0E-03	3.1E-02	5.0E-02	1.7E-02	MW06-01-1996	Nov-96	Yes	1.7E-02	--
5A	UPPER	VOC	Vinyl Chloride	75-01-4	14	2	3.0E-03	2.6E-02	3.9E-02	4.0E-03	MW06-03-1997	Sep-97	Yes	4.0E-03	--
5A	UPPER	VOC	Xylenes (total)	1330-20-7	14	11	1.8E-02	3.6E-01	1.0E+01	3.9E+00	MW06-01-1994	Dec-94	Yes	3.9E+00	--
5A	UPPER	VOC	cis-1,2-Dichloroethene	156-59-2	4	1	2.0E-03	2.3E-02	6.7E+03	2.0E-03	MW06-01-1997-EPA-AVG	Mar-97	Yes	2.0E-03	--
5A	UPPER	VOC	trans-1,2-Dichloroethene	156-60-5	4	1	3.0E-03	2.3E-02	5.4E-02	3.0E-03	MW06-01-1997-EPA-AVG	Mar-97	Yes	3.0E-03	--
5A	UPPER	SVOC	1,2-Dichlorobenzene	95-50-1	15	5	1.0E-03	6.7E-03	1.0E-02	5.0E-03	MW45-03-1997	Sep-97	Yes	5.0E-03	--

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean[b] (mg/L)	UCL[c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/L)	Conc Used outdoor air[h] (mg/L)
5A	UPPER	SVOC	1,4-Dichlorobenzene	106-46-7	16	2	3.0E-03	8.2E-03	1.2E-02	1.1E-02	MW45-01-1997-AVG	Apr-97	Yes	1.1E-02	--
5A	UPPER	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	14	3	6.0E-03	5.9E-03	7.0E-03	9.5E-03	MW45-01-1997-AVG	Apr-97	Yes	9.5E-03	--
5A	UPPER	SVOC	2,4-Dimethylphenol	105-67-9	11	3	3.0E-03	1.2E-02	2.0E-02	5.8E-02	MW06-01-1994	Dec-94	Yes	5.8E-02	--
5A	UPPER	SVOC	2-Methylnaphthalene	91-57-6	14	5	4.0E-03	5.1E-03	6.0E-03	7.0E-03	MW45-02-1997	Jun-97	Yes	7.0E-03	--
5A	UPPER	SVOC	Benzo(k)fluoranthene	207-08-9	12	1	3.0E-03	6.1E-03	7.7E-03	3.0E-03	MW06-01-1997-EPA-AVG	Mar-97	Yes	3.0E-03	--
5A	UPPER	SVOC	Benzoic Acid	65-85-0	3	2	9.0E-03	1.0E-02	1.2E-02	1.1E-02	MW06-01-1989	Aug-89	Yes	1.1E-02	--
5A	UPPER	SVOC	Chrysene	218-01-9	13	1	3.0E-03	6.0E-03	7.5E-03	3.0E-03	MW06-01-1997-EPA-AVG	Mar-97	Yes	3.0E-03	--
5A	UPPER	SVOC	Di-n-octylphthalate	117-84-0	13	2	3.0E-03	9.2E-03	1.5E-02	4.7E-02	MW06-01-1994	Dec-94	Yes	4.7E-02	--
5A	UPPER	SVOC	Diethylphthalate	84-66-2	13	2	1.0E-03	5.6E-03	7.3E-03	2.0E-03	MW06-01-1996	Nov-96	Yes	2.0E-03	--
5A	UPPER	SVOC	Isophorone	78-59-1	14	8	2.0E-03	1.1E-02	1.6E-02	3.5E-02	MW06-01-1989	Aug-89	Yes	3.5E-02	--
5A	UPPER	SVOC	Naphthalene	91-20-3	15	6	7.0E-03	4.0E-02	6.4E-02	1.4E-01	MW45-02-1997	Jun-97	Yes	1.4E-01	--
5A	UPPER	SVOC	Pentachlorophenol	87-86-5	12	1	3.0E-03	1.5E-02	1.9E-02	3.0E-03	MW06-02-1990	May-90	Yes	3.0E-03	--
5A	UPPER	SVOC	Phenol	108-95-2	14	12	3.0E-03	3.0E-02	4.1E-02	6.4E-02	MW06-01-1994	Dec-94	Yes	6.4E-02	--
5A	UPPER	SVOC	bis(2-Chloroethyl) ether	111-44-4	14	13	4.0E-03	2.3E-02	5.5E-02	7.4E-02	MW06-04-1997	Dec-97	Yes	7.4E-02	--
5A	UPPER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	14	3	1.0E-02	8.0E-03	1.1E-02	2.9E-02	MW06-02-1990	May-90	Yes	2.9E-02	--
5A	UPPER	P/PCB	beta-BHC	319-85-7	12	1	5.0E-05	2.2E-05	2.9E-05	5.0E-05	MW06-01-1997	Apr-97	Yes	5.0E-05	--
5A	UPPER	P/PCB	gamma-Chlordane	5103-74-2	12	1	2.0E-05	5.7E-05	1.0E-04	2.0E-05	MW06-01-1997	Apr-97	Yes	2.0E-05	--
5A	UPPER	INORG	Aluminum	7429-90-5	13	8	1.1E-01	2.0E-01	3.5E-01	7.8E-01	MW45-01-1996	Aug-96	No (e)		--
5A	UPPER	INORG	Antimony	7440-36-0	12	2	1.1E-03	1.2E-03	1.8E-03	2.1E-03	MW06-04-1997	Dec-97	Yes	2.1E-03	--
5A	UPPER	INORG	Arsenic	7440-38-2	14	14	6.0E-03	3.8E-02	7.6E-02	1.1E-01	MW06-04-1997	Dec-97	Yes	1.1E-01	--
5A	UPPER	INORG	Barium	7440-39-3	13	13	8.5E-02	2.0E-01	2.6E-01	3.8E-01	MW06-01-1989	Aug-89	Yes	3.8E-01	--
5A	UPPER	INORG	Cadmium	7440-43-9	13	2	2.5E-04	4.8E-04	5.8E-04	3.0E-04	MW06-02-1990	May-90	Yes	3.0E-04	--
5A	UPPER	INORG	Calcium	7440-70-2	13	13	8.9E+01	1.5E+02	1.7E+02	2.2E+02	MW06-01-1996	Nov-96	No (e)		--
5A	UPPER	INORG	Chromium (total)	7440-47-3	13	9	3.4E-03	1.7E-02	2.5E-02	6.2E-02	MW06-04-1997	Dec-97	Yes	6.2E-02	--
5A	UPPER	INORG	Cobalt	7440-48-4	13	9	1.5E-03	6.7E-03	1.1E-02	4.2E-03	MW45-01-1997-AVG	Apr-97	Yes	4.2E-03	--
5A	UPPER	INORG	Copper	7440-50-8	13	7	5.2E-03	1.7E-02	2.7E-02	7.3E-02	MW45-01-1997-AVG	Apr-97	Yes	7.3E-02	--
5A	UPPER	INORG	Cyanide (total)	57-12-5	12	3	1.2E-02	7.4E-03	9.8E-03	1.7E-02	MW06-01-1997	Apr-97	Yes	1.7E-02	--
5A	UPPER	INORG	Iron	7439-89-6	13	13	1.2E+00	1.0E+01	1.4E+01	2.7E+01	MW06-04-1997	Dec-97	No (e)		--
5A	UPPER	INORG	Lead	7439-92-1	13	11	1.1E-03	8.6E-03	1.4E-02	3.9E-02	MW45-01-1996	Aug-96	Yes	3.9E-02	--
5A	UPPER	INORG	Magnesium	7439-95-4	13	12	2.3E+01	3.0E+01	3.3E+01	3.8E+01	MW06-01-1996	Nov-96	No (e)		--
5A	UPPER	INORG	Manganese	7439-96-5	14	14	3.5E-01	1.4E+00	2.0E+00	4.0E+00	MW06-02-1990	May-90	Yes	4.0E+00	--
5A	UPPER	INORG	Nickel	7440-02-0	13	10	6.2E-03	2.5E-02	4.9E-02	6.2E-02	MW06-04-1997	Dec-97	Yes	6.2E-02	--
5A	UPPER	INORG	Potassium	7440-09-7	13	12	5.4E+00	1.3E+01	1.9E+01	2.7E+01	MW06-01-1996	Nov-96	No (e)		--
5A	UPPER	INORG	Selenium	7782-49-2	13	2	2.1E-03	1.2E-03	1.5E-03	2.6E-03	MW06-04-1997	Dec-97	Yes	2.6E-03	--
5A	UPPER	INORG	Sodium	7440-23-5	13	13	7.1E+01	1.8E+02	2.7E+02	6.1E+02	MW06-01-1997-EPA-AVG	Mar-97	No (e)		--
5A	UPPER	INORG	Vanadium	7440-62-2	13	3	1.6E-03	3.7E-03	7.3E-03	2.6E-02	MW06-01-1989	Aug-89	Yes	2.6E-02	--
5A	UPPER	INORG	Zinc	7440-66-6	13	3	8.4E-03	8.0E-02	2.0E-01	8.9E-01	MW06-01-1989	Aug-89	Yes	8.9E-01	--
5B	UPPER	VOC	Benzene	71-43-2	6	6	3.5E+00	6.5E+00	8.6E+00	9.5E+00	MW48-03-1997	Sep-97	Yes	9.5E+00	--
5B	UPPER	VOC	Bromodichloromethane	75-27-4	6	1	9.0E-04	1.5E-01	2.5E-01	9.0E-04	MW48-01-1997-EPA	Mar-97	Yes	9.0E-04	--
5B	UPPER	VOC	Chloroethane	75-00-3	6	6	3.0E-01	6.7E-01	1.2E+00	1.0E+00	MW48-01-1996	Aug-96	Yes	1.0E+00	--
5B	UPPER	VOC	Chloroform	67-66-3	6	1	1.0E-03	1.5E-01	2.5E-01	1.0E-03	MW48-01-1997-EPA	Mar-97	Yes	1.0E-03	--
5B	UPPER	VOC	Chloromethane	74-87-3	6	1	3.8E-02	1.3E-01	2.4E-01	3.8E-02	MW48-04-1997	Dec-97	Yes	3.8E-02	--
5B	UPPER	VOC	Methylene Chloride	75-09-2	6	1	7.0E-02	1.8E-01	2.7E-01	7.0E-02	MW48-01-1996	Aug-96	Yes	7.0E-02	--
5B	UPPER	VOC	Toluene	108-88-3	6	1	2.0E-03	1.5E-01	2.5E-01	2.0E-03	MW48-01-1997-EPA	Mar-97	Yes	2.0E-03	--
5B	UPPER	VOC	trans-1,2-Dichloroethene	156-60-5	3	1	1.0E-03	4.4E-02	3.3E+23	1.0E-03	MW48-01-1997-EPA	Mar-97	Yes	1.0E-03	--
5B	UPPER	SVOC	2,6-Dinitrotoluene	606-20-2	6	1	9.0E-04	4.3E-03	1.8E-02	9.0E-04	MW48-01-1996	Aug-96	Yes	9.0E-04	--
5B	UPPER	SVOC	Isophorone	78-59-1	6	1	1.0E-03	4.3E-03	1.7E-02	1.0E-03	MW48-01-1997	Mar-97	Yes	1.0E-03	--
5B	UPPER	SVOC	Phenol	108-95-2	6	6	8.0E-03	6.6E-02	9.9E-02	1.1E-01	MW48-01-1996	Aug-96	Yes	1.1E-01	--
5B	UPPER	SVOC	bis(2-Chloroethyl) ether	111-44-4	6	3	1.0E-02	8.4E-03	2.5E-02	1.8E-02	MW48-02-1997	Jun-97	Yes	1.8E-02	--
5B	UPPER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6	1	4.0E-03	5.3E-03	7.3E-03	4.0E-03	MW48-01-1997-EPA	Mar-97	Yes	4.0E-03	--
5B	UPPER	INORG	Aluminum	7429-90-5	6	2	5.9E-02	1.1E-01	6.2E-01	3.3E-01	MW48-03-1997	Sep-97	No (e)		--
5B	UPPER	INORG	Antimony	7440-36-0	6	1	1.5E-03	8.3E-04	1.2E-03	1.5E-03	MW48-01-1997	Mar-97	Yes	1.5E-03	--
5B	UPPER	INORG	Arsenic	7440-38-2	6	5	5.0E-03	7.6E-03	1.1E-02	1.3E-02	MW48-03-1997	Sep-97	Yes	1.3E-02	--
5B	UPPER	INORG	Barium	7440-39-3	6	6	5.8E-02	1.2E-01	1.5E-01	1.6E-01	MW48-01-1996	Aug-96	Yes	1.6E-01	--
5B	UPPER	INORG	Beryllium	7440-41-7	6	1	1.3E-03	5.7E-04	8.9E-04	1.3E-03	MW48-01-1997-EPA	Mar-97	Yes	1.3E-03	--
5B	UPPER	INORG	Calcium	7440-70-2	6	6	8.0E+01	1.2E+02	1.4E+02	1.4E+02	MW48-01-1996	Aug-96	No (e)		--
5B	UPPER	INORG	Chromium (total)	7440-47-3	6	3	1.9E-03	3.9E-03	5.9E-03	7.8E-03	MW48-03-1997	Sep-97	Yes	7.8E-03	--

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean [b] (mg/L)	UCL [c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/L)	Conc Used outdoor air [h] (mg/L)
5B	UPPER	INORG	Cobalt	7440-48-4	6	3	2.6E-03	3.0E-03	4.2E-03	3.5E-03	MW48-03-1997	Sep-97	Yes	3.5E-03	--
5B	UPPER	INORG	Copper	7440-50-8	6	2	3.4E-03	4.9E-03	6.1E-02	1.3E-02	MW48-03-1997	Sep-97	Yes	1.3E-02	--
5B	UPPER	INORG	Iron	7439-89-6	6	6	1.3E+01	2.4E+01	2.8E+01	3.1E+01	MW48-01-1996	Aug-96	No (e)		--
5B	UPPER	INORG	Lead	7439-92-1	6	1	7.7E-03	2.1E-03	4.4E-03	7.7E-03	MW48-03-1997	Sep-97	Yes	7.7E-03	--
5B	UPPER	INORG	Magnesium	7439-95-4	6	6	1.3E+01	1.7E+01	1.9E+01	2.0E+01	MW48-01-1996	Aug-96	No (e)		--
5B	UPPER	INORG	Manganese	7439-96-5	6	6	3.9E-01	5.4E-01	6.6E-01	6.9E-01	MW48-01-1996	Aug-96	Yes	6.9E-01	--
5B	UPPER	INORG	Mercury	7439-97-6	6	1	3.0E-04	1.3E-04	2.0E-04	3.0E-04	MW48-01-1997-EPA	Mar-97	Yes	3.0E-04	--
5B	UPPER	INORG	Nickel	7440-02-0	6	3	6.6E-03	1.1E-02	1.7E-02	1.9E-02	MW48-03-1997	Sep-97	Yes	1.9E-02	--
5B	UPPER	INORG	Potassium	7440-09-7	6	5	3.8E+00	6.0E+00	7.5E+00	8.3E+00	MW48-03-1997	Sep-97	No (e)		--
5B	UPPER	INORG	Sodium	7440-23-5	6	6	2.5E+01	4.2E+01	4.9E+01	5.2E+01	MW48-01-1996	Aug-96	No (e)		--
5B	UPPER	INORG	Thallium	7440-28-0	6	2	1.1E-03	1.5E-03	2.5E-03	4.0E-03	MW48-01-1997	Mar-97	Yes	4.0E-03	--
5B	UPPER	INORG	Vanadium	7440-62-2	6	3	1.6E-03	3.1E-03	2.0E-02	2.4E-03	MW48-01-1997	Mar-97	Yes	2.4E-03	--
5B	UPPER	INORG	Zinc	7440-66-6	6	1	4.6E-03	1.2E-02	2.0E-02	4.6E-03	MW48-04-1997	Dec-97	Yes	4.6E-03	--
5PW	PRIVATE	VOC	1,2-Dichloroethane	107-06-2	36	1	1.0E-04	6.0E-04	6.6E-04	1.0E-04	PWJ-01-1997	Mar-97	Yes (g)	1.0E-04	--
5PW	PRIVATE	VOC	2-Butanone	78-93-3	22	2	3.0E-03	2.4E-03	2.6E-03	4.0E-03	PWRE-01-1997-AVG	Apr-97	Yes	4.0E-03	--
5PW	PRIVATE	VOC	Chloroform	67-66-3	36	2	1.0E-03	6.4E-04	7.0E-04	1.0E-03	PWC-01-1997-EPA	Mar-97	Yes	1.0E-03	--
5PW	PRIVATE	VOC	Chloromethane	74-87-3	30	1	3.0E-04	6.3E-04	7.0E-04	3.0E-04	PWL-01-1997	Apr-97	Yes (g)	3.0E-04	--
5PW	PRIVATE	VOC	Methylene Chloride	75-09-2	36	2	2.0E-04	7.3E-04	8.5E-04	2.0E-04	PWRC-02-1997	Oct-97	Yes	2.0E-04	--
5PW	PRIVATE	VOC	Toluene	108-88-3	36	1	3.0E-04	6.1E-04	6.7E-04	3.0E-04	PWI-01-1997-AVG	Mar-97	Yes (g)	3.0E-04	--
5PW	PRIVATE	VOC	Trichloroethene	79-01-6	36	2	2.0E-04	6.0E-04	6.6E-04	3.0E-04	PWK-01-1997	Mar-97	Yes	3.0E-04	--
5PW	PRIVATE	VOC	Vinyl Chloride	75-01-4	36	2	3.0E-04	6.1E-04	6.7E-04	6.0E-04	PWRE-01-1997-AVG	Apr-97	Yes	6.0E-04	--
5PW	PRIVATE	SVOC	1,4-Dichlorobenzene	106-46-7	44	1	3.0E-04	8.8E-04	1.0E-03	3.0E-04	PWN-01-1997	Mar-97	Yes (g)	3.0E-04	--
5PW	PRIVATE	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	34	4	1.0E-03	2.0E-03	2.2E-03	1.0E-03	PWA-01-1997-EPA	Mar-97	Yes	1.0E-03	--
5PW	PRIVATE	INORG	Aluminum	7429-90-5	34	1	1.0E-01	3.3E-02	4.4E-02	1.0E-01	PWK-02-1997	Oct-97	No (e)		--
5PW	PRIVATE	INORG	Antimony	7440-36-0	34	2	1.4E-03	9.1E-04	1.1E-03	1.7E-03	PWX-01-1997	Apr-97	Yes	1.7E-03	--
5PW	PRIVATE	INORG	Arsenic	7440-38-2	34	2	2.8E-03	1.1E-03	1.3E-03	3.8E-03	PWS-01-1997	Mar-97	Yes	3.8E-03	--
5PW	PRIVATE	INORG	Barium	7440-39-3	34	34	2.7E-03	1.4E-01	1.6E-01	2.9E-01	PW04-01-1990	Jun-90	Yes	2.9E-01	--
5PW	PRIVATE	INORG	Cadmium	7440-43-9	34	2	4.0E-04	4.1E-04	4.7E-04	1.1E-03	PWD-01-1997	Apr-97	Yes	1.1E-03	--
5PW	PRIVATE	INORG	Calcium	7440-70-2	34	34	1.5E+00	9.3E+01	1.0E+02	1.2E+02	PWT-01-1997	Apr-97	No (e)		--
5PW	PRIVATE	INORG	Chromium (total)	7440-47-3	34	1	6.7E-04	1.0E-03	1.4E-03	6.7E-04	PW04-01-1990	Jun-90	Yes (g)	6.7E-04	--
5PW	PRIVATE	INORG	Copper	7440-50-8	34	18	1.0E-03	2.2E-02	3.1E-02	1.6E-01	PWD-01-1997	Apr-97	Yes	1.6E-01	--
5PW	PRIVATE	INORG	Iron	7439-89-6	34	33	3.4E-02	2.3E+00	2.6E+00	4.5E+00	PW02-01-1990	Jun-90	No (e)		--
5PW	PRIVATE	INORG	Lead	7439-92-1	34	12	1.1E-03	2.9E-03	4.2E-03	2.3E-02	PWD-01-1997	Apr-97	Yes	2.3E-02	--
5PW	PRIVATE	INORG	Magnesium	7439-95-4	34	34	9.2E-01	4.6E+01	5.1E+01	7.0E+01	PWX-01-1997	Apr-97	No (e)		--
5PW	PRIVATE	INORG	Manganese	7439-96-5	34	31	1.7E-02	9.2E-02	1.5E-01	9.2E-01	PWK-01-1997	Mar-97	Yes	9.2E-01	--
5PW	PRIVATE	INORG	Nickel	7440-02-0	34	12	1.1E-03	5.9E-03	8.0E-03	5.0E-03	PWRW-01-1997	Apr-97	Yes	5.0E-03	--
5PW	PRIVATE	INORG	Potassium	7440-09-7	34	30	1.5E+00	3.0E+00	3.3E+00	5.3E+00	PWK-02-1997	Oct-97	No (e)		--
5PW	PRIVATE	INORG	Selenium	7782-49-2	34	1	2.1E-03	1.1E-03	1.2E-03	2.1E-03	PWY-02-1997-AVG	Oct-97	Yes (g)	2.1E-03	--
5PW	PRIVATE	INORG	Sodium	7440-23-5	34	33	9.4E+00	4.0E+01	5.4E+01	1.9E+02	PWRE-02-1997	Oct-97	No (e)		--
5PW	PRIVATE	INORG	Zinc	7440-66-6	34	15	2.8E-02	1.4E-01	2.3E-01	1.6E+00	PWD-01-1997	Apr-97	Yes	1.6E+00	--
ON-SITE	LOWER	VOC	1,1-Dichloroethane	75-34-3	118	1	6.0E-03	1.1E-02	1.4E-02	6.0E-03	IW1-1997-AVG	Nov-97	No (f)		
ON-SITE	LOWER	VOC	4-Methyl-2-pentanone	108-10-1	117	8	2.0E-03	1.5E-02	2.1E-02	9.0E-03	MW10-01-1995	Jan-95	Yes	9.0E-03	
ON-SITE	LOWER	VOC	Acetone	67-64-1	104	9	5.0E-03	1.3E-02	1.6E-02	2.2E-02	MW52-01-1996	Dec-96	Yes	2.2E-02	
ON-SITE	LOWER	VOC	Benzene	71-43-2	118	12	5.5E-04	2.0E-02	3.0E-02	3.1E-01	MW09-01-1996	Nov-96	Yes	3.1E-01	
ON-SITE	LOWER	VOC	Bromodichloromethane	75-27-4	118	1	6.0E-04	1.1E-02	1.4E-02	6.0E-04	IW4-1997-AVG	Nov-97	No (f)		
ON-SITE	LOWER	VOC	Carbon Disulfide	75-15-0	118	4	1.0E-04	1.1E-02	1.4E-02	2.0E-04	MW34-04-1997	Dec-97	No (f)		
ON-SITE	LOWER	VOC	Chloroethane	75-00-3	118	18	1.0E-04	1.2E-01	1.8E-01	2.9E+00	MW09-01-1997	Apr-97	Yes	2.9E+00	
ON-SITE	LOWER	VOC	Chloroform	67-66-3	118	4	6.0E-04	1.1E-02	1.4E-02	1.0E-03	MW30-01-1997	Mar-97	No (f)		
ON-SITE	LOWER	VOC	Chloromethane	74-87-3	118	3	1.0E-04	1.1E-02	1.4E-02	1.0E-03	MW-09-1997-EPA	Mar-97	No (f)		
ON-SITE	LOWER	VOC	Ethyl Benzene	100-41-4	117	6	1.0E-04	1.1E-02	1.4E-02	1.5E-03	IW1-1997-AVG	Nov-97	Yes	1.5E-03	
ON-SITE	LOWER	VOC	Methylene Chloride	75-09-2	118	2	1.0E-03	1.2E-02	1.6E-02	1.3E-01	MW10C-02-1997-AVG	Jun-97	No (f)		
ON-SITE	LOWER	VOC	Tetrachloroethene	127-18-4	117	2	3.5E-04	1.1E-02	1.4E-02	8.5E-03	IW1-1997-AVG	Nov-97	No (f)		
ON-SITE	LOWER	VOC	Toluene	108-88-3	117	13	1.0E-04	1.1E-02	1.4E-02	3.0E-03	IW1-1997-AVG	Nov-97	Yes	3.0E-03	
ON-SITE	LOWER	VOC	Trichloroethene	79-01-6	118	4	2.0E-04	1.1E-02	1.4E-02	5.5E-03	IW1-1997-AVG	Nov-97	No (f)		
ON-SITE	LOWER	VOC	Vinyl Chloride	75-01-4	118	3	1.0E-03	1.2E-02	1.5E-02	1.3E-01	MW10C-02-1997-AVG	Jun-97	No (f)		
ON-SITE	LOWER	VOC	Xylenes (total)	1330-20-7	117	8	1.5E-04	1.4E-02	2.0E-02	6.0E-03	IW1-1997-AVG	Nov-97	Yes	6.0E-03	
ON-SITE	LOWER	VOC	cis-1,2-Dichloroethene	156-59-2	25	3	1.0E-04	6.2E-03	1.2E-02	3.9E-02	IW1-1997-AVG	Nov-97	Yes	3.9E-02	

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean [b] (mg/L)	UCL [c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/L)	Conc Used outdoor air [h] (mg/L)
ON-SITE	LOWER	VOC	trans-1,2-Dichloroethene	156-60-5	25	3	4.5E-04	4.7E-03	9.6E-03	2.0E-03	M04D-01-1997-EPA	Mar-97	Yes	2.0E-03	
ON-SITE	LOWER	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	106	1	6.5E-03	5.6E-03	6.3E-03	6.5E-03	MW51-01-1996-AVG	Nov-96	No (f)		
ON-SITE	LOWER	SVOC	2-Methylphenol	95-48-7	107	1	2.0E-03	5.5E-03	6.2E-03	2.0E-03	MW55-01-1997	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	4-Chloro-3-methylphenol	59-50-7	107	1	4.0E-03	5.5E-03	6.2E-03	4.0E-03	MW55-01-1997	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	4-Methylphenol	106-44-5	107	1	1.1E-02	5.5E-03	6.3E-03	1.1E-02	MW53-01-1997-AVG	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	4-Nitrophenol	100-02-7	106	1	1.9E-02	1.4E-02	1.6E-02	1.9E-02	MW55-01-1997	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	Anthracene	120-12-7	106	2	7.0E-04	5.4E-03	6.2E-03	9.0E-04	MW30-1996	Mar-96	No (f)		
ON-SITE	LOWER	SVOC	Benzo(k)fluoranthene	207-08-9	106	2	1.0E-03	5.5E-03	6.2E-03	1.0E-03	MW-09-1997-EPA	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	Di-n-butylphthalate	84-74-2	106	3	7.0E-04	5.5E-03	6.2E-03	1.0E-03	MW51-01-1997-EPA	Mar-97	No (f)		
ON-SITE	LOWER	SVOC	Di-n-octylphthalate	117-84-0	106	2	1.0E-03	5.5E-03	6.3E-03	1.0E-02	MW21-01-1995-AVG	Jan-95	No (f)		
ON-SITE	LOWER	SVOC	Diethylphthalate	84-66-2	106	2	2.0E-03	5.5E-03	6.2E-03	2.9E-03	IW4-1997-AVG	Nov-97	No (f)		
ON-SITE	LOWER	SVOC	Isophorone	78-59-1	107	13	6.0E-04	5.0E-03	5.8E-03	5.0E-03	MW53-03-1997	Sep-97	Yes	5.0E-03	
ON-SITE	LOWER	SVOC	N-Nitroso-di-n-propylamine	621-64-7	107	1	6.5E-03	5.5E-03	6.2E-03	6.5E-03	MW51-01-1996-AVG	Nov-96	No (f)		
ON-SITE	LOWER	SVOC	Phenol	108-95-2	106	63	2.0E-03	2.9E-02	3.7E-02	3.4E-01	MW34-03-1997	Sep-97	Yes	3.4E-01	
ON-SITE	LOWER	SVOC	bis(2-Chloroethyl) ether	111-44-4	107	10	2.0E-03	7.0E-03	8.4E-03	4.4E-02	MW09-01-1996	Nov-96	Yes	4.4E-02	
ON-SITE	LOWER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	105	30	2.0E-03	1.0E-02	1.3E-02	9.3E-02	MW23-01-1997-EPA	Mar-97	Yes	9.3E-02	
ON-SITE	LOWER	P/PCB	4,4'-DDD	72-54-8	94	1	2.0E-06	3.9E-05	4.2E-05	2.0E-06	IW6-1997	Nov-97	No (f)		
ON-SITE	LOWER	P/PCB	Aldrin	309-00-2	94	1	6.0E-06	2.0E-05	2.1E-05	6.0E-06	IW6-1997	Nov-97	No (f)		
ON-SITE	LOWER	P/PCB	Aroclor-1248	12672-29-6	107	1	1.9E-04	3.9E-04	4.2E-04	1.9E-04	IW6-1997	Nov-97	No (f)		
ON-SITE	LOWER	P/PCB	Endrin aldehyde	7421-93-4	88	1	1.1E-05	3.9E-05	4.2E-05	1.1E-05	MW53-04-1997	Dec-97	No (f)		
ON-SITE	LOWER	P/PCB	Heptachlor	76-44-8	94	1	8.0E-06	2.0E-05	2.1E-05	8.0E-06	MW32-04-1997	Dec-97	No (f)		
ON-SITE	LOWER	P/PCB	alpha-BHC	319-84-6	94	1	3.0E-05	2.0E-05	2.1E-05	3.0E-05	MW33-01-1997	Mar-97	No (f)		
ON-SITE	LOWER	INORG	Aluminum	7429-90-5	101	65	1.2E-01	2.2E+00	3.0E+00	3.9E+01	MW53-01-1996	Dec-96	No (e)		
ON-SITE	LOWER	INORG	Antimony	7440-36-0	101	7	1.3E-03	9.7E-04	1.1E-03	6.8E-03	MW52-01-1996	Dec-96	Yes	6.8E-03	
ON-SITE	LOWER	INORG	Arsenic	7440-38-2	107	56	1.8E-03	7.0E-03	9.5E-03	1.3E-01	MW52-01-1997	Mar-97	Yes	1.3E-01	
ON-SITE	LOWER	INORG	Barium	7440-39-3	101	99	2.7E-02	3.2E-01	3.8E-01	1.6E+00	MW53-02-1997	Jun-97	Yes	1.6E+00	
ON-SITE	LOWER	INORG	Beryllium	7440-41-7	107	14	1.0E-03	7.7E-04	8.9E-04	6.2E-03	MW53-01-1996	Dec-96	Yes	6.2E-03	
ON-SITE	LOWER	INORG	Cadmium	7440-43-9	101	8	3.0E-04	9.3E-04	1.5E-03	3.6E-02	IW6-1997	Nov-97	Yes	3.6E-02	
ON-SITE	LOWER	INORG	Calcium	7440-70-2	101	101	9.5E-01	1.2E+02	1.2E+02	3.1E+02	MW33-01-1997	Mar-97	No (e)		
ON-SITE	LOWER	INORG	Chromium (total)	7440-47-3	101	82	1.3E-03	3.2E-02	4.1E-02	3.6E-01	MW10C-03-1997	Sep-97	Yes	3.6E-01	
ON-SITE	LOWER	INORG	Cobalt	7440-48-4	101	76	1.0E-03	4.9E-03	5.9E-03	2.5E-02	MW53-01-1996	Dec-96	Yes	2.5E-02	
ON-SITE	LOWER	INORG	Copper	7440-50-8	101	65	1.5E-03	2.0E-02	2.5E-02	1.1E-01	MW55-04-1997	Dec-97	Yes	1.1E-01	
ON-SITE	LOWER	INORG	Cyanide (total)	57-12-5	94	1	1.0E-02	5.0E-03	5.1E-03	1.0E-02	MW08-04-1997-AVG	Dec-97	No (f)		
ON-SITE	LOWER	INORG	Iron	7439-89-6	101	99	1.5E-01	9.6E+00	1.1E+01	5.2E+01	MW24-02-1997	Jun-97	No (e)		
ON-SITE	LOWER	INORG	Lead	7439-92-1	101	67	1.0E-03	1.2E-02	1.7E-02	3.0E-01	IW6-1997	Nov-97	Yes	3.0E-01	
ON-SITE	LOWER	INORG	Magnesium	7439-95-4	101	101	4.3E+00	4.5E+01	4.8E+01	1.2E+02	MW53-02-1997	Jun-97	No (e)		
ON-SITE	LOWER	INORG	Manganese	7439-96-5	107	107	1.0E-02	2.4E-01	2.9E-01	1.7E+00	MW24-01-1995	Jan-95	Yes	1.7E+00	
ON-SITE	LOWER	INORG	Mercury	7439-97-6	101	3	2.4E-04	1.2E-04	1.3E-04	6.7E-04	MW09-01-1997	Apr-97	No (f)		
ON-SITE	LOWER	INORG	Nickel	7440-02-0	101	69	2.5E-03	2.9E-02	3.5E-02	2.6E-01	MW10C-03-1997	Sep-97	Yes	2.6E-01	
ON-SITE	LOWER	INORG	Potassium	7440-09-7	101	90	9.6E-01	6.1E+00	7.1E+00	3.3E+01	MW53-02-1997	Jun-97	No (e)		
ON-SITE	LOWER	INORG	Selenium	7782-49-2	101	5	2.1E-03	1.2E-03	1.3E-03	3.2E-03	MW24-04-1997	Dec-97	No (f)		
ON-SITE	LOWER	INORG	Sodium	7440-23-5	101	100	1.0E+01	8.6E+01	9.9E+01	4.0E+02	MW53-02-1997	Jun-97	No (e)		
ON-SITE	LOWER	INORG	Thallium	7440-28-0	107	6	1.8E-03	1.2E-03	1.3E-03	4.1E-03	MW52-01-1996	Dec-96	Yes	4.1E-03	
ON-SITE	LOWER	INORG	Vanadium	7440-62-2	101	57	1.0E-03	3.7E-03	4.7E-03	3.2E-02	MW53-01-1996	Dec-96	Yes	3.2E-02	
ON-SITE	LOWER	INORG	Zinc	7440-66-6	101	32	1.0E-02	4.9E-01	1.1E+00	3.3E+01	IW6-1997	Nov-97	Yes	3.3E+01	
5A	LOWER	VOC	2-Butanone	78-93-3	25	1	5.5E-03	4.9E-03	5.1E-03	5.5E-03	MW07-01-1995-AVG	Jan-95	No (f)		
5A	LOWER	VOC	Acetone	67-64-1	26	1	2.0E-02	5.8E-03	6.9E-03	2.0E-02	MW07-01-1997	Mar-97	No (f)		
5A	LOWER	VOC	Carbon Disulfide	75-15-0	30	1	4.0E-04	3.9E-03	4.5E-03	4.0E-04	MW22-04-1997	Dec-97	No (f)		
5A	LOWER	VOC	Chloroform	67-66-3	30	1	3.0E-03	3.9E-03	4.4E-03	3.0E-03	MW22-02-1997	Jul-97	No (f)		
5A	LOWER	VOC	Chloromethane	74-87-3	30	1	3.0E-04	4.2E-03	4.8E-03	3.0E-04	MW07-04-1997	Dec-97	No (f)		
5A	LOWER	VOC	Toluene	108-88-3	30	2	1.0E-03	3.7E-03	4.2E-03	1.0E-03	MW07-03-1997	Sep-97	Yes	1.0E-03	
5A	LOWER	SVOC	Benzoic Acid	65-85-0	3	1	6.0E-03	1.9E-02	3.7E-02	6.0E-03	MW28-01-1997-EPA	Mar-97	Yes	6.0E-03	
5A	LOWER	SVOC	Di-n-butylphthalate	84-74-2	27	1	1.0E-03	7.1E-03	9.5E-03	1.0E-03	MW28-01-1997-EPA	Mar-97	No (f)		
5A	LOWER	SVOC	Dimethylphthalate	131-11-3	27	1	9.0E-03	7.2E-03	9.6E-03	9.0E-03	MW50-01-1997-AVG	Mar-97	No (f)		
5A	LOWER	SVOC	Phenol	108-95-2	27	19	1.0E-03	6.6E-02	9.3E-02	3.3E-01	MW22-03-1997	Sep-97	Yes	3.3E-01	
5A	LOWER	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	27	12	2.0E-03	1.1E-02	1.5E-02	5.6E-02	MW36-01-1997	Mar-97	Yes	5.6E-02	
5A	LOWER	INORG	Aluminum	7429-90-5	25	18	6.1E-02	1.2E+00	1.8E+00	7.6E+00	MW50-01-1997-AVG	Mar-97	No (e)		

Table 2-7 Summary of Constituents in Ground Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	Aquifer	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean[b] (mg/L)	UCL[c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/L)	Conc Used outdoor air[h] (mg/L)
5A	LOWER	INORG	Arsenic	7440-38-2	27	7	1.2E-03	1.6E-03	1.9E-03	4.9E-03	MW28-03-1997	Sep-97	Yes	4.9E-03	
5A	LOWER	INORG	Barium	7440-39-3	25	23	9.5E-02	2.2E-01	2.7E-01	6.3E-01	MW22-03-1997	Sep-97	Yes	6.3E-01	
5A	LOWER	INORG	Beryllium	7440-41-7	27	2	1.1E-03	6.6E-04	8.5E-04	1.1E-03	MW28-03-1997	Sep-97	Yes	1.1E-03	
5A	LOWER	INORG	Cadmium	7440-43-9	25	1	1.1E-03	4.8E-04	5.4E-04	1.1E-03	MW07-04-1997	Dec-97	No (f)		
5A	LOWER	INORG	Calcium	7440-70-2	25	25	4.9E+01	1.1E+02	1.3E+02	2.5E+02	MW22-03-1997	Sep-97	No (e)		
5A	LOWER	INORG	Chromium (total)	7440-47-3	25	19	5.4E-03	2.7E-02	3.9E-02	1.1E-01	MW28-01-1997	Mar-97	Yes	1.1E-01	
5A	LOWER	INORG	Cobalt	7440-48-4	25	17	1.0E-03	3.9E-03	6.1E-03	6.7E-03	MW50-01-1997-AVG	Mar-97	Yes	6.7E-03	
5A	LOWER	INORG	Copper	7440-50-8	25	20	3.8E-03	2.3E-02	3.2E-02	1.3E-01	MW22-03-1997	Sep-97	Yes	1.3E-01	
5A	LOWER	INORG	Iron	7439-89-6	25	25	7.4E-02	3.7E+00	4.8E+00	1.3E+01	MW50-01-1997-AVG	Mar-97	No (e)		
5A	LOWER	INORG	Lead	7439-92-1	25	18	1.6E-03	4.5E-03	5.6E-03	1.2E-02	MW28-01-1997	Mar-97	Yes	1.2E-02	
5A	LOWER	INORG	Magnesium	7439-95-4	25	25	5.6E+00	3.9E+01	4.5E+01	8.6E+01	MW50-01-1997-AVG	Mar-97	No (e)		
5A	LOWER	INORG	Manganese	7439-96-5	27	27	1.5E-02	1.1E-01	1.3E-01	2.6E-01	MW50-01-1997-AVG	Mar-97	Yes	2.6E-01	
5A	LOWER	INORG	Nickel	7440-02-0	25	20	6.5E-03	2.2E-02	2.9E-02	7.4E-02	MW28-01-1997	Mar-97	Yes	7.4E-02	
5A	LOWER	INORG	Potassium	7440-09-7	25	24	8.9E-01	1.1E+01	1.8E+01	9.3E+01	MW22-01-1996	Nov-96	No (e)		
5A	LOWER	INORG	Selenium	7782-49-2	25	2	2.5E-03	1.1E-03	1.3E-03	3.0E-03	MW22-04-1997	Dec-97	Yes	3.0E-03	
5A	LOWER	INORG	Sodium	7440-23-5	25	25	1.2E+01	1.1E+02	1.6E+02	3.6E+02	MW50-01-1997-AVG	Mar-97	No (e)		
5A	LOWER	INORG	Thallium	7440-28-0	27	2	2.1E-03	1.3E-03	1.5E-03	3.6E-03	MW22-04-1997	Dec-97	Yes	3.6E-03	
5A	LOWER	INORG	Vanadium	7440-62-2	25	13	1.1E-03	2.3E-03	3.3E-03	1.3E-02	MW50-01-1997-AVG	Mar-97	Yes	1.3E-02	
5A	LOWER	INORG	Zinc	7440-66-6	25	8	1.3E-02	1.8E-02	2.2E-02	4.2E-02	MW50-01-1997-AVG	Mar-97	Yes	4.2E-02	

(a) Table only includes constituents that were detected at least once in media/area/depth.

(b) The arithmetic mean was calculated assuming the concentration is equal to one-half the detection limit for non-detects.

(c) UCL = 95% Upper Confidence Limit on the arithmetic mean. The UCL was calculated assuming the concentration is equal to one-half the detection limit for non-detects.

(d) The maximum detected concentration was used as the exposure point concentration for ingestion, dermal contact, and indoor inhalation exposure scenarios.

(e) Chemical was not retained for risk calculations because it is a major earth element and does not have a toxicity value. See text.

(f) Chemical was not retained for risk calculations because it was detected in less than 5% of the samples from this media/area/depth.

(g) Although this chemical was detected in less than 5% of the private well samples, it was retained for risk calculations to identify the private well with the highest estimated risk.

(h) In order to estimate outdoor air concentrations from vapor emissions from ground water, the UCL was used as the exposure point concentration unless it was greater than the maximum, in which case, the maximum detected concentration was used.

Table 2-8 Summary of Constituents in Surface Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent[a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean[b] (mg/L)	UCL[c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations[d] (mg/L)
1	VOC	1,1-Dichloroethane	75-34-3	2	1	2.0E-03	2.3E-03	3.8E-03	2.0E-03	ACS-SW01-01	Jul-89	Yes	2.0E-03
1	VOC	1,2-Dichloroethene (total)	540-59-0	2	1	1.0E-03	1.8E-03	6.5E-03	1.0E-03	ACS-SW01-01	Jul-89	Yes	1.0E-03
1	VOC	2-Butanone	78-93-3	2	1	3.3E-02	1.9E-02	1.1E-01	3.3E-02	ACS-SW02-01	Jul-89	Yes	3.3E-02
1	VOC	Acetone	67-64-1	2	1	5.0E-03	5.0E-03	5.0E-03	5.0E-03	ACS-SW02-01	Jul-89	Yes	5.0E-03
1	P/PCB	Aroclor-1248	12672-29-6	2	2	5.0E-04	6.7E-04	1.7E-03	8.4E-04	ACS-SW02-01	Jul-89	Yes	8.4E-04
1	INORG	Aluminum	7429-90-5	2	1	9.6E-01	5.3E-01	3.2E+00	9.6E-01	ACS-SW02-01	Jul-89	No (e)	
1	INORG	Cadmium	7440-43-9	2	1	7.2E-04	4.1E-04	2.4E-03	7.2E-04	ACS-SW02-01	Jul-89	Yes	7.2E-04
1	INORG	Calcium	7440-70-2	2	2	1.3E+01	4.5E+01	2.5E+02	7.8E+01	ACS-SW01-01	Jul-89	No (e)	
1	INORG	Chromium (total)	7440-47-3	2	2	7.8E-03	8.1E-03	9.6E-03	8.3E-03	ACS-SW02-01	Jul-89	Yes	8.3E-03
1	INORG	Copper	7440-50-8	2	1	2.2E-02	1.6E-02	5.4E-02	2.2E-02	ACS-SW02-01	Jul-89	Yes	2.2E-02
1	INORG	Iron	7439-89-6	2	2	2.7E-01	5.6E-01	2.4E+00	8.5E-01	ACS-SW02-01	Jul-89	No (e)	
1	INORG	Lead	7439-92-1	2	2	6.3E-03	1.5E-02	7.0E-02	2.4E-02	ACS-SW02-01	Jul-89	Yes	2.4E-02
1	INORG	Magnesium	7439-95-4	2	2	1.1E+00	1.8E+01	1.2E+02	3.5E+01	ACS-SW01-01	Jul-89	No (e)	
1	INORG	Manganese	7439-96-5	2	2	2.4E-02	3.8E-02	1.3E-01	5.2E-02	ACS-SW01-01	Jul-89	Yes	5.2E-02
1	INORG	Potassium	7440-09-7	2	2	6.5E-01	3.4E+00	2.1E+01	6.1E+00	ACS-SW01-01	Jul-89	No (e)	
1	INORG	Sodium	7440-23-5	2	1	8.2E+01	4.1E+01	3.0E+02	8.2E+01	ACS-SW01-01	Jul-89	No (e)	
1	INORG	Zinc	7440-66-6	2	2	5.4E-02	5.8E-02	8.0E-02	6.1E-02	ACS-SW02-01	Jul-89	Yes	6.1E-02
2	VOC	1,1-Dichloroethane	75-34-3	1	1	1.0E-03			1.0E-03	ACS-SW05-01	Jul-89	Yes	1.0E-03
2	VOC	1,2-Dichloroethene (total)	540-59-0	1	1	3.0E-03			3.0E-03	ACS-SW05-01	Jul-89	Yes	3.0E-03
2	VOC	2-Butanone	78-93-3	1	1	1.4E-01			1.4E-01	ACS-SW05-01	Jul-89	Yes	1.4E-01
2	VOC	4-Methyl-2-pentanone	108-10-1	1	1	4.9E-02			4.9E-02	ACS-SW05-01	Jul-89	Yes	4.9E-02
2	VOC	Acetone	67-64-1	1	1	3.8E-01			3.8E-01	ACS-SW05-01	Jul-89	Yes	3.8E-01
2	VOC	Benzene	71-43-2	1	1	4.6E-01			4.6E-01	ACS-SW05-01	Jul-89	Yes	4.6E-01
2	VOC	Chloroethane	75-00-3	1	1	3.0E-02			3.0E-02	ACS-SW05-01	Jul-89	Yes	3.0E-02
2	VOC	Ethyl Benzene	100-41-4	1	1	6.0E-03			6.0E-03	ACS-SW05-01	Jul-89	Yes	6.0E-03
2	VOC	Toluene	108-88-3	1	1	7.0E-03			7.0E-03	ACS-SW05-01	Jul-89	Yes	7.0E-03
2	VOC	Xylenes (total)	1330-20-7	1	1	3.5E-02			3.5E-02	ACS-SW05-01	Jul-89	Yes	3.5E-02
2	SVOC	2,4-Dimethylphenol	105-67-9	1	1	1.2E-02			1.2E-02	ACS-SW05-01	Jul-89	Yes	1.2E-02
2	SVOC	2-Methylphenol	95-48-7	1	1	5.0E-03			5.0E-03	ACS-SW05-01	Jul-89	Yes	5.0E-03
2	SVOC	4-Chloro-3-methylphenol	59-50-7	1	1	2.0E-03			2.0E-03	ACS-SW05-01	Jul-89	Yes	2.0E-03
2	SVOC	4-Methylphenol	106-44-5	1	1	9.0E-03			9.0E-03	ACS-SW05-01	Jul-89	Yes	9.0E-03
2	SVOC	Isophorone	78-59-1	1	1	5.0E-03			5.0E-03	ACS-SW05-01	Jul-89	Yes	5.0E-03
2	SVOC	Phenol	108-95-2	1	1	2.3E-02			2.3E-02	ACS-SW05-01	Jul-89	Yes	2.3E-02
2	SVOC	bis(2-Chloroethyl) ether	111-44-4	1	1	7.7E-02			7.7E-02	ACS-SW05-01	Jul-89	Yes	7.7E-02
2	INORG	Aluminum	7429-90-5	1	1	4.7E-01			4.7E-01	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Arsenic	7440-38-2	1	1	4.5E-02			4.5E-02	ACS-SW05-01	Jul-89	Yes	4.5E-02
2	INORG	Barium	7440-39-3	1	1	3.3E-01			3.3E-01	ACS-SW05-01	Jul-89	Yes	3.3E-01
2	INORG	Beryllium	7440-41-7	1	1	2.8E-04			2.8E-04	ACS-SW05-01	Jul-89	Yes	2.8E-04
2	INORG	Calcium	7440-70-2	1	1	3.3E+02			3.3E+02	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Chromium (total)	7440-47-3	1	1	2.8E-02			2.8E-02	ACS-SW05-01	Jul-89	Yes	2.8E-02
2	INORG	Iron	7439-89-6	1	1	1.4E+01			1.4E+01	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Lead	7439-92-1	1	1	4.2E-03			4.2E-03	ACS-SW05-01	Jul-89	Yes	4.2E-03
2	INORG	Magnesium	7439-95-4	1	1	6.2E+01			6.2E+01	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Manganese	7439-96-5	1	1	9.9E-01			9.9E-01	ACS-SW05-01	Jul-89	Yes	9.9E-01
2	INORG	Nickel	7440-02-0	1	1	8.0E-02			8.0E-02	ACS-SW05-01	Jul-89	Yes	8.0E-02
2	INORG	Potassium	7440-09-7	1	1	3.0E+01			3.0E+01	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Sodium	7440-23-5	1	1	7.7E+01			7.7E+01	ACS-SW05-01	Jul-89	No (e)	
2	INORG	Zinc	7440-66-6	1	1	5.3E-02			5.3E-02	ACS-SW05-01	Jul-89	Yes	5.3E-02
4A	VOC	2-Butanone	78-93-3	13	1	7.0E-04	8.1E-03	1.4E-02	7.0E-04	97ZB02S05	Dec-96	Yes	7.0E-04
4A	VOC	Acetone	67-64-1	13	5	7.0E-03	1.0E-02	1.6E-02	1.3E-02	APD-SW16-01	May-96	Yes	1.3E-02

Table 2-8 Summary of Constituents in Surface Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean [b] (mg/L)	UCL [c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/L)
4A	VOC	Benzene	71-43-2	13	3	5.4E-02	1.6E-01	4.0E-01	1.8E+00	APD-SW09-01	May-96	Yes	4.0E-01
4A	VOC	Chloroethane	75-00-3	13	6	2.0E-03	4.8E-02	1.1E-01	4.4E-01	APD-SW09-01	May-96	Yes	1.1E-01
4A	SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	13	7	5.0E-03	9.9E-03	1.4E-02	2.9E-02	ACS-SW07A-01	Jul-89	Yes	1.4E-02
4A	SVOC	4-Methylphenol	106-44-5	13	1	1.0E-03	4.5E-03	5.1E-03	1.0E-03	APD-SW18-01	May-96	Yes	1.0E-03
4A	SVOC	Isophorone	78-59-1	13	1	2.0E-03	4.6E-03	5.1E-03	2.0E-03	APD-SW09-01	May-96	Yes	2.0E-03
4A	SVOC	bis(2-Chloroethyl) ether	111-44-4	13	7	2.0E-03	4.8E-03	5.5E-03	8.0E-03	APD-SW09-01	May-96	Yes	5.5E-03
4A	SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	13	5	3.0E-03	4.9E-03	5.5E-03	8.0E-03	APD-SW13-01	May-96	Yes	5.5E-03
4A	INORG	Aluminum	7429-90-5	2	1	3.2E-01	2.1E-01	9.0E-01	3.2E-01	97ZB02S05	Dec-96	No (e)	
4A	INORG	Arsenic	7440-38-2	2	1	2.3E-03	2.2E-03	3.1E-03	2.3E-03	ACS-SW07A-01	Jul-89	Yes	2.3E-03
4A	INORG	Barium	7440-39-3	2	1	1.2E-01	1.1E-01	1.7E-01	1.2E-01	97ZB02S05	Dec-96	Yes	1.2E-01
4A	INORG	Cadmium	7440-43-9	13	3	5.0E-03	5.0E-03	9.0E-03	3.2E-02	APD-SW09-01	May-96	Yes	9.0E-03
4A	INORG	Calcium	7440-70-2	2	2	1.3E+02	1.3E+02	1.3E+02	1.3E+02	ACS-SW07A-01	Jul-89	No (e)	
4A	INORG	Cyanide (total)	57-12-5	13	1	5.6E-03	3.0E-03	3.6E-03	5.6E-03	APD-SW09-01	May-96	Yes	3.6E-03
4A	INORG	Iron	7439-89-6	13	13	1.1E+00	2.3E+01	5.3E+01	2.2E+02	APD-SW09-01	May-96	No (e)	
4A	INORG	Lead	7439-92-1	13	4	4.6E-03	3.3E-02	6.4E-02	1.8E-01	APD-SW18-01	May-96	Yes	6.4E-02
4A	INORG	Magnesium	7439-95-4	2	1	3.6E+01	2.4E+01	9.6E+01	3.6E+01	97ZB02S05	Dec-96	No (e)	
4A	INORG	Manganese	7439-96-5	2	2	4.3E-01	6.9E-01	2.3E+00	9.4E-01	ACS-SW07A-01	Jul-89	Yes	9.4E-01
4A	INORG	Mercury	7439-97-6	13	1	2.8E-04	1.1E-04	1.4E-04	2.8E-04	APD-SW18-01	May-96	Yes	1.4E-04
4A	INORG	Potassium	7440-09-7	2	1	2.1E+01	1.1E+01	7.2E+01	2.1E+01	97ZB02S05	Dec-96	No (e)	
4A	INORG	Sodium	7440-23-5	2	1	3.6E+01	2.5E+01	9.2E+01	3.6E+01	97ZB02S05	Dec-96	No (e)	
4A	INORG	Zinc	7440-66-6	13	4	1.8E-01	1.2E-01	2.0E-01	4.6E-01	APD-SW09-01	May-96	Yes	2.0E-01
4B	VOC	1,1,1-Trichloroethane	71-55-6	1	1	1.6E-01			1.6E-01	97ZB04S21	Apr-97	Yes	1.6E-01
4B	VOC	1,1,2,2-Tetrachloroethane	79-34-5	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	VOC	1,1,2-Trichloroethane	79-00-5	1	1	3.0E-03			3.0E-03	97ZB04S21	Apr-97	Yes	3.0E-03
4B	VOC	1,1-Dichloroethane	75-34-3	1	1	2.4E-01			2.4E-01	97ZB04S21	Apr-97	Yes	2.4E-01
4B	VOC	1,2,4-Trimethylbenzene	95-63-6	1	1	3.2E-02			3.2E-02	97ZB04S21	Apr-97	Yes	3.2E-02
4B	VOC	1,2-Dichloroethane	107-06-2	1	1	6.0E-03			6.0E-03	97ZB04S21	Apr-97	Yes	6.0E-03
4B	VOC	1,3,5-Trimethylbenzene	108-67-8	1	1	1.1E-02			1.1E-02	97ZB04S21	Apr-97	Yes	1.1E-02
4B	VOC	Benzene	71-43-2	1	1	1.1E-01			1.1E-01	97ZB04S21	Apr-97	Yes	1.1E-01
4B	VOC	Chlorobenzene	108-90-7	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	VOC	Chloroethane	75-00-3	1	1	2.7E-02			2.7E-02	97ZB04S21	Apr-97	Yes	2.7E-02
4B	VOC	Chloroform	67-66-3	1	1	7.0E-03			7.0E-03	97ZB04S21	Apr-97	Yes	7.0E-03
4B	VOC	Ethyl Benzene	100-41-4	1	1	5.0E-03			5.0E-03	97ZB04S21	Apr-97	Yes	5.0E-03
4B	VOC	Tetrachloroethene	127-18-4	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	VOC	Toluene	108-88-3	1	1	4.5E-02			4.5E-02	97ZB04S21	Apr-97	Yes	4.5E-02
4B	VOC	Trichloroethene	79-01-6	1	1	3.0E-03			3.0E-03	97ZB04S21	Apr-97	Yes	3.0E-03
4B	VOC	Vinyl Chloride	75-01-4	1	1	1.4E-01			1.4E-01	97ZB04S21	Apr-97	Yes	1.4E-01
4B	VOC	cis-1,2-Dichloroethene	156-59-2	1	1	1.9E-01			1.9E-01	97ZB04S21	Apr-97	Yes	1.9E-01
4B	VOC	m,p-xylene	36777-61-2	1	1	1.6E-02			1.6E-02	97ZB04S21	Apr-97	Yes	1.6E-02
4B	VOC	ortho-xylene	95-47-6	1	1	2.9E-02			2.9E-02	97ZB04S21	Apr-97	Yes	2.9E-02
4B	VOC	p-Cymene	99-87-6	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	VOC	trans-1,2-Dichloroethene	156-60-5	1	1	3.0E-03			3.0E-03	97ZB04S21	Apr-97	Yes	3.0E-03
4B	SVOC	1,2-Dichlorobenzene	95-50-1	1	1	7.0E-03			7.0E-03	97ZB04S21	Apr-97	Yes	7.0E-03
4B	SVOC	1,3-Dichlorobenzene	541-73-1	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	SVOC	1,4-Dichlorobenzene	106-46-7	1	1	1.0E-03			1.0E-03	97ZB04S21	Apr-97	Yes	1.0E-03
4B	SVOC	Naphthalene	91-20-3	1	1	8.0E-03			8.0E-03	97ZB04S21	Apr-97	Yes	8.0E-03
5	VOC	Toluene	108-88-3	2	1	8.0E-03	6.5E-03	1.6E-02	8.0E-03	ACS-SW08-01	Jul-89	Yes	8.0E-03
5	SVOC	4-Methylphenol	106-44-5	2	1	5.9E-01	3.0E-01	2.1E+00	5.9E-01	ACS-SW08-01	Jul-89	Yes	5.9E-01
5	SVOC	Benzoic Acid	65-85-0	1	1	8.5E-02			8.5E-02	ACS-SW08-01	Jul-89	Yes	8.5E-02
5	SVOC	Phenol	108-95-2	2	1	4.5E-02	2.5E-02	1.5E-01	4.5E-02	ACS-SW08-01	Jul-89	Yes	4.5E-02

Table 2-8 Summary of Constituents in Surface Water Evaluated in Risk Assessment
ACS NPL Site, Griffith, IN

Area	TAL/TCL Group	Constituent [a]	CASRN	Number of Valid Results	Number of Detections	Minimum Detected (mg/L)	Arithmetic Mean [b] (mg/L)	UCL [c] (mg/L)	Maximum Detected (mg/L)	Sample ID for Maximum	Date for Max.	Retained for Calculation?	Conc Used in Calculations [d] (mg/L)
5	INORG	Aluminum	7429-90-5	1	1	7.6E-01			7.6E-01	ACS-SW08-01	Jul-89	No (e)	
5	INORG	Cadmium	7440-43-9	2	1	3.7E-04	1.4E-03	8.2E-03	3.7E-04	ACS-SW08-01	Jul-89	Yes	3.7E-04
5	INORG	Calcium	7440-70-2	1	1	1.5E+01			1.5E+01	ACS-SW08-01	Jul-89	No (e)	
5	INORG	Chromium (total)	7440-47-3	1	1	5.0E-03			5.0E-03	ACS-SW08-01	Jul-89	Yes	5.0E-03
5	INORG	Iron	7439-89-6	2	2	5.3E+00	1.1E+01	4.5E+01	1.6E+01	APD-SW14-01	May-96	No (e)	
5	INORG	Lead	7439-92-1	2	2	1.1E-02	1.4E-02	2.9E-02	1.6E-02	ACS-SW08-01	Jul-89	Yes	1.6E-02
5	INORG	Magnesium	7439-95-4	1	1	4.3E+00			4.3E+00	ACS-SW08-01	Jul-89	No (e)	
5	INORG	Manganese	7439-96-5	1	1	1.9E+00			1.9E+00	ACS-SW08-01	Jul-89	Yes	1.9E+00
5	INORG	Nickel	7440-02-0	1	1	5.5E-02			5.5E-02	ACS-SW08-01	Jul-89	Yes	5.5E-02
5	INORG	Potassium	7440-09-7	1	1	1.7E+01			1.7E+01	ACS-SW08-01	Jul-89	No (e)	
5	INORG	Selenium	7782-49-2	1	1	2.1E-03			2.1E-03	ACS-SW08-01	Jul-89	Yes	2.1E-03
5	INORG	Sodium	7440-23-5	1	1	4.2E+00			4.2E+00	ACS-SW08-01	Jul-89	No (e)	
5	INORG	Zinc	7440-66-6	2	2	7.1E-02	8.0E-02	1.3E-01	8.8E-02	ACS-SW08-01	Jul-89	Yes	8.8E-02

(a) Table only includes constituents that were detected at least once in media/area/depth.
(b) The arithmetic mean was calculated assuming the concentration is equal to one-half the detection limit for non-detects.
(c) UCL = 95% Upper Confidence Limit on the arithmetic mean. The UCL was calculated assuming the concentration is equal to one-half the detection limit for non-detects.
(d) The UCL was used as the exposure point concentration unless it was greater than the maximum, in which case, the maximum detected concentration was used.
(e) Chemical was not retained for risk calculations because it is a major earth element and essential nutrient or typical component in normal diet. See text.

Table 3-1A
Potential Current and Future Receptors for Each Area
ACS NPL Site, Griffith, Indiana

Potential Exposure Area	Potential Receptor									
	Routine Worker		Trespasser		Utility Worker		Construction Worker		Off-site Resident	
	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future
Area 1 (on-site)	Yes	Yes	No (c)	Yes	Yes (j)	Yes	No (d)	No (d)	No (e)	No (e)
Area 2 (on-site)	No (a)	Yes	No (c)	Yes	No (a)	Yes	No (a)	Yes	No (e)	No (e)
Area 3 (on-site)	No (a)	Yes	No (c)	Yes	No (a)	Yes	No (a)	Yes	No (e)	No (e)
Area 4A (on-site)	No (a)	No (b)	Yes	Yes	No (a)	No (b)	No (a)	No (b)	No (e)	No (b,e)
Area 4B (on-site)	No (a)	Yes	Yes	Yes	No (a)	Yes	No (a)	No (d)	No (e)	No (e)
Area 5A (off-site)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	Yes	Yes
Area 5B (off-site)	No (a,h,i)	No (h,i)	No (a,h,i)	No (h,i)	No (a,h,i)	Yes	No (a,d,h,i)	No (d,h,i)	No (g)	No (g)
Area 6 (off-site)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	No (f)	Yes	Yes

Notes:
(a) Area not currently developed
(b) Wetland area will not be developed
(c) Area part of ACS property with active facility and fenced. Condition of fence monitored monthly. No trespassers currently observed.
(d) Building construction scenarios not evaluated because of shallow ground water
(e) Residents not currently or expected to be on-site
(f) Exposures to workers and trespassers expected to be less than residential exposure both currently and in the future
(g) Zoned industrial with no current residents
(h) No soil contamination from Site in area and any inhalation exposures would be less than in Area 4B
(i) No exposure to ground water unless excavation occurs
(j) Under the ACS Health and Safety plan, personal protective equipment (PPE) is worn during utility maintenance activities that require excavation. See text.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
On-Site, Area 1 - On-Site Containment and Still Bottoms/Treatment Lagoon					
Routine Worker	ingestion and dermal contact	surface soil/sediment	Q	Q	Although large portions of Area 1 are covered by building construction and by a maintained cover of aggregate material, worker exposures to surface soil may occur in areas without aggregate cover.
	ingestion and dermal contact	subsurface soil	n	Q	Routine workers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface in the future.
	ingestion and dermal contact	surface water	Q	Q	Intermittent surface water in puddles
	ingestion and dermal contact	lower aquifer ground water	n	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, future use of ground water for nonpotable purposes (i.e., irrigation, showering) is evaluated.
	inhalation	vapors and particulates in ambient air from other area emissions	Q	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapors and particulates from surface soil/sediment	Q	Q	
	inhalation	vapors and particulates from subsurface soil	n	Q	Soil deeper than 2 ft is below the water table and does not add to vapor emissions. However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface.
	inhalation	vapors from lower aquifer ground water	n	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, inhalation of vapors from future ground water use for showers is evaluated.
	inhalation	vapors from upper aquifer ground water	n	n	Not quantified since vapor emissions from soil above the ground water table is significantly greater than from ground water itself.
Utility Maintenance Worker Peforming Excavation	ingestion and dermal contact	subsurface and surface soil/sediment	q	Q	Under current ACS' health and safety protocols for excavation work, protective equipment is required. Under the future scenario, excavation workers are assumed to work without protective equipment.
	dermal contact	upper aquifer ground water	q	Q	Under current conditions, excavation worker exposures are addressed by ACS' health and safety protocols for excavation work. Under the future scenario, excavation workers are assumed to work without personal protective equipment.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion	upper aquifer ground water	n	n	This pathway is considered de minimis.
	inhalation	vapors and particulates from surface and subsurface soil/sediment	q	Q	Under current ACS' health and safety protocols for excavation work, protective equipment is required. Under the future scenario, excavation workers are assumed to work without protective equipment. Particulate emissions during excavation activities are not expected due to the shallow ground water table.
	inhalation	vapors from upper aquifer ground water	q	Q	Under current ACS' health and safety protocols for excavation work, protective equipment is required. Under the future scenario, excavation workers are assumed to work without protective equipment.
Trespasser (age 9 to 18)	ingestion and dermal contact	surface soil/sediment	n (see Table 3-1A)	Q	Currently, no trespassing is observed in this area, but future trespassing is conservatively assumed to occur despite the fact that most of Area 1 is covered by building construction and a maintained aggregate cover material.
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Trespassers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Trespassers are not expected to engage in intrusive activities that would involve contact with ground water.
	ingestion and dermal contact	surface water	n (see Table 3-1A)	Q	Intermittent surface water in puddles
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapors and particulates from surface soil/sediment	n (see Table 3-1A)	Q	
	inhalation	vapors and particulates from subsurface soils	n (see Table 3-1A)	Q	Soil deeper than 2 ft is below the water table and does not add to vapor emissions. However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Not quantified since vapor emissions from soil above the ground water table is significantly greater than from ground water itself.
			On-Site, Area 2 - Off-Site Containment Area		
Routine Worker	ingestion and dermal contact	surface soil/sediment	n (see Table 3-1A)	q	Although the area is currently undeveloped, the future scenario conservatively assumes that future workers are present and that subsurface soils were unearthed and present a direct contact exposure potential to workers. (Quantified under *subsurface soil, since no surface concentrations were measured due to clay cap*)
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Routine workers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	ingestion and dermal contact	surface water	n (see Table 3-1A)	Q	Intermittent surface water in puddles
	ingestion and dermal contact	lower aquifer ground water	n (see Table 3-1A)	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, future use of ground water for nonpotable purposes (I.e., irrigation, showering) is evaluated.
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapors and particulates from surface soil/sediment	n (see Table 3-1A)	Q	As a bounding estimate for the future scenario, it is assumed that future surface soil concentrations equal current subsurface soil concentrations.
	inhalation	vapors and particulates from subsurface soils	n (see Table 3-1A)	Q	Routine workers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	inhalation	indoor vapors from lower aquifer ground water	n (see Table 3-1A)	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, inhalation of vapors from future ground water use for showers is evaluated.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water (i.e. 10 to 16 ft below ground surface), emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
Utility Maintenance Worker	ingestion and dermal contact	subsurface and surface soils	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. Under the future scenario, excavation workers are assumed to work without personal protective equipment.
Peforming Excavation	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, excavation workers are not expected to contact ground water.
	inhalation	vapors and particulates from surface and subsurface soils	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
Construction Worker	ingestion and dermal contact	subsurface and surface soils	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. Under the future scenario, construction workers are assumed to work without personal protective equipment.
	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, construction workers are not expected to contact ground water.
	inhalation	vapors and particulates from surface and subsurface soils	n (see Table 3-1A)	Q	Under the future scenario, construction workers are assumed to work without personal protective equipment.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
Trespasser (age 9 to 18)	ingestion and dermal contact	surface soil/sediment	n (see Table 3-1A)	q	Currently, no trespassing is observed in this area, but future trespassing is conservatively assumed. Area 2 is currently mostly covered by a clean material. As a bounding estimates for the future scenario, surface soil concentrations are assumed to equal current subsurface soil concentrations. (Quantified for subsurface soils)
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Trespassers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Trespassers are not expected to engage in intrusive activities that would involve contact with ground water.
	ingestion and dermal contact	surface water	n (see Table 3-1A)	Q	Intermittent surface water in puddles
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapor and particulates from surface soil/sediment	n (see Table 3-1A)	Q	Area 2 is currently mostly covered by a clean material. As a bounding estimates for the future scenario, surface soil concentrations are assumed to equal current subsurface soil concentrations.
	inhalation	vapors and particulates from subsurface soils	n (see Table 3-1A)	Q	Trespassers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
On-Site, Area 3 - Kapica-Pazmey Area					
Routine Worker	ingestion and dermal contact	surface soils	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. For the future scenario, it is assumed that workers are in this area.
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Routine workers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	ingestion and dermal contact	lower aquifer ground water	n (see Table 3-1A)	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, future use of ground water for nonpotable purposes (I.e., irrigation, showering) is evaluated.
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	inhalation	vapors and particulates from surface soils	n (see Table 3-1A)	Q	For the future scenario, it is assumed that workers are in this area.
	inhalation	vapors from subsurface soils	n (see Table 3-1A)	Q	For the future scenario, it is assumed that workers are in this area.
	inhalation	particulates from subsurface soils	n (see Table 3-1A)	Q	Routine workers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	inhalation	vapors from lower aquifer ground water	n (see Table 3-1A)	Q	Water supply is, and will continue to be, from a source other than on-site ground water. As a bounding measure, inhalation of vapors from future ground water use for showers is evaluated.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water (i.e., 10 to 16 ft below ground surface) emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
Utility Maintenance Worker	ingestion and dermal contact	subsurface and surface soil	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. Under the future scenario, excavation workers for utility maintenanceare assumed to work without personal protective equipment.
Peforming Excavation	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, excavation workers are not expected to contact ground water.
	inhalation	vapors and particulates from surface and subsurface soil	n (see Table 3-1A)	Q	Under the future scenario, excavation workers for utility maintenance are assumed to work without personal protective equipment.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
Construction Worker	ingestion and dermal contact	subsurface and surface soils	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. Under the future scenario, construction workers are assumed to work without personal protective equipment.
	ingestion and dermal contact	upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, construction workers are not expected to contact ground water.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	inhalation	Vapors and particulates from surface and subsurface soils	n (see Table 3-1A)	Q	Under the future scenario, construction workers are assumed to work without personal protective equipment.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
Trespasser (age 9 to 18)	ingestion and dermal contact	surface soils	n (see Table 3-1A)	Q	Under current conditions, no trespassing has been observed in this area, but it is conservatively assumed that trespassing may occur in the future.
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Trespassers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	ingestion and dermal contact	ground water	n (see Table 3-1A)	n	Trespassers are not expected to engage in intrusive activities that would involve contact with ground water.
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapor and particulates from surface soils	n (see Table 3-1A)	Q	
	inhalation	vapors from subsurface soils	n (see Table 3-1A)	Q	
	inhalation	particulates from subsurface soils	n (see Table 3-1A)	Q	Trespassers are not exposed to subsurface soil (soil 2-10 ft below ground surface). However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface during excavation activities.
	inhalation	vapors from ground water	n (see Table 3-1A)	n	Due to the depth to ground water, emission of vapors from subsurface media is expected to be primarily from subsurface soil rather than ground water.
			On-Site, Area 4A - Wetlands		
Trespasser (age 9 to 18)	ingestion and dermal contact	surface soils/sediment	Q	Q	

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion and dermal contact	subsurface soils	n	n	Trespassers are not expected to engage in intrusive activities.
	ingestion and dermal contact	surface water	Q	Q	
	ingestion and dermal contact	ground water	n	n	Trespassers are not expected to engage in intrusive activities.
	ingestion	fish	n	n	Wetlands in Area 4A do not support fish populations.
	inhalation	vapors and particulates in ambient air from other area emissions	Q	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	vapors from surface water	Q	Q	
	inhalation	vapor and particulates from surface soils/sediment	n	n	Since Area 4A is primarily wetlands, emission of vapors is expected to be primarily from surface water rather than sediment. In addition, particulate emissions would not be expected due to the presence of surface water.
	inhalation	vapors and particulates from subsurface soils	n	n	Since Area 4A is primarily wetlands, emission of vapors is expected to be primarily from surface water rather than subsurface soil.
	inhalation	vapors from ground water	n	n	Since Area 4A is primarily wetlands, emission of vapors is expected to be primarily from surface water rather than ground water.
On-Site, Area 4B - North Area					
Routine Worker	ingestion and dermal contact	surface soils/sediment	n (see Table 3-1A)	Q	This area is not currently developed, but could hypothetically be developed for industrial use in the future. For the future scenario, it is assumed that workers are in this area.
	ingestion and dermal contact	subsurface soils	n (see Table 3-1A)	Q	Routine workers are not expected to engage in intrusive activities. Such exposures are evaluated for excavation workers, below.
	ingestion and dermal contact	lower aquifer ground water	n (see Table 3-1A)	Q	This area is not currently developed but any future water supply is likely to be from a source other than on-site ground water. As a bounding measure, future use of ground water for nonpotable purposes (I.e., irrigation, showering) is evaluated.
	ingestion and dermal contact	surface water	n (see Table 3-1A)	Q	Intermittent surface water in puddles

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	inhalation	vapors and particulates in ambient air from other area emissions	n (see Table 3-1A)	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	particulates from surface soils/sediment	n (see Table 3-1A)	Q	
	inhalation	vapors from lower aquifer ground water	n (see Table 3-1A)	Q	This area is not currently developed but any future water supply is likely to be from a source other than on-site ground water. As a bounding measure, inhalation of vapors from future ground water use for showers is evaluated.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	Q	Routine workers may breathe contaminants emanating from ground water beneath Area 4B.
Utility Maintenance Worker Peforming Excavation	ingestion and dermal contact	subsurface and surface soils/sediment	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
	ingestion	upper aquifer ground water	n (see Table 3-1A)	n	This pathway is considered de minimis.
	dermal contact	upper aquifer ground water	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
	inhalation	Vapors and particulates from subsurface and surface soils /sediment	n (see Table 3-1A)	n	Due to the shallow ground water and limited soil/sediment contamination in Area 4B, emission of vapors is expected to be primarily from ground water rather than soils. In addition, particulate emissions during excavation activities would not be expected due to the shallow ground water table.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
Trespasser (age 9 to 18)	ingestion and dermal contact	surface soils/sediment	Q	Q	

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion and dermal contact	subsurface soils	n	Q	Trespassers are not expected to engage in intrusive activities. However, as a bounding estimate for future exposures, surface soil in the future is assumed to consist of soils that are currently 2 - 10 ft below ground surface, due to the potential for these soils to be moved to the surface during excavation activities.
	ingestion and dermal contact	surface water	Q	Q	Although surface water is only intermittently present in Area 4B, trespassers are assumed to contact surface water when in this area.
	ingestion and dermal contact	ground water	n	n	Trespassers are not expected to engage in intrusive activities that would involve contact with ground water.
	inhalation	vapors and particulates in ambient air from other area emissions	Q	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
	inhalation	particulates from surface soils/sediment	Q	Q	
	inhalation	vapors and particulates from subsurface soils	n	Q	Soil deeper than 4 ft is below the water table and does not add to vapor emissions. However, as a bounding estimate for future exposures, subsurface soil is assumed to have been moved to the surface.
	inhalation	vapors from ground water and surface water	Q	Q	Trespassers may breathe contaminants emanating from surface water and ground water beneath Area 4B.
				Off-Site, Area 5A - East	
Residents: Adult and Child (Age 1 to 6)	ingestion and dermal contact	on-site surface soils, subsurface soils, surface water and ground water	n	n	Residents are not expected to have direct contact with on-site surface soil, subsurface soil, surface water or ground water.
	ingestion and dermal contact	off-site surface soils	Q	Q	
	incidental ingestion and dermal contact outdoors	ground water	Q	Q	Several homes adjacent to the site reportedly use lower aquifer well water for drinking and general household purposes. Data from private wells are used to estimate current exposures. Data from lower aquifer monitoring wells are used to estimate future exposures. Although, the shallow depth of the clay layer precludes installing a well into the upper aquifer, data from upper aquifer monitoring wells are used as a bounding scenario for future exposures.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion, dermal contact and inhalation indoors	ground water used in homes	Q	Q	Several homes adjacent to the site reportedly use lower aquifer well water for drinking and general household purposes. Data from private wells are used to estimate current exposures. Data from lower aquifer monitoring wells are used to estimate future exposures. Although, the shallow depth of the clay layer precludes installing a well into the upper aquifer, data from upper aquifer monitoring wells are used as a bounding scenario for future exposures.
	ingestion	garden vegetables and fruits	n	n	This pathway not considered to pose substantial risk (as in original baseline risk assessment).
	inhalation	vapors and particulates in ambient air from other area emissions	Q	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)
			Off-Site, Area 5B - North		
Utility Maintenance Worker Peforming Excavation	dermal contact	upper aquifer ground water	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
	ingestion	upper aquifer ground water	n (see Table 3-1A)	n	This pathway is considered de minimis.
	inhalation	vapors from upper aquifer ground water	n (see Table 3-1A)	Q	Under the future scenario, excavation workers are assumed to work without personal protective equipment.
			Off-Site, Area 6 - West		
Residents: Adult and Child (Age 1 to 6)	ingestion and dermal contact	on-site surface and subsurface soils, surface water and ground water	n	n	Residents are not expected to have direct contact with on-site surface soil, subsurface soil, surface water or ground water.
	ingestion and dermal contact	sediment	Q	Q	Residents could have direct contact with sediment that may have washed from Area 4A.
	ingestion, dermal contact, and inhalation	off-site upper and lower aquifer groundwater	n	n	Ground water from the site does not flow toward Area 6, so wells in Area 6 are unlikely to be impacted by contaminants from the Site.

Table 3-1B
Scenarios for Potential Human Exposure
ACS NPL Site, Griffith, Indiana

Potential Exposure Area and Receptor	Exposure Route(s)	Exposure Medium Within Area Unless Noted	Current Land Use	Hypothetical Future Alternative Land Use	Comments
	ingestion	garden vegetables and fruits	n	n	This pathway not considered to pose substantial risk (as in original baseline risk assessment).
	inhalation	vapors and particulates in ambient air from other area emissions	Q	Q	Ambient air concentration were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. (See Appendix B)

Notes:
n = Not evaluated in risk assessment.
q = Evaluated semi-quantitatively in risk assessment.
Q = Evaluated quantitatively in risk assessment.

TABLE 3-2
Constituents and Exposure Concentrations (mg/kg) in Soil/Sediment
ACS NPL Site, Griffith, Indiana
Minimum of the 95th Percentile UCL and the Maximum Concentrations

Analyte Group	Substance	CASRN	Area 1 Surface C_{soil} (mg/kg)	Area 1 Subsurface C_{soil} (mg/kg)	Area 1 Sediment C_{sed} (mg/kg)	Area 1 Exc (0-10') C_{soil} (mg/kg)	Area 2 Subsurface C_{soil} (mg/kg)	Area 2 Sediment C_{sed} (mg/kg)	Area 2 Exc (0-4') C_{soil} (mg/kg)	Area 2 Exc (0-10') C_{soil} (mg/kg)	Area 3 Surface C_{soil} (mg/kg)	Area 3 Subsurface C_{soil} (mg/kg)	Area 3 Exc (0-4') C_{soil} (mg/kg)	Area 3 Exc (0-10') C_{soil} (mg/kg)	Area 4A Sediment C_{sed} (mg/kg)	Area 4B Sediment C_{sed} (mg/kg)	Area 4B Subsurface C_{soil} (mg/kg)	Area 4B Exc (0-10') C_{soil} (mg/kg)	Area 5A Surface C_{soil} (mg/kg)	Area 6 Sediment C_{sed} (mg/kg)
VOC	1,1,1-Trichloroethane	71-55-6		1.5E+03		1.2E+03	1.4E+01		3.1E-02	1.4E+01	9.0E-03	7.2E+02	9.0E-03	5.7E+02						
VOC	1,1,2,2-Tetrachloroethane	79-34-5		3.9E+00		3.2E+00	3.6E-02			3.6E-02										
VOC	1,1,2-Trichloroethane	79-00-5	1.3E-02	8.1E+00		6.5E+00														
VOC	1,1-Dichloroethane	75-34-3		2.2E+01		1.8E+01	1.2E+01			1.2E+01	8.6E-02	1.7E+00	1.2E-01	1.4E+00						
VOC	1,1-Dichloroethene	75-35-4							8.6E-03											
VOC	1,2,4-Trimethylbenzene	95-63-6																		
VOC	1,2-Dichloroethane	107-06-2		4.0E+01		3.2E+01	6.6E+00			6.6E+00		8.1E-01		7.2E-01						
VOC	1,2-Dichloroethene (total)	540-59-0	1.2E-02	2.4E+02		1.9E+02	1.7E+01			1.7E+01	7.6E+00	2.6E+01	7.6E+00	2.2E+01		1.2E-02		1.2E-02		
VOC	1,2-Dichloropropane	78-87-5		2.2E+01		1.8E+01	2.7E+00			2.7E+00	1.9E-02	5.5E-01	1.9E-02	4.4E-01						
VOC	1,3,5-Trimethylbenzene	108-67-8																		
VOC	2-Butanone	78-93-3		4.0E+02		3.2E+02	5.0E+02		5.2E+02	5.0E+02		9.2E+03	5.0E+04	2.7E+04	7.4E-02					1.1E-02
VOC	2-Hexanone	591-78-6					3.2E+01		5.0E+01	3.2E+01		3.9E-01		3.9E-01						
VOC	4-Methyl-2-pentanone	108-10-1		4.2E+02		3.4E+02	8.2E+01		1.5E+02	8.2E+01		5.7E+03	1.9E+02	4.6E+03						
VOC	Acetone	67-64-1		4.0E+02		3.2E+02	1.6E+02		4.8E+02	1.6E+02	1.3E-01	3.2E+03	5.5E-01	2.6E+03	2.2E-01	2.5E-02		2.5E-02		
VOC	Benzene	71-43-2		3.2E+02		2.6E+02	1.5E+01	1.4E+01	2.2E+01	1.5E+01	3.2E+00	1.5E+02	3.2E+00	1.2E+02	9.5E-01					
VOC	Bromodichloromethane	75-27-4																		
VOC	Carbon Disulfide	75-15-0	2.0E-03			2.0E-03														
VOC	Carbon Tetrachloride	56-23-5																		
VOC	Chlorobenzene	108-90-7		1.0E+01		8.0E+00					6.2E+00	1.0E+02	6.2E+00	8.5E+01						
VOC	Chloroethane	75-00-3													4.0E-02					
VOC	Chloroform	67-66-3	3.0E-03	2.9E+02	2.0E-03	2.3E+02	1.9E+01	3.0E-03		1.9E+01	1.0E-02	3.0E-03	1.0E-02	4.4E-03	2.0E-03					8.0E-03
VOC	Chloromethane	74-87-3																		
VOC	Ethyl Benzene	100-41-4		5.9E+02		4.7E+02	1.5E+02	1.3E-01	3.0E+02	1.5E+02	1.4E+02	2.4E+03	1.2E+03	1.9E+03						
VOC	Methylene Chloride	75-09-2		3.5E+02		2.8E+02	1.5E+01		2.0E-02	1.5E+01	2.0E-01	2.7E+00	1.1E-01	2.2E+00	4.4E-02				7.0E-03	
VOC	Styrene	100-42-5		9.0E+01		7.2E+01	9.9E+00			9.9E+00	2.3E+01	2.6E+02	2.3E+01	2.1E+02						
VOC	Tetrachloroethene	127-18-4	3.5E-01	7.3E+02		5.9E+02	1.3E+02		3.7E+02	1.3E+02	2.5E+02	4.3E+03	3.6E+02	3.5E+03						
VOC	Tetrahydrofuran	109-99-9																		
VOC	Toluene	108-88-3	1.3E-01	1.2E+04	3.0E-03	9.8E+03	6.7E+02	5.6E-02	7.5E+02	6.7E+02	6.4E+02	1.6E+04	6.3E+03	1.3E+04	1.1E-01				2.0E-03	
VOC	Trichloroethene	79-01-6	9.5E-02	3.4E+02		2.7E+02	5.5E+01		1.5E+02	5.5E+01	1.0E+02	1.8E+03	9.8E+01	1.5E+03						
VOC	Vinyl Chloride	75-01-4					1.1E-01			1.1E-01										
VOC	Xylenes (total)	1330-20-7	4.6E+00	2.8E+03		2.2E+03	1.4E+03	2.0E-01	3.6E+03	1.4E+03	5.7E+02	1.3E+04	8.3E+03	1.0E+04						
VOC	cis-1,2-Dichloroethene	156-59-2		1.2E+03		9.6E+02	2.3E-01		1.4E-01	2.3E-01		2.2E-02		1.8E-02						
VOC	m,p-xylene	136777-61-2		1.6E+03		1.3E+03	1.1E+00		3.2E-02	1.1E+00		1.1E+02		8.9E+01						
VOC	ortho-xylene	95-47-6		3.3E+02		2.6E+02	5.4E-01		1.2E-02	5.4E-01		4.2E+01	1.2E-02	3.4E+01						
VOC	p-Cymene	99-87-6																		
VOC	trans-1,2-Dichloroethene	156-60-5																		
SVOC	1,2,4-Trichlorobenzene	120-82-1		4.3E+00		3.5E+00	9.1E+00			9.1E+00										
SVOC	1,2-Dichlorobenzene	95-50-1		1.5E+01		1.2E+01	5.4E+01		2.1E+02	5.4E+01	5.9E-01	2.6E-01	4.0E-01	3.3E-01						
SVOC	1,3-Dichlorobenzene	541-73-1		8.8E-01		7.7E-01														
SVOC	1,4-Dichlorobenzene	106-46-7		5.2E+00		4.2E+00	9.1E-01			9.1E-01		9.3E-02		9.3E-02						
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1													9.0E-01					
SVOC	2,4,5-Trichlorophenol	95-95-4									1.7E-01		1.7E-01	1.7E-01						
SVOC	2,4-Dichlorophenol	120-83-2		4.1E+00		3.3E+00														
SVOC	2,4-Dimethylphenol	105-67-9		1.1E+01		8.7E+00	3.3E+01	6.1E-01	8.8E+01	3.3E+01	4.9E+00	1.9E+01	4.9E+00	1.6E+01						
SVOC	2,4-Dinitrotoluene	121-14-2										8.4E-01		8.4E-01						
SVOC	2,6-Dinitrotoluene	606-20-2					3.5E+00			3.5E+00										
SVOC	2-Chloronaphthalene	91-58-7																		
SVOC	2-Methylnaphthalene	91-57-6	3.4E-01	7.2E+01		5.8E+01	5.2E+02	1.6E-01	3.2E+01	5.2E+02	1.7E+01	6.0E+01	3.0E+01	5.1E+01	3.8E-01	3.1E-02		3.1E-02		
SVOC	2-Methylphenol	95-48-7		1.1E+01		9.0E+00	3.8E+01		1.2E+02	3.8E+01	4.7E+00	1.1E+01	4.7E+00	9.7E+00						
SVOC	3,3'-Dichlorobenzidine	91-94-1	2.1E-01			2.1E-01														
SVOC	4-Bromophenyl-phenylether	101-55-3																		
SVOC	4-Chloro-3-methylphenol	59-50-7																		
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3						7.5E-02												
SVOC	4-Methylphenol	106-44-5		1.3E+01		1.0E+01	5.3E+01		1.8E+02	5.3E+01	4.6E+00	1.0E+01	2.4E+00	9.0E+00	1.1E-01					2.7E-01
SVOC	4-Nitrophenol	100-02-7										6.6E-02		6.6E-02						
SVOC	Acenaphthene	83-32-9		1.1E+01		8.9E+00	1.5E+01			1.5E+01	3.6E-01	7.1E-01	3.6E-01	6.4E-01						2.3E-01
SVOC	Acenaphthylene	208-96-8	3.7E-01	5.5E+00		4.5E+00									3.7E-01	2.8E-01		2.8E-01		3.8E-02
SVOC	Anthracene	120-12-7	8.9E-02	1.1E+00		9.0E-01	1.3E+00	8.3E-02		1.3E+00	6.6E-01	1.2E+00	6.6E-01	1.1E+00	2.7E-01	2.6E-01		2.6E-01		4.2E-01
SVOC	Benzo(a)anthracene	56-55-3	5.9E-02			1.2E-02	2.7E+00	7.1E-01		2.7E+00	2.4E+00	2.1E+00	1.6E+00	2.2E+00	7.5E-01	3.6E-01		3.6E-01	8.9E-02	1.1E+00
SVOC	Benzo(a)pyrene	50-32-8	8.3E-02			1.7E-02	1.5E+00	6.9E-01		1.5E+00		1.4E+00	1.4E+00	1.4E+00	7.6E-01	4.0E-01		4.0E-01	1.1E-01	4.0E+00
SVOC	Benzo(b)fluoranthene	205-99-2	8.6E-02			1.7E-02	5.3E+00	6.0E-01		5.3E+00	4.3E-01	3.9E+00	2.2E+00	3.2E+00	8.3E-01	4.4E-01		4.4E-01	1.1E-01	4.8E+00
SVOC	Benzo(g,h,i)perylene	191-24-2					1.5E+00	4.6E-01		1.5E+00		1.1E+00	1.1E+00	1.1E+00	5.5E-01	3.0E-01		3.0E-01	2.2E-01	3.0E+00
SVOC	Benzo(k)fluoranthene	207-08-9	7.3E-02			1.5E-02	5.3E+00	6.9E-01		5.3E+00	4.3E-01	3.9E+00	2.2E+00	3.2E+00	8.2E-01	4.1E-01		4.1E-01	8.7E-02	2.4E+00
SVOC	Benzoic Acid	65-85-0		1.3E+01		1.3E+01	1.2E+02			1.2E+02		2.3E+02		1.9E+02	9.0E-01					7.3E-01
SVOC	Benzyl Alcohol	100-51-6					2.7E+01			2.7E+01										
SVOC	Butylbenzylphthalate	85-68-7		1.3E+02	1.6E-01	1.0E+02	4.2E+02	1.7E-01		4.2E+02	1.7E+01	3.4E+01	3.2E+01	3.0E+01					5.6E-02	
SVOC	Carbazole	86-74-8														3.6E-02		3.6E-02		4.0E-01
SVOC	Chrysene	218-01-9	7.4E-02			1.5E-02	3.8E+00	6.9E-01		3.8E+00	1.3E+00	1.6E+00	1.3E+00	1.5E+00	7.6E-01	3.9E-01		3.9E-01	1.1E-01	1.4E+00
SVOC	Di-n-butylphthalate	84-74-2	5.1E-02	8.6E+01	1.7E-01	6.8E+01	7.5E+01		5.0E+01	7.5E+01	1.5E+01	6.7E+01	4.3E+01	5.7E+01	7.6E-01	8.4E-02		8.4E-02	1.2E-01	6.6E-02
SVOC	Di-n-octylphthalate	117-84-0	1.1E-01	1.0E+01		8.1E+00	1.3E+01			1.3E+01	1.3E+00	1.6E+01	1.5E+01	1.3E+01						
SVOC	Dibenzo(a,h)anthracene	53-70-3						1.6E-01				2.7E-01	2.7E-01	2.7E-01	3.7E-01	2.9E-01		2.9E-01		4.2E-01
SVOC	Dibenzofuran	132-64-9		4.2E+00		3.4E+00	2.5E+00			2.5E+00	4.3E-01	6.4E-01	4.0E-01	6.0E-01						1.1E-01
SVOC	Diethylphthalate	84-66-2		1.6E+01		1.3E+01	2.5E+01			2.5E+01	1.5E-01	5.0E+00	2.6E+00	4.0E+00						

TABLE 3-2
Constituents and Exposure Concentrations (mg/kg) in Soil/Sediment
ACS NPL Site, Griffith, Indiana
Minimum of the 95th Percentile UCL and the Maximum Concentrations

Analyte Group	Substance	CASRN	Area 1 Surface	Area 1 Subsurface	Area 1 Sediment	Area 1 Exc (0-10')	Area 2 Subsurface	Area 2 Sediment	Area 2 Exc (0-4')	Area 2 Exc (0-10')	Area 3 Surface	Area 3 Subsurface	Area 3 Exc (0-4')	Area 3 Exc (0-10')	Area 4A Sediment	Area 4B Sediment	Area 4B Subsurface	Area 4B Exc (0-10')	Area 5A Surface	Area 6 Sediment
			C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{sed} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{sed} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{sed} (mg/kg)	C_{sed} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{soil} (mg/kg)	C_{sed} (mg/kg)
SVOC	Dimethylphthalate	131-11-3		5.4E+01		4.4E+01	2.6E+02		1.1E+02	2.6E+02	1.4E+00	1.0E+01	1.4E+00	8.6E+00						
SVOC	Fluoranthene	206-44-0	9.8E-02	3.8E+00		3.1E+00	4.1E+00	1.0E+00		4.1E+00	3.4E+00	6.1E+00	2.1E+00	5.6E+00	7.5E-01	4.0E-01		4.0E-01	1.5E-01	2.9E+00
SVOC	Fluorene	86-73-7		1.0E+01		8.5E+00	1.8E+01			1.8E+01	6.1E-01	9.8E-01	6.2E-01	9.1E-01						2.3E-01
SVOC	Hexachlorobenzene	118-74-1	2.9E-02			5.8E-03														
SVOC	Hexachlorobutadiene	87-68-3		6.0E+00		4.9E+00	1.4E+01			1.4E+01										
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	4.4E-02			8.8E-03	1.4E+00	3.8E-01		1.4E+00		8.2E-01	8.2E-01	8.2E-01	5.6E-01	3.4E-01		3.4E-01	8.7E-02	9.2E-01
SVOC	Isophorone	78-59-1	1.4E-01	2.2E+02		1.7E+02	2.3E+02		2.1E+02	2.3E+02	4.0E+01	6.0E+02	1.2E+02	4.9E+02		4.2E-02		4.2E-02		
SVOC	N-Nitroso-di-n-propylamine	621-64-7																		
SVOC	N-Nitrosodiphenylamine	86-30-6									4.3E+00	1.9E+00	3.1E+00	2.4E+00						
SVOC	Naphthalene	91-20-3		1.2E+02		9.3E+01	1.0E+02	1.1E-01	1.4E+02	1.0E+02	2.8E+01	1.3E+02	4.7E+01	1.1E+02	4.2E-01	2.5E-02		2.5E-02		2.6E-01
SVOC	Pentachlorophenol	87-86-5		2.0E+01		1.6E+01	4.6E+01			4.6E+01	1.5E+00	1.6E+01	1.5E+00	1.3E+01						
SVOC	Phenanthrene	85-01-8	6.1E-02	9.1E+00		7.3E+00	1.8E+01	4.4E-01		1.8E+01	3.1E+00	6.4E+00	3.7E+00	5.7E+00	6.6E-01	1.5E-01		1.5E-01	6.2E-02	1.5E+00
SVOC	Phenol	108-95-2		2.1E+01	1.9E-01	1.7E+01	5.5E+01		1.7E+02	5.5E+01	6.4E+00	2.1E+02	1.4E+01	1.7E+02						
SVOC	Pyrene	129-00-0	1.2E-01	5.9E+00		4.7E+00	8.0E+00	1.1E+00		8.0E+00	2.3E+00	4.2E+00	1.8E+00	3.8E+00	7.5E-01	3.9E-01		3.9E-01	1.6E-01	2.2E+00
SVOC	bis(2-Chloroethyl) ether	111-44-4		1.0E+01		8.2E+00	1.9E+01	5.6E-01		1.9E+01					4.3E-01					
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	9.8E+00	3.3E+02	1.3E+01	2.7E+02	3.4E+02	4.4E+00	1.1E+02	3.4E+02	4.3E+02	1.5E+03	3.9E+02	1.3E+03	1.1E+00	4.0E+00		4.0E+00	6.3E-01	4.6E-01
P/PCB	4,4'-DDD	72-54-8		3.6E+00		2.9E+00	1.5E+00			1.5E+00	1.5E-01		1.5E-01	1.5E-01		7.8E-02		7.8E-02		
P/PCB	4,4'-DDE	72-55-9					8.8E-01			8.8E-01						2.9E-01		2.9E-01	1.1E-02	
P/PCB	4,4'-DDT	50-29-3		4.8E+00		3.8E+00	1.2E+00			1.2E+00						2.4E-01		2.4E-01	1.4E-02	
P/PCB	Aldrin	309-00-2					6.0E+00			6.0E+00										
P/PCB	Arocior-1242	53469-21-9	4.0E-01	3.1E+01		2.5E+01					1.2E+01	2.9E+01	1.5E+02	2.6E+01						
P/PCB	Arocior-1248	12672-29-6	5.3E-01	2.1E+01	4.6E+00	1.7E+01	5.0E+01		1.3E+02	5.0E+01	7.0E+00	1.6E+01	4.1E+01	1.4E+01	4.7E+00	2.2E-01		2.2E-01	1.4E-01	
P/PCB	Arocior-1254	11097-69-1	2.4E+00	3.5E+01	1.7E+01	2.8E+01	3.6E+01		4.7E+00	3.6E+01	9.2E+00	9.5E+00	1.2E+01	9.5E+00	9.9E+00	8.8E+00		8.8E+00	3.2E-01	
P/PCB	Arocior-1260	11096-82-5	5.0E-01	2.2E+01		1.8E+01	3.5E+02		3.2E+01	3.5E+02		6.5E+00	1.5E+01	5.8E+00	3.5E+00	9.7E-01		9.7E-01	2.3E-01	
P/PCB	Dieldrin	60-57-1		2.4E-01		2.0E-01													5.0E-03	
P/PCB	Endosulfan I	959-98-8		1.2E+00		9.6E-01										3.9E-01		3.9E-01	3.5E-03	
P/PCB	Endosulfan sulfate	1031-07-8														6.0E-02		6.0E-02	2.3E-03	
P/PCB	Endrin	72-20-8		1.6E+00		1.3E+00										1.5E-01		1.5E-01	5.5E-03	
P/PCB	Endrin aldehyde	7421-93-4																	6.7E-03	
P/PCB	Endrin ketone	53494-70-5	1.1E-02			1.1E-02													7.0E-03	
P/PCB	Heptachlor	76-44-8									8.8E-02		8.8E-02	8.8E-02		6.2E-02		6.2E-02	1.3E-03	2.5E-03
P/PCB	Heptachlor epoxide	1024-57-3									4.2E-02		4.2E-02	4.2E-02					4.6E-03	
P/PCB	Methoxychlor	72-43-5														2.9E-01		2.9E-01	1.7E-02	
P/PCB	alpha-BHC	319-84-6					3.3E-01			3.3E-01									1.1E-03	
P/PCB	alpha-Chlordane	5103-71-9														2.2E-01		2.2E-01	1.0E-02	
P/PCB	beta-BHC	319-85-7					6.3E-01			6.3E-01						2.6E-02		2.6E-02		
P/PCB	gamma-BHC	58-89-9														2.9E-02		2.9E-02	5.0E-04	
P/PCB	gamma-Chlordane	5103-74-2		1.2E+00		9.8E-01										4.8E-02		4.8E-02	8.5E-03	
INORG	Antimony	7440-36-0	7.2E-01	1.6E+01		1.3E+01	6.5E+01		7.5E+01	6.5E+01	6.8E+01	1.5E+02	7.6E+01	1.4E+02	2.5E+00				1.5E+01	5.1E+00
INORG	Arsenic	7440-38-2	2.8E+00	4.3E+00	1.5E+00	4.0E+00	4.9E+00	1.0E+01	6.5E+00	4.9E+00	3.1E+01	3.7E+00	1.8E+01	9.1E+00	1.2E+01	7.6E+00		7.6E+00	3.4E+00	2.3E+01
INORG	Barium	7440-39-3	1.5E+02	2.3E+02	6.9E+01	2.2E+02	9.7E+02	9.1E+01	2.7E+03	9.7E+02	2.5E+03	2.4E+03	3.1E+03	2.4E+03	6.5E+01				1.2E+02	1.1E+02
INORG	Beryllium	7440-41-7	3.1E+00	2.1E-01	3.2E-01	7.9E-01	3.1E-01	4.7E-01		3.1E-01	1.5E+00	3.9E-01	8.8E-01	6.1E-01	6.2E-01				4.8E-01	7.2E-01
INORG	Cadmium	7440-43-9	1.7E+00	1.5E+01	1.3E+00	1.2E+01	1.1E+02	2.3E+00	5.2E+01	1.1E+02	1.6E+02	4.2E+02	1.6E+02	3.7E+02	4.2E+00	5.9E+00		5.9E+00	1.5E+00	9.0E-01
INORG	Chromium 3+	16065-83-1	2.7E+01	1.6E+02	1.8E+01	1.4E+02	1.3E+03	2.4E+01	7.1E+02	1.3E+03	1.1E+03	1.2E+03	1.4E+03	1.2E+03	5.0E+01	2.8E+01		2.8E+01	2.4E+01	2.7E+01
INORG	Chromium 6+	18540-29-9	4.6E+00	2.7E+01	3.0E+00	2.3E+01	2.1E+02	4.1E+00	1.2E+02	2.1E+02	1.9E+02	2.0E+02	2.4E+02	2.0E+02	8.4E+00	4.7E+00		4.7E+00	3.9E+00	4.5E+00
INORG	Cobalt	7440-48-4	3.6E+00	1.1E+01		9.2E+00	1.4E+01		1.9E+01	1.4E+01	5.7E+01	4.7E+01	7.6E+01	4.9E+01					5.6E+00	
INORG	Copper	7440-50-8	2.7E+01	6.5E+01	2.4E+01	5.7E+01	1.3E+03	3.7E+01	9.3E+02	1.3E+03	1.2E+03	2.0E+03	2.0E+03	1.8E+03	7.4E+01	3.7E+01		3.7E+01	2.0E+01	4.2E+01
INORG	Cyanide (total)	57-12-5	7.8E-01	9.5E+00		7.8E+00					4.8E+01	2.8E+01	5.7E+01	3.2E+01					1.3E-01	
INORG	Lead	7439-92-1	1.3E+02	8.4E+02	2.8E+02	7.0E+02	1.0E+04	1.5E+02	1.0E+04	1.0E+04	1.1E+04	6.7E+03	1.1E+04	7.5E+03	2.2E+02	1.4E+02		1.4E+02	8.3E+01	9.0E+01
INORG	Manganese	7439-96-5	1.2E+03	3.6E+02	2.2E+02	5.4E+02	2.4E+02	3.7E+02	3.3E+02	2.4E+02	1.5E+03	6.6E+02	1.1E+03	8.4E+02	2.3E+02				4.4E+02	4.2E+02
INORG	Mercury	7439-97-6	3.9E+00	2.3E+00	7.1E-01	2.6E+00	7.9E+00	1.3E-01	7.9E+00	7.9E+00	9.5E+00	1.0E+01	8.7E+00	1.0E+01	1.2E+00	4.5E-01		4.5E-01	7.0E-02	
INORG	Nickel	7440-02-0	7.7E+00	8.6E+00		8.4E+00	2.5E+01	1.4E+01	5.3E+01	2.5E+01	5.3E+01	5.5E+01	9.2E+01	5.5E+01	1.7E+01				1.7E+01	4.1E+01
INORG	Selenium	7782-49-2	4.3E-01	6.0E-01		5.7E-01	2.8E+00		4.3E+00	2.8E+00	1.7E+01	3.8E+01	1.1E+01	3.4E+01	7.7E-01				5.7E-01	
INORG	Silver	7440-22-4	2.9E-01			2.9E-01	9.8E+00		1.5E+01	9.8E+00		8.1E+01	1.2E+01	6.6E+01					1.1E+00	
INORG	Thallium	7440-28-0					7.2E-01			7.2E-01		8.0E-01		7.6E-01	9.5E-01					
INORG	Vanadium	7440-62-2	1.2E+01	1.1E+01	6.2E+00	1.1E+01	9.6E+00	1.4E+01	1.0E+01	9.6E+00	2.6E+01	1.9E+01	3.7E+01	2.0E+01	3.4E+01				1.2E+01	3.5E+01
INORG	Zinc	7440-66-6	9.7E+01	3.6E+02	1.1E+02	3.1E+02	3.3E+03	1.2E+02	5.2E+03	3.3E+03	1.5E+04	1.6E+04	1.3E+04	1.6E+04	1.8E+02	3.0E+02		3.0E+02	1.2E+02	2.7E+02
TIC	Acetaldehyde	75-07-0																		
TIC	Acetophenone	98-86-2																		
TIC	Butanol, 1-	71-36-3																		
TIC	Caprolactam	105-60-2																		
TIC	Chlorodifluoromethane	75-45-6																		
TIC	Cyclohexanone	108-94-1																		
TIC	Diethyl ether	60-29-7																		
TIC	Dioxane, 1,4-	123-91-1																		
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																		
TIC	Hexane, n-	110-54-3					1.5E-01			1.5E-01										
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																		
TIC	Phthalic anhydride	85-44-9		5.8E+00		4.6E+00														1.3E+00

TABLE 3-3
Constituents and Exposure Concentrations (mg/L) in Ground Water, Surface Water, and Tap Water
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Area 1 Upper Aquifer Area 1 - Max C_{gw} (mg/L)	Area 1 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 1 Surface Water Area 1 - UCL/Max C_{sw} (mg/L)	Area 2 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 2 Surface Water Area 2 - UCL/Max C_{sw} (mg/L)	Area 3 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 4A Surface Water Area 4A C_{sw} (mg/L)	Area 4B Surface Water Area 4B- UCL/Max C_{sw} (mg/L)	Area 4B Upper Aquifer Area 4B - Max C_{gw} (mg/L)	Area 4B Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 5A Private Well PW-S C_{tw} (mg/L)	Area 5A Lower Aquifer Area 5 - Max C_{gw} (mg/L)	Area 5A Upper Aquifer MW6,MW45 - UCL/Max C_{gw} (mg/L)	Area 5B Upper Aquifer MW48 - UCL/Max C_{gw} (mg/L)
VOC	1,1,1-Trichloroethane	71-55-6								1.6E-01						
VOC	1,1,2,2-Tetrachloroethane	79-34-5								1.0E-03						
VOC	1,1,2-Trichloroethane	79-00-5								3.0E-03						
VOC	1,1-Dichloroethane	75-34-3	2.6E-02	6.0E-03	2.0E-03	6.0E-03	1.0E-03	6.0E-03		2.4E-01	6.0E-03	6.0E-03			2.1E-02	
VOC	1,1-Dichloroethene	75-35-4														
VOC	1,2,4-Trimethylbenzene	95-63-6								3.2E-02						
VOC	1,2-Dichloroethane	107-06-2								6.0E-03	2.0E-03				3.0E-03	
VOC	1,2-Dichloroethene (total)	540-59-0	1.4E-02		1.0E-03		3.0E-03				4.0E-03				2.6E-02	
VOC	1,2-Dichloropropane	78-87-5														
VOC	1,3,5-Trimethylbenzene	108-67-8								1.1E-02						
VOC	2-Butanone	78-93-3			3.3E-02		1.4E-01		7.0E-04					5.5E-03		
VOC	2-Hexanone	591-78-6														
VOC	4-Methyl-2-pentanone	108-10-1	6.0E-03	9.0E-03		9.0E-03	4.9E-02	9.0E-03				9.0E-03			2.0E-03	
VOC	Acetone	67-64-1		2.2E-02	5.0E-03	2.2E-02	3.8E-01	2.2E-02	1.3E-02			2.2E-02		2.0E-02		
VOC	Benzene	71-43-2	1.0E+02	3.1E-01		3.1E-01	4.6E-01	3.1E-01	4.0E-01	1.1E-01	1.0E+02	3.1E-01			1.2E+00	8.6E+00
VOC	Bromodichloromethane	75-27-4		6.0E-04		6.0E-04		6.0E-04				6.0E-04				9.0E-04
VOC	Carbon Disulfide	75-15-0		2.0E-04		2.0E-04		2.0E-04				2.0E-04		4.0E-04		
VOC	Carbon Tetrachloride	56-23-5														
VOC	Chlorobenzene	108-90-7	9.6E-02							1.0E-03					3.7E-02	
VOC	Chloroethane	75-00-3	1.9E+00	2.9E+00		2.9E+00	3.0E-02	2.9E+00	1.1E-01	2.7E-02	1.9E+00	2.9E+00			3.3E-01	1.0E+00
VOC	Chloroform	67-66-3		1.0E-03		1.0E-03		1.0E-03		7.0E-03		1.0E-03		3.0E-03		1.0E-03
VOC	Chloromethane	74-87-3	6.8E-02	1.0E-03		1.0E-03		1.0E-03			6.8E-02	1.0E-03		3.0E-04		3.8E-02
VOC	Ethyl Benzene	100-41-4	1.1E+00	1.5E-03		1.5E-03	6.0E-03	1.5E-03		5.0E-03	7.8E-01	1.5E-03			7.4E-01	
VOC	Methylene Chloride	75-09-2	1.0E-03	1.3E-01		1.3E-01		1.3E-01			7.0E-02	1.3E-01			1.7E-02	7.0E-02
VOC	Styrene	100-42-5														
VOC	Tetrachloroethene	127-18-4		8.5E-03		8.5E-03		8.5E-03		1.0E-03		8.5E-03				
VOC	Tetrahydrofuran	109-99-9														
VOC	Toluene	108-88-3	2.3E+00	3.0E-03		3.0E-03	7.0E-03	3.0E-03		4.5E-02	2.3E+00	3.0E-03		1.0E-03		2.0E-03
VOC	Trichloroethene	79-01-6		5.5E-03		5.5E-03		5.5E-03		3.0E-03		5.5E-03				
VOC	Vinyl Chloride	75-01-4	1.6E-02	1.3E-01		1.3E-01		1.3E-01		1.4E-01	9.0E-04	1.3E-01			4.0E-03	
VOC	Xylenes (total)	1330-20-7	3.0E+00	6.0E-03		6.0E-03	3.5E-02	6.0E-03			3.0E+00	6.0E-03			3.9E+00	
VOC	cis-1,2-Dichloroethene	156-59-2		3.9E-02		3.9E-02		3.9E-02		1.9E-01	2.0E-04	3.9E-02			2.0E-03	
VOC	m,p-xylene	136777-61-2								1.6E-02						
VOC	ortho-xylene	95-47-6								2.9E-02						
VOC	p-Cymene	99-87-6								1.0E-03						
VOC	trans-1,2-Dichloroethene	156-60-5		2.0E-03		2.0E-03		2.0E-03		3.0E-03	4.0E-03	2.0E-03			3.0E-03	1.0E-03
SVOC	1,2,4-Trichlorobenzene	120-82-1														
SVOC	1,2-Dichlorobenzene	95-50-1	5.1E-02							7.0E-03	5.1E-02				5.0E-03	
SVOC	1,3-Dichlorobenzene	541-73-1	3.0E-03							1.0E-03						
SVOC	1,4-Dichlorobenzene	106-46-7	1.0E-02							1.0E-03	3.0E-03				1.1E-02	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	3.0E-01	6.5E-03		6.5E-03		6.5E-03	1.4E-02		3.0E-01	6.5E-03			7.0E-03	
SVOC	2,4,5-Trichlorophenol	95-95-4														
SVOC	2,4-Dichlorophenol	120-83-2														
SVOC	2,4-Dimethylphenol	105-67-9	1.1E-01				1.2E-02				1.1E-01				2.0E-02	
SVOC	2,4-Dinitrotoluene	121-14-2														
SVOC	2,6-Dinitrotoluene	606-20-2														9.0E-04
SVOC	2-Chloronaphthalene	91-58-7														
SVOC	2-Methylnaphthalene	91-57-6	2.7E-02												6.0E-03	
SVOC	2-Methylphenol	95-48-7	1.3E-02	2.0E-03		2.0E-03	5.0E-03	2.0E-03				2.0E-03				
SVOC	3,3'-Dichlorobenzidine	91-94-1														
SVOC	4-Bromophenyl-phenylether	101-55-3														
SVOC	4-Chloro-3-methylphenol	59-50-7	9.0E-03	4.0E-03		4.0E-03	2.0E-03	4.0E-03				4.0E-03				
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3														
SVOC	4-Methylphenol	106-44-5	7.8E-02	1.1E-02		1.1E-02	9.0E-03	1.1E-02	1.0E-03		7.8E-02	1.1E-02				
SVOC	4-Nitrophenol	100-02-7		1.9E-02		1.9E-02		1.9E-02				1.9E-02				
SVOC	Acenaphthene	83-32-9														
SVOC	Acenaphthylene	208-96-8														
SVOC	Anthracene	120-12-7		9.0E-04		9.0E-04		9.0E-04				9.0E-04				
SVOC	Benzo(a)anthracene	56-55-3														
SVOC	Benzo(a)pyrene	50-32-8														
SVOC	Benzo(b)fluoranthene	205-99-2														
SVOC	Benzo(g,h,i)perylene	191-24-2														
SVOC	Benzo(k)fluoranthene	207-08-9		1.0E-03		1.0E-03		1.0E-03				1.0E-03			3.0E-03	
SVOC	Benzoic Acid	65-85-0	1.3E-02											6.0E-03	1.1E-02	
SVOC	Benzyl Alcohol	100-51-6														
SVOC	Butylbenzylphthalate	85-68-7														
SVOC	Carbazole	86-74-8														
SVOC	Chrysene	218-01-9													3.0E-03	
SVOC	Di-n-butylphthalate	84-74-2		1.0E-03		1.0E-03		1.0E-03				1.0E-03		1.0E-03		
SVOC	Di-n-octylphthalate	117-84-0	2.1E-02	1.0E-02		1.0E-02		1.0E-02				1.0E-02			1.5E-02	
SVOC	Dibenzo(a,h)anthracene	53-70-3														

TABLE 3-3
Constituents and Exposure Concentrations (mg/L) in Ground Water, Surface Water, and Tap Water
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Area 1 Upper Aquifer Area 1 - Max C_{gw} (mg/L)	Area 1 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 1 Surface Water Area 1 - UCL/Max C_{sw} (mg/L)	Area 2 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 2 Surface Water Area 2 - UCL/Max C_{sw} (mg/L)	Area 3 Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 4A Surface Water Area 4A C_{sw} (mg/L)	Area 4B Surface Water Area 4B- UCL/Max C_{sw} (mg/L)	Area 4B Upper Aquifer Area 4B - Max C_{gw} (mg/L)	Area 4B Lower Aquifer On-Site - Max C_{gw} (mg/L)	Area 5A Private Well PW-S C_{tw} (mg/L)	Area 5A Lower Aquifer Area 5 - Max C_{gw} (mg/L)	Area 5A Upper Aquifer MW6,MW45 - UCL/Max C_{gw} (mg/L)	Area 5B Upper Aquifer MW48 - UCL/Max C_{gw} (mg/L)
SVOC	Dibenzofuran	132-64-9														
SVOC	Diethylphthalate	84-66-2	9.0E-03	2.9E-03		2.9E-03		2.9E-03			9.0E-03	2.9E-03			2.0E-03	
SVOC	Dimethylphthalate	131-11-3												9.0E-03		
SVOC	Fluoranthene	206-44-0														
SVOC	Fluorene	86-73-7														
SVOC	Hexachlorobenzene	118-74-1														
SVOC	Hexachlorobutadiene	87-68-3														
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5														
SVOC	Isophorone	78-59-1		5.0E-03		5.0E-03	5.0E-03	5.0E-03	2.0E-03		7.5E-03	5.0E-03			1.6E-02	1.0E-03
SVOC	N-Nitroso-di-n-propylamine	621-64-7		6.5E-03		6.5E-03		6.5E-03				6.5E-03				
SVOC	N-Nitrosodiphenylamine	86-30-6														
SVOC	Naphthalene	91-20-3	7.1E-02							8.0E-03	3.0E-03				6.4E-02	
SVOC	Pentachlorophenol	87-86-5													3.0E-03	
SVOC	Phenanthrene	85-01-8														
SVOC	Phenol	108-95-2	2.4E-01	3.4E-01		3.4E-01	2.3E-02	3.4E-01			2.4E-01	3.4E-01		3.3E-01	4.1E-02	9.9E-02
SVOC	Pyrene	129-00-0														
SVOC	bis(2-Chloroethyl) ether	111-44-4	1.6E-01	4.4E-02		4.4E-02	7.7E-02	4.4E-02	5.5E-03		1.6E-01	4.4E-02			5.5E-02	1.8E-02
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	5.0E-03	9.3E-02		9.3E-02		9.3E-02	5.5E-03		1.6E-02	9.3E-02		5.6E-02	1.1E-02	4.0E-03
P/PCB	4,4'-DDD	72-54-8		2.0E-06		2.0E-06		2.0E-06				2.0E-06				
P/PCB	4,4'-DDE	72-55-9														
P/PCB	4,4'-DDT	50-29-3														
P/PCB	Aldrin	309-00-2		6.0E-06		6.0E-06		6.0E-06				6.0E-06				
P/PCB	Aroclor-1242	53469-21-9														
P/PCB	Aroclor-1248	12672-29-6	2.6E-03	1.9E-04	8.4E-04	1.9E-04		1.9E-04			2.6E-03	1.9E-04				
P/PCB	Aroclor-1254	11097-69-1														
P/PCB	Aroclor-1260	11096-82-5														
P/PCB	Dieldrin	60-57-1														
P/PCB	Endosulfan I	959-98-8														
P/PCB	Endosulfan sulfate	1031-07-8														
P/PCB	Endrin	72-20-8														
P/PCB	Endrin aldehyde	7421-93-4		1.1E-05		1.1E-05		1.1E-05				1.1E-05				
P/PCB	Endrin ketone	53494-70-5														
P/PCB	Heptachlor	76-44-8		8.0E-06		8.0E-06		8.0E-06				8.0E-06				
P/PCB	Heptachlor epoxide	1024-57-3														
P/PCB	Methoxychlor	72-43-5														
P/PCB	alpha-BHC	319-84-6		3.0E-05		3.0E-05		3.0E-05				3.0E-05				
P/PCB	alpha-Chlordane	5103-71-9														
P/PCB	beta-BHC	319-85-7													2.9E-05	
P/PCB	gamma-BHC	58-89-9														
P/PCB	gamma-Chlordane	5103-74-2													2.0E-05	
INORG	Antimony	7440-36-0		6.8E-03		6.8E-03		6.8E-03			2.0E-03	6.8E-03			1.8E-03	1.2E-03
INORG	Arsenic	7440-38-2	5.7E-02	1.3E-01		1.3E-01	4.5E-02	1.3E-01	2.3E-03		4.6E-02	1.3E-01	3.8E-03	4.9E-03	7.6E-02	1.1E-02
INORG	Barium	7440-39-3	7.9E-01	1.6E+00		1.6E+00	3.3E-01	1.6E+00	1.2E-01		5.2E-01	1.6E+00	1.5E-01	6.3E-01	2.6E-01	1.5E-01
INORG	Beryllium	7440-41-7		6.2E-03		6.2E-03	2.8E-04	6.2E-03			1.3E-03	6.2E-03		1.1E-03		8.9E-04
INORG	Cadmium	7440-43-9	3.1E-03	3.6E-02	7.2E-04	3.6E-02		3.6E-02	9.0E-03		3.1E-03	3.6E-02		1.1E-03	5.8E-04	
INORG	Chromium 3+	16065-83-1		3.1E-01	7.1E-03	3.1E-01	2.4E-02	3.1E-01			9.4E-03	3.1E-01		9.3E-02	2.1E-02	5.1E-03
INORG	Chromium 6+	18540-29-9		5.1E-02	1.2E-03	5.1E-02	4.0E-03	5.1E-02			1.6E-03	5.1E-02		1.5E-02	3.6E-03	8.4E-04
INORG	Cobalt	7440-48-4		2.5E-02		2.5E-02		2.5E-02			3.5E-03	2.5E-02		6.7E-03	4.2E-03	3.5E-03
INORG	Copper	7440-50-8		1.1E-01	2.2E-02	1.1E-01		1.1E-01			2.2E-02	1.1E-01		1.3E-01	2.7E-02	1.3E-02
INORG	Cyanide (total)	57-12-5	1.0E-02	1.0E-02		1.0E-02		1.0E-02	3.6E-03			1.0E-02			9.8E-03	
INORG	Lead	7439-92-1		3.0E-01	2.4E-02	3.0E-01	4.2E-03	3.0E-01	6.4E-02		7.7E-03	3.0E-01		1.2E-02	1.4E-02	4.4E-03
INORG	Manganese	7439-96-5	4.3E+00	1.7E+00	5.2E-02	1.7E+00	9.9E-01	1.7E+00	9.4E-01		4.3E+00	1.7E+00	2.6E-02	2.6E-01	2.0E+00	6.6E-01
INORG	Mercury	7439-97-6		6.7E-04		6.7E-04		6.7E-04	1.4E-04			6.7E-04				2.0E-04
INORG	Nickel	7440-02-0	5.3E-02	2.6E-01		2.6E-01	8.0E-02	2.6E-01			7.1E-01	2.6E-01		7.4E-02	4.9E-02	1.7E-02
INORG	Selenium	7782-49-2	6.2E-03	3.2E-03		3.2E-03		3.2E-03				3.2E-03		3.0E-03	1.5E-03	
INORG	Silver	7440-22-4														
INORG	Thallium	7440-28-0	3.6E-03	4.1E-03		4.1E-03		4.1E-03			4.0E-03	4.1E-03		3.6E-03		2.5E-03
INORG	Vanadium	7440-62-2	2.0E-02	3.2E-02		3.2E-02		3.2E-02			2.0E-02	3.2E-02		1.3E-02	7.3E-03	2.4E-03
INORG	Zinc	7440-66-6	5.1E-01	3.3E+01	6.1E-02	3.3E+01	5.3E-02	3.3E+01	2.0E-01		5.1E-01	3.3E+01		4.2E-02	2.0E-01	4.6E-03
TIC	Acetaldehyde	75-07-0		3.0E-03		3.0E-03		3.0E-03				3.0E-03				
TIC	Acetophenone	98-86-2													9.0E-03	
TIC	Butanol, 1-	71-36-3														
TIC	Caprolactam	105-60-2	3.8E-02											6.0E-03		
TIC	Chlorodifluoromethane	75-45-6													1.4E-02	
TIC	Cyclohexanone	108-94-1														
TIC	Diethyl ether	60-29-7	4.2E-02											6.0E-03	1.9E-01	
TIC	Dioxane, 1,4-	123-91-1		5.5E-02		5.5E-02		5.5E-02				5.5E-02				
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5												6.6E-02		
TIC	Hexane, n-	110-54-3														
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7												1.0E-02	3.0E-03	
TIC	Phthalic anhydride	85-44-9														

Table 3-4a:
Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Current	Current	Current	Current	Current	Current	Current	Current
	Location of Exposure:		AREA 1	AREA 1	AREA 4A	AREA 4B	Area 5A	Area 5A	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Undeveloped	Undeveloped	Routine/Undevel	Excavation	Routine/Undevel	Excavation
	Location of Emission:		All on-site areas	At Area	All on-site areas	All on-site areas	All on-site areas	Area 1	All on-site areas	Area 1
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.20E-04	3.35E-01	1.99E-05	4.48E-05	1.61E-04	1.21E-04	3.49E-05	7.23E-05
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.33E-07	1.33E-04	2.21E-08	4.97E-08	1.79E-07	4.78E-08	3.87E-08	2.87E-08
VOC	1,1,2-Trichloroethane	79-00-5	4.04E-07	6.08E-04	1.58E-08	7.74E-08	1.08E-08	2.19E-07	6.06E-09	1.31E-07
VOC	1,1-Dichloroethane	75-34-3	1.03E-04	4.85E-03	1.72E-05	3.87E-05	1.40E-04	1.74E-06	3.02E-05	1.05E-06
VOC	1,1-Dichloroethene	75-35-4								
VOC	1,2,4-Trimethylbenzene	95-63-6								
VOC	1,2-Dichloroethane	107-06-2	4.13E-05	5.29E-03	6.88E-06	1.55E-05	5.56E-05	1.91E-06	1.20E-05	1.14E-06
VOC	1,2-Dichloroethene (total)	540-59-0	1.78E-04	4.19E-02	3.03E-05	6.82E-05	3.03E-04	1.51E-05	5.97E-05	9.05E-06
VOC	1,2-Dichloropropane	78-87-5	4.08E-05	3.04E-03	6.81E-06	1.53E-05	5.53E-05	1.10E-06	1.19E-05	6.57E-07
VOC	1,3,5-Trimethylbenzene	108-67-8								
VOC	2-Butanone	78-93-3	4.57E-06	1.77E-05	7.20E-05	3.30E-06	1.31E-06	6.38E-09	3.15E-06	3.83E-09
VOC	2-Hexanone	591-78-6	8.89E-04		1.48E-04	3.33E-04	1.20E-03		2.59E-04	
VOC	4-Methyl-2-pentanone	108-10-1	1.05E-04	1.15E-02	1.76E-05	3.96E-05	1.42E-04	4.13E-06	3.08E-05	2.48E-06
VOC	Acetone	67-64-1	2.35E-04	1.94E-02	1.33E-03	1.17E-04	2.29E-04	7.00E-06	1.02E-04	4.20E-06
VOC	Benzene	71-43-2	5.91E-03	7.27E-01	9.14E-02	4.71E-03	1.80E-03	2.62E-04	4.03E-03	1.57E-04
VOC	Bromodichloromethane	75-27-4								
VOC	Carbon Disulfide	75-15-0	6.10E-08	1.18E-06	2.39E-09	1.17E-08	1.63E-09	4.24E-10	9.15E-10	2.55E-10
VOC	Carbon Tetrachloride	56-23-5								
VOC	Chlorobenzene	108-90-7	5.85E-06	1.28E-03	1.48E-06	3.24E-06	5.07E-05	4.62E-07	7.05E-06	2.77E-07
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	2.77E-02	1.28E-03	4.96E-04	5.04E-06	1.21E-03	3.02E-06
VOC	Chloroform	67-66-3	1.44E-04	5.48E-02	2.40E-05	5.40E-05	1.94E-04	1.97E-05	4.20E-05	1.18E-05
VOC	Chloromethane	74-87-3								
VOC	Ethyl Benzene	100-41-4	6.68E-04	5.70E-02	1.17E-04	2.65E-04	1.37E-03	2.05E-05	2.53E-04	1.23E-05
VOC	Methylene Chloride	75-09-2	3.54E-04	7.55E-02	5.91E-05	1.33E-04	4.81E-04	2.72E-05	1.04E-04	1.63E-05
VOC	Styrene	100-42-5	2.78E-05	3.10E-03	5.14E-06	1.15E-05	8.05E-05	1.12E-06	1.35E-05	6.70E-07
VOC	Tetrachloroethene	127-18-4	1.66E-03	6.58E-02	3.01E-04	6.73E-04	4.43E-03	2.37E-05	7.55E-04	1.42E-05
VOC	Tetrahydrofuran	109-99-9								
VOC	Toluene	108-88-3	7.45E-03	1.36E-01	1.31E-03	2.94E-03	1.54E-02	4.90E-05	2.85E-03	2.94E-05
VOC	Trichloroethene	79-01-6	4.89E-04	5.01E-02	8.84E-05	1.98E-04	1.27E-03	1.80E-05	2.19E-04	1.08E-05
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-07	2.06E-06	7.39E-06	4.34E-08	1.60E-06	2.60E-08
VOC	Xylenes (total)	1330-20-7	4.30E-03	7.26E-02	7.34E-04	1.67E-03	8.73E-03	2.61E-05	1.60E-03	1.57E-05
VOC	cis-1,2-Dichloroethene	156-59-2	1.62E-06	2.09E-01	2.71E-07	6.10E-07	2.19E-06	7.52E-05	4.74E-07	4.51E-05
VOC	m,p-xylene	136777-61-2	9.38E-06	5.68E-02	1.56E-06	3.52E-06	1.26E-05	2.05E-05	2.74E-06	1.23E-05
VOC	ortho-xylene	95-47-6	4.51E-06	2.48E-02	7.52E-07	1.69E-06	6.07E-06	8.91E-06	1.32E-06	5.35E-06
VOC	p-Cymene	99-87-6								
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		4.02E-10	2.38E-08	1.21E-10		9.87E-11	
SVOC	1,2,4-Trichlorobenzene	120-82-1	9.61E-06	4.69E-05	1.60E-06	3.60E-06	1.29E-05	1.69E-08	2.80E-06	1.01E-08
SVOC	1,2-Dichlorobenzene	95-50-1	1.86E-04	7.28E-04	3.11E-05	7.01E-05	2.53E-04	2.62E-07	5.46E-05	1.57E-07
SVOC	1,3-Dichlorobenzene	541-73-1		1.46E-05				5.24E-09		3.15E-09
SVOC	1,4-Dichlorobenzene	106-46-7	3.55E-06	2.37E-04	5.92E-07	1.34E-06	4.78E-06	8.52E-08	1.04E-06	5.11E-08
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1	9.26E-05	9.18E-04	1.47E-03	6.82E-05	2.62E-05	3.31E-07	6.40E-05	1.98E-07
SVOC	2,4,5-Trichlorophenol	95-95-4	2.16E-09		5.46E-10	1.20E-09	1.87E-08		2.60E-09	
SVOC	2,4-Dichlorophenol	120-83-2		1.44E-05				5.17E-09		3.10E-09
SVOC	2,4-Dimethylphenol	105-67-9	6.19E-06	5.21E-05	1.04E-06	2.81E-06	9.08E-06	1.88E-08	1.90E-06	1.13E-08
SVOC	2,4-Dinitrotoluene	121-14-2								
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-07	3.69E-07	1.33E-06		2.87E-07	
SVOC	2-Chloronaphthalene	91-58-7								
SVOC	2-Methylnaphthalene	91-57-6	4.12E-05	4.02E-04	4.69E-06	1.24E-05	4.80E-05	1.45E-07	8.99E-06	8.68E-08
SVOC	2-Methylphenol	95-48-7	1.69E-05	4.72E-05	2.84E-06	6.38E-06	2.45E-05	1.70E-08	5.15E-06	1.02E-08
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.32E-10	1.17E-08	5.16E-12	2.52E-11	3.51E-12	4.20E-12	1.97E-12	2.52E-12
SVOC	4-Bromophenyl-phenylether	101-55-3								
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06				6.96E-10		4.18E-10
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3								
SVOC	4-Methylphenol	106-44-5	6.20E-05	1.38E-04	1.17E-05	2.36E-05	8.79E-05	4.97E-08	1.87E-05	2.98E-08

Table 3-4a:

Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use

ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Current	Current	Current	Current	Current	Current	Current
			Location of Exposure:	AREA 1	AREA 1	AREA 4A	AREA 4B	Area 5A	Area 5A	AREA 6	AREA 6
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Undeveloped	Undeveloped	Routine/Undevel	Excavation	Routine/Undevel	Excavation
			Location of Emission:	All on-site areas	At Area	All on-site areas	All on-site areas	All on-site areas	Area 1	All on-site areas	Area 1
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Nitrophenol	100-02-7									
SVOC	Acenaphthene	83-32-9		3.51E-06	2.41E-05	5.85E-07	1.32E-06	4.80E-06	8.69E-09	1.03E-06	5.21E-09
SVOC	Acenaphthylene	208-96-8		1.09E-06	9.32E-06	4.28E-08	2.09E-07	2.91E-08	3.35E-09	1.64E-08	2.01E-09
SVOC	Anthracene	120-12-7		1.93E-07	7.40E-07	1.98E-08	5.48E-08	1.65E-07	2.66E-10	3.32E-08	1.60E-10
SVOC	Benzo(a)anthracene	56-55-3		1.49E-10	6.56E-10	2.10E-11	5.09E-11	2.28E-10	2.36E-13	4.27E-11	1.42E-13
SVOC	Benzo(a)pyrene	50-32-8		1.08E-10	9.17E-10	1.14E-11	3.11E-11	7.74E-11	3.30E-13	1.72E-11	1.98E-13
SVOC	Benzo(b)fluoranthene	205-99-2		2.55E-10	9.56E-10	3.58E-11	8.61E-11	2.86E-10	3.44E-13	6.12E-11	2.06E-13
SVOC	Benzo(g,h,i)perylene	191-24-2		5.64E-11		9.40E-12	2.12E-11	7.60E-11		1.65E-11	
SVOC	Benzo(k)fluoranthene	207-08-9		2.47E-10	8.06E-10	3.55E-11	8.45E-11	2.86E-10	2.90E-13	6.11E-11	1.74E-13
SVOC	Benzoic Acid	65-85-0		1.59E-04	2.00E-04	2.65E-05	5.96E-05	2.14E-04	7.19E-08	4.64E-05	4.31E-08
SVOC	Benzyl Alcohol	100-51-6		9.97E-10		1.66E-10	3.74E-10	1.34E-09		2.91E-10	
SVOC	Butylbenzylphthalate	85-68-7		1.59E-08	5.58E-06	2.65E-09	5.96E-09	2.19E-08	2.01E-09	4.70E-09	1.21E-09
SVOC	Carbazole	86-74-8									
SVOC	Chrysene	218-01-9		1.95E-10	8.22E-10	2.71E-11	6.56E-11	2.43E-10	2.96E-13	4.92E-11	1.78E-13
SVOC	Di-n-butylphthalate	84-74-2		2.93E-09	3.80E-06	4.90E-10	1.11E-09	4.39E-09	1.37E-09	9.06E-10	8.21E-10
SVOC	Di-n-octylphthalate	117-84-0		5.64E-10	4.47E-07	8.56E-11	2.00E-10	7.09E-10	1.61E-10	1.50E-10	9.67E-11
SVOC	Dibenzo(a,h)anthracene	53-70-3									
SVOC	Dibenzofuran	132-64-9		9.59E-11	1.90E-07	1.61E-11	3.63E-11	1.43E-10	6.85E-11	2.97E-11	4.11E-11
SVOC	Diethylphthalate	84-66-2		9.31E-10	6.98E-07	1.55E-10	3.49E-10	1.26E-09	2.51E-10	2.72E-10	1.51E-10
SVOC	Dimethylphthalate	131-11-3		9.79E-09	2.42E-06	1.63E-09	3.67E-09	1.32E-08	8.71E-10	2.86E-09	5.22E-10
SVOC	Fluoranthene	206-44-0		2.30E-10	1.70E-07	3.18E-11	7.78E-11	3.37E-10	6.12E-11	6.37E-11	3.67E-11
SVOC	Fluorene	86-73-7		1.83E-06	1.04E-05	3.05E-07	6.87E-07	2.52E-06	3.74E-09	5.40E-07	2.24E-09
SVOC	Hexachlorobenzene	118-74-1		1.82E-11	3.22E-10	7.12E-13	3.48E-12	4.85E-13	1.16E-13	2.73E-13	6.96E-14
SVOC	Hexachlorobutadiene	87-68-3		5.14E-10	2.71E-07	8.56E-11	1.93E-10	6.92E-10	9.77E-11	1.50E-10	5.86E-11
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5		8.02E-11	4.89E-10	9.86E-12	2.50E-11	7.17E-11	1.76E-13	1.58E-11	1.05E-13
SVOC	Isophorone	78-59-1		1.90E-04	1.56E-03	6.82E-05	7.23E-05	2.77E-04	5.62E-07	5.91E-05	3.37E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7									
SVOC	N-Nitrosodiphenylamine	86-30-6		6.15E-08		1.56E-08	3.41E-08	5.33E-07		7.41E-08	
SVOC	Naphthalene	91-20-3		9.43E-05	1.29E-03	1.60E-05	3.59E-05	1.48E-04	4.66E-07	3.02E-05	2.79E-07
SVOC	Pentachlorophenol	87-86-5		1.74E-09	8.77E-07	2.91E-10	6.55E-10	2.40E-09	3.16E-10	5.15E-10	1.89E-10
SVOC	Phenanthrene	85-01-8		7.18E-10	4.03E-07	1.16E-10	2.65E-10	1.02E-09	1.45E-10	2.11E-10	8.71E-11
SVOC	Phenol	108-95-2		3.78E-05	1.41E-04	6.35E-06	1.53E-05	5.45E-05	5.06E-08	1.15E-05	3.04E-08
SVOC	Pyrene	129-00-0		3.86E-10	2.64E-07	5.56E-11	1.33E-10	4.94E-10	9.49E-11	1.01E-10	5.69E-11
SVOC	bis(2-Chloroethyl) ether	111-44-4		4.89E-05	3.66E-04	2.36E-04	2.40E-05	5.03E-05	1.32E-07	2.01E-05	7.90E-08
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7		2.09E-08	1.48E-05	2.86E-09	7.05E-09	3.37E-08	5.31E-09	6.10E-09	3.19E-09
P/PCB	4,4'-DDD	72-54-8		5.54E-11	1.60E-07	9.29E-12	2.09E-11	7.94E-11	5.77E-11	1.68E-11	3.46E-11
P/PCB	4,4'-DDE	72-55-9		3.31E-11		5.52E-12	1.24E-11	4.46E-11		9.65E-12	
P/PCB	4,4'-DDT	50-29-3		4.69E-11	2.14E-07	7.81E-12	1.76E-11	6.32E-11	7.70E-11	1.37E-11	4.62E-11
P/PCB	Aldrin	309-00-2		2.27E-10		3.78E-11	8.51E-11	3.06E-10		6.62E-11	
P/PCB	Aroclor-1242	53469-21-9		3.07E-10	1.37E-06	2.33E-11	7.78E-11	4.63E-10	4.92E-10	6.72E-11	2.95E-10
P/PCB	Aroclor-1248	12672-29-6		2.23E-09	9.41E-07	3.32E-10	7.81E-10	2.79E-09	3.39E-10	5.86E-10	2.03E-10
P/PCB	Aroclor-1254	11097-69-1		2.90E-09	1.58E-06	2.95E-10	8.19E-10	2.21E-09	5.70E-10	4.66E-10	3.42E-10
P/PCB	Aroclor-1260	11096-82-5		1.33E-08	9.83E-07	2.18E-09	4.93E-09	1.75E-08	3.54E-10	3.79E-09	2.12E-10
P/PCB	Dieldrin	60-57-1			1.10E-08				3.94E-12		2.37E-12
P/PCB	Endosulfan I	959-98-8			5.35E-08				1.93E-11		1.16E-11
P/PCB	Endosulfan sulfate	1031-07-8									
P/PCB	Endrin	72-20-8			7.14E-08				2.57E-11		1.54E-11
P/PCB	Endrin aldehyde	7421-93-4									
P/PCB	Endrin ketone	53494-70-5		6.90E-12	6.11E-10	2.70E-13	1.32E-12	1.84E-13	2.20E-13	1.03E-13	1.32E-13
P/PCB	Heptachlor	76-44-8		3.82E-13		9.65E-14	2.11E-13	3.31E-12		4.60E-13	
P/PCB	Heptachlor epoxide	1024-57-3		1.82E-13		4.61E-14	1.01E-13	1.58E-12		2.19E-13	
P/PCB	Methoxychlor	72-43-5									
P/PCB	alpha-BHC	319-84-6		1.24E-11		2.07E-12	4.65E-12	1.67E-11		3.62E-12	
P/PCB	alpha-Chlordane	5103-71-9									

Table 3-4a:
Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Current	Current	Current	Current	Current	Current	Current	Current
	Location of Exposure:		AREA 1	AREA 1	AREA 4A	AREA 4B	Area 5A	Area 5A	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Undeveloped	Undeveloped	Routine/Undevel	Excavation	Routine/Undevel	Excavation
	Location of Emission:		All on-site areas	At Area	All on-site areas	All on-site areas	All on-site areas	Area 1	All on-site areas	Area 1
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	beta-BHC	319-85-7	2.36E-11		3.94E-12	8.86E-12	3.18E-11		6.89E-12	
P/PCB	gamma-BHC	58-89-9								
P/PCB	gamma-Chlordane	5103-74-2		5.43E-08				1.96E-11		1.17E-11
INORG	Antimony	7440-36-0	3.20E-09	7.26E-07	5.02E-10	1.17E-09	5.87E-09	2.61E-10	1.08E-09	1.57E-10
INORG	Arsenic	7440-38-2	2.05E-09	2.22E-07	1.32E-10	4.75E-10	1.44E-09	8.00E-11	2.39E-10	4.80E-11
INORG	Barium	7440-39-3	1.40E-07	1.20E-05	1.24E-08	3.75E-08	1.44E-07	4.33E-09	2.49E-08	2.60E-09
INORG	Beryllium	7440-41-7	1.97E-09	4.38E-08	8.01E-11	3.83E-10	1.24E-10	1.58E-11	4.06E-11	9.47E-12
INORG	Cadmium	7440-43-9	5.74E-09	6.69E-07	8.80E-10	2.08E-09	1.14E-08	2.41E-10	2.01E-09	1.45E-10
INORG	Chromium 3+	16065-83-1	6.97E-08	7.56E-06	9.85E-09	2.39E-08	1.07E-07	2.72E-09	2.00E-08	1.63E-09
INORG	Chromium 6+	18540-29-9	1.16E-08	1.26E-06	1.64E-09	3.98E-09	1.78E-08	4.54E-10	3.33E-09	2.72E-10
INORG	Cobalt	7440-48-4	3.03E-09	5.11E-07	2.39E-10	7.68E-10	2.92E-09	1.84E-10	4.86E-10	1.10E-10
INORG	Copper	7440-50-8	7.20E-08	3.19E-06	1.03E-08	2.48E-08	1.12E-07	1.15E-09	2.10E-08	6.88E-10
INORG	Cyanide (total)	57-12-5	6.96E-10	4.32E-07	7.18E-11	2.09E-10	1.82E-09	1.56E-10	2.59E-10	9.33E-11
INORG	Lead	7439-92-1	5.11E-07	3.87E-05	7.88E-08	1.85E-07	9.21E-07	1.39E-08	1.69E-07	8.35E-09
INORG	Manganese	7439-96-5	7.92E-07	3.00E-05	3.36E-08	1.56E-07	9.06E-08	1.08E-08	2.23E-08	6.47E-09
INORG	Mercury	7439-97-6	2.75E-09	1.45E-07	1.54E-10	5.96E-10	8.19E-10	5.22E-11	1.72E-10	3.13E-11
INORG	Nickel	7440-02-0	5.97E-09	4.68E-07	4.01E-10	1.40E-09	3.38E-09	1.68E-10	6.20E-10	1.01E-10
INORG	Selenium	7782-49-2	4.49E-10	3.15E-08	4.68E-11	1.32E-10	7.94E-10	1.14E-11	1.24E-10	6.81E-12
INORG	Silver	7440-22-4	5.51E-10	1.61E-08	6.87E-11	1.73E-10	5.02E-10	5.80E-12	1.10E-10	3.48E-12
INORG	Thallium	7440-28-0	2.72E-11		4.53E-12	1.02E-11	3.66E-11		7.93E-12	
INORG	Vanadium	7440-62-2	7.78E-09	6.20E-07	3.75E-10	1.60E-09	1.67E-09	2.23E-10	3.52E-10	1.34E-10
INORG	Zinc	7440-66-6	2.51E-07	1.70E-05	3.98E-08	9.49E-08	7.41E-07	6.13E-09	1.17E-07	3.68E-09
TIC	Acetaldehyde	75-07-0								
TIC	Acetophenone	98-86-2								
TIC	Butanol, 1-	71-36-3								
TIC	Caprolactam	105-60-2								
TIC	Chlorodifluoromethane	75-45-6								
TIC	Cyclohexanone	108-94-1								
TIC	Diethyl ether	60-29-7								
TIC	Dioxane, 1,4-	123-91-1								
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5								
TIC	Hexane, n-	110-54-3	5.64E-12		9.40E-13	2.12E-12	7.60E-12		1.65E-12	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7								
TIC	Phthalic anhydride	85-44-9		2.58E-07				9.28E-11		5.57E-11

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Undeveloped	Routine Industrial	Excavation
			Location of Emission:	All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6		1.20E-04	3.35E-01	1.99E-03	3.82E-03	4.39E-03	9.98E-06	2.67E-04	1.61E-01	1.85E-01	2.90E-06	1.99E-05	4.48E-05	
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.33E-07	1.33E-04	2.21E-06	1.52E-06	1.75E-06		2.95E-07				2.21E-08	4.97E-08	
VOC	1,1,2-Trichloroethane	79-00-5		4.04E-07	6.08E-04	2.76E-08				9.43E-09				1.58E-08	7.74E-08	
VOC	1,1-Dichloroethane	75-34-3		1.03E-04	4.85E-03	1.72E-03	3.18E-03	3.65E-03		2.41E-04	3.66E-04	4.21E-04	3.60E-05	1.72E-05	3.87E-05	3.56E-05
VOC	1,1-Dichloroethene	75-35-4							4.64E-06							
VOC	1,2,4-Trimethylbenzene	95-63-6														
VOC	1,2-Dichloroethane	107-06-2		4.13E-05	5.29E-03	6.88E-04	1.08E-03	1.24E-03		9.17E-05	1.19E-04	1.37E-04		6.88E-06	1.55E-05	1.13E-05
VOC	1,2-Dichloroethene (total)	540-59-0		1.78E-04	4.19E-02	2.87E-03	3.66E-03	4.20E-03		1.65E-03	4.86E-03	5.58E-03	1.90E-03	3.03E-05	6.82E-05	2.66E-05
VOC	1,2-Dichloropropane	78-87-5		4.08E-05	3.04E-03	6.80E-04	4.66E-04	5.35E-04		9.55E-05	7.66E-05	8.80E-05	3.77E-06	6.81E-06	1.53E-05	
VOC	1,3,5-Trimethylbenzene	108-67-8														
VOC	2-Butanone	78-93-3		4.57E-06	1.77E-05	2.85E-06	2.76E-05	1.65E-04	1.73E-04	1.71E-06	1.51E-03	9.07E-03	1.65E-02	7.20E-05	3.30E-06	
VOC	2-Hexanone	591-78-6		8.89E-04		1.48E-02	1.02E-02	1.16E-02	1.84E-02	1.98E-03	1.25E-04	1.44E-04		1.48E-04	3.33E-04	
VOC	4-Methyl-2-pentanone	108-10-1		1.05E-04	1.15E-02	1.76E-03	2.77E-03	3.20E-03	5.87E-03	2.34E-04	5.18E-02	6.07E-02	7.45E-03	1.76E-05	3.96E-05	
VOC	Acetone	67-64-1		2.35E-04	1.94E-02	2.59E-03	9.59E-03	1.10E-02	3.33E-02	3.72E-04	1.55E-01	1.78E-01	3.82E-05	1.33E-03	1.17E-04	1.51E-06
VOC	Benzene	71-43-2		5.91E-03	7.27E-01	4.99E-03	3.48E-03	3.99E-03	5.72E-03	2.72E-03	2.74E-02	3.15E-02	8.31E-04	9.14E-02	4.71E-03	6.68E-01
VOC	Bromodichloromethane	75-27-4														
VOC	Carbon Disulfide	75-15-0		6.10E-08	1.18E-06	4.17E-09				1.42E-09				2.39E-09	1.17E-08	
VOC	Carbon Tetrachloride	56-23-5														
VOC	Chlorobenzene	108-90-7		5.85E-06	1.28E-03	3.88E-05				8.46E-04	7.90E-03	9.09E-03	6.66E-04	1.48E-06	3.24E-06	
VOC	Chloroethane	75-00-3		1.75E-03	1.40E-02	9.77E-04				6.42E-04				2.77E-02	1.28E-03	1.40E-02
VOC	Chloroform	67-66-3		1.44E-04	5.48E-02	2.40E-03	4.44E-03	5.09E-03		3.21E-04	1.03E-06	1.19E-06	2.70E-06	2.40E-05	5.40E-05	
VOC	Chloromethane	74-87-3														
VOC	Ethyl Benzene	100-41-4		6.68E-04	5.70E-02	1.05E-02	1.66E-02	1.90E-02	3.73E-02	1.05E-02	5.50E-02	6.36E-02	6.34E-02	1.17E-04	2.65E-04	4.49E-03
VOC	Methylene Chloride	75-09-2		3.54E-04	7.55E-02	5.90E-03	4.04E-03	4.64E-03	6.21E-06	8.65E-04	5.95E-04	6.83E-04	3.46E-05	5.91E-05	1.33E-04	4.41E-04
VOC	Styrene	100-42-5		2.78E-05	3.10E-03	4.04E-04	4.26E-04	4.92E-04		8.98E-04	9.04E-03	1.04E-02	1.14E-03	5.14E-06	1.15E-05	
VOC	Tetrachloroethene	127-18-4		1.66E-03	6.58E-02	2.44E-02	3.06E-02	3.52E-02	7.56E-02	4.66E-02	6.60E-02	7.66E-02	7.56E-02	3.01E-04	6.73E-04	
VOC	Tetrahydrofuran	109-99-9														
VOC	Toluene	108-88-3		7.45E-03	1.36E-01	1.17E-01	9.96E-02	1.14E-01	1.28E-01	1.22E-01	1.22E-01	1.44E-01	1.41E-01	1.31E-03	2.94E-03	1.42E-02
VOC	Trichloroethene	79-01-6		4.89E-04	5.01E-02	7.26E-03	1.01E-02	1.16E-02	3.16E-02	1.30E-02	2.66E-01	3.05E-01	2.05E-02	8.84E-05	1.98E-04	
VOC	Vinyl Chloride	75-01-4		5.48E-06	1.21E-04	9.14E-05	8.14E-05	9.34E-05		1.22E-05				9.14E-07	2.06E-06	6.78E-06
VOC	Xylenes (total)	1330-20-7		4.30E-03	7.26E-02	6.48E-02	5.53E-02	6.38E-02	6.45E-02	7.02E-02	5.58E-02	6.68E-02	6.61E-02	7.34E-04	1.67E-03	1.72E-02
VOC	cis-1,2-Dichloroethene	156-59-2		1.62E-06	2.09E-01	2.71E-05	5.01E-05	5.75E-05	3.50E-05	3.61E-06	3.83E-06	4.40E-06		2.71E-07	6.10E-07	1.20E-06
VOC	m,p-xylene	136777-61-2		9.38E-06	5.68E-02	1.56E-04	1.07E-04	1.23E-04	3.67E-06	2.08E-05	8.84E-03	1.02E-02		1.56E-06	3.52E-06	
VOC	ortho-xylene	95-47-6		4.51E-06	2.48E-02	7.52E-05	5.15E-05	5.92E-05	1.31E-06	1.00E-05	3.20E-03	3.68E-03	1.25E-06	7.52E-07	1.69E-06	
VOC	p-Cymene	99-87-6														
VOC	trans-1,2-Dichloroethene	156-60-5		1.41E-09		1.83E-10				1.02E-10				4.02E-10	2.38E-08	2.41E-05
SVOC	1,2,4-Trichlorobenzene	120-82-1		9.61E-06	4.69E-05	1.60E-04	1.21E-04	1.41E-04		2.13E-05				1.60E-06	3.60E-06	
SVOC	1,2-Dichlorobenzene	95-50-1		1.86E-04	7.28E-04	3.10E-03	2.13E-03	2.45E-03	9.56E-03	4.48E-04	1.29E-05	1.48E-05	1.80E-05	3.11E-05	7.01E-05	2.44E-04
SVOC	1,3-Dichlorobenzene	541-73-1			1.46E-05											
SVOC	1,4-Dichlorobenzene	106-46-7		3.55E-06	2.37E-04	5.92E-05	4.06E-05	4.68E-05		7.89E-06	4.15E-06	4.78E-06		5.92E-07	1.34E-06	1.44E-05
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1		9.26E-05	9.18E-04	5.17E-05				3.39E-05				1.47E-03	6.82E-05	9.18E-04
SVOC	2,4,5-Trichlorophenol	95-95-4		2.16E-09		1.43E-08				3.12E-07	2.23E-07	3.02E-07	3.02E-07	5.46E-10	1.20E-09	
SVOC	2,4-Dichlorophenol	120-83-2			1.44E-05											
SVOC	2,4-Dimethylphenol	105-67-9		6.19E-06	5.21E-05	1.02E-04	1.19E-04	1.46E-04	3.93E-04	2.86E-05	5.98E-05	7.29E-05	2.19E-05	1.04E-06	2.81E-06	2.02E-05
SVOC	2,4-Dinitrotoluene	121-14-2									3.47E-06	4.20E-06				
SVOC	2,6-Dinitrotoluene	606-20-2		9.84E-07		1.64E-05	1.70E-05	2.05E-05		2.19E-06				1.64E-07	3.69E-07	
SVOC	2-Chloronaphthalene	91-58-7														
SVOC	2-Methylnaphthalene	91-57-6		4.12E-05	4.02E-04	3.54E-04	3.06E-04	4.91E-04	3.28E-04	3.82E-04	2.80E-04	3.35E-04	3.28E-04	4.69E-06	1.24E-05	4.07E-06
SVOC	2-Methylphenol	95-48-7		1.69E-05	4.72E-05	2.79E-04	1.92E-04	2.31E-04	7.31E-04	7.15E-05	4.92E-05	5.90E-05	2.86E-05	2.84E-06	6.38E-06	
SVOC	3,3'-Dichlorobenzidine	91-94-1		1.32E-10	1.17E-08	9.00E-12				3.07E-12				5.16E-12	2.52E-11	
SVOC	4-Bromophenyl-phenylether	101-55-3														
SVOC	4-Chloro-3-methylphenol	59-50-7			1.93E-06											
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3														
SVOC	4-Methylphenol	106-44-5		6.20E-05	1.38E-04	1.02E-03	7.02E-04	8.20E-04	2.79E-03	2.25E-04	1.20E-04	1.40E-04	3.74E-05	1.17E-05	2.36E-05	2.99E-06

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Undeveloped	Routine Industrial	Excavation
			Location of Emission:	All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Nitrophenol	100-02-7									2.29E-06	2.65E-06				
SVOC	Acenaphthene	83-32-9		3.51E-06	2.41E-05	5.84E-05	4.08E-05	5.08E-05		9.17E-06	1.74E-06	2.17E-06	1.22E-06	5.85E-07	1.32E-06	
SVOC	Acenaphthylene	208-96-8		1.09E-06	9.32E-06	7.46E-08				2.55E-08				4.28E-08	2.09E-07	5.83E-07
SVOC	Anthracene	120-12-7		1.93E-07	7.40E-07	1.50E-06	1.07E-06	1.58E-06		9.38E-07	9.00E-07	1.33E-06	8.02E-07	1.98E-08	5.48E-08	2.10E-07
SVOC	Benzo(a)anthracene	56-55-3		1.49E-10	6.56E-10	1.76E-09	1.50E-07	9.00E-07		1.73E-09	1.20E-07	7.20E-07	5.42E-07	2.10E-11	5.09E-11	2.00E-08
SVOC	Benzo(a)pyrene	50-32-8		1.08E-10	9.17E-10	9.44E-10	8.33E-08	5.00E-07		1.27E-10	7.78E-08	4.67E-07	4.67E-07	1.14E-11	3.11E-11	2.22E-08
SVOC	Benzo(b)fluoranthene	205-99-2		2.55E-10	9.56E-10	3.34E-09	2.94E-07	1.77E-06		7.14E-10	1.78E-07	1.07E-06	7.22E-07	3.58E-11	8.61E-11	2.44E-08
SVOC	Benzo(g,h,i)perylene	191-24-2		5.64E-11		9.40E-10	8.33E-08	5.00E-07		1.25E-10	6.11E-08	3.67E-07	3.67E-07	9.40E-12	2.12E-11	1.64E-08
SVOC	Benzo(k)fluoranthene	207-08-9		2.47E-10	8.06E-10	3.34E-09	2.94E-07	1.77E-06		7.14E-10	1.78E-07	1.07E-06	7.22E-07	3.55E-11	8.45E-11	2.28E-08
SVOC	Benzoic Acid	65-85-0		1.59E-04	2.00E-04	2.65E-03	1.82E-03	2.12E-03		3.53E-04	2.89E-03	3.37E-03		2.65E-05	5.96E-05	
SVOC	Benzyl Alcohol	100-51-6		9.97E-10		1.66E-08	1.47E-06	8.84E-06		2.22E-09				1.66E-10	3.74E-10	
SVOC	Butylbenzylphthalate	85-68-7		1.59E-08	5.58E-06	2.64E-07	2.33E-05	1.40E-04		4.58E-08	1.68E-06	1.01E-05	1.05E-05	2.65E-09	5.96E-09	
SVOC	Carbazole	86-74-8														2.67E-08
SVOC	Chrysene	218-01-9		1.95E-10	8.22E-10	2.42E-09	2.11E-07	1.27E-06		1.13E-09	8.56E-08	5.13E-07	4.33E-07	2.71E-11	6.56E-11	2.17E-08
SVOC	Di-n-butylphthalate	84-74-2		2.93E-09	3.80E-06	4.77E-08	4.19E-06	2.51E-05	1.67E-05	1.57E-08	3.15E-06	1.89E-05	1.42E-05	4.90E-10	1.11E-09	4.67E-09
SVOC	Di-n-octylphthalate	117-84-0		5.64E-10	4.47E-07	8.19E-09	7.22E-07	4.33E-06		1.90E-09	7.18E-07	4.31E-06	4.88E-06	8.56E-11	2.00E-10	
SVOC	Dibenzo(a,h)anthracene	53-70-3									1.50E-08	9.00E-08	9.00E-08			1.61E-08
SVOC	Dibenzofuran	132-64-9		9.59E-11	1.90E-07	1.58E-09	1.39E-07	8.33E-07		4.79E-10	3.32E-08	1.99E-07	1.32E-07	1.61E-11	3.63E-11	
SVOC	Diethylphthalate	84-66-2		9.31E-10	6.98E-07	1.55E-08	1.37E-06	8.24E-06		2.16E-09	2.24E-07	1.34E-06	8.58E-07	1.55E-10	3.49E-10	
SVOC	Dimethylphthalate	131-11-3		9.79E-09	2.42E-06	1.63E-07	1.44E-05	8.67E-05	3.67E-05	2.26E-08	4.75E-07	2.85E-06	4.67E-07	1.63E-09	3.67E-09	
SVOC	Fluoranthene	206-44-0		2.30E-10	1.70E-07	2.67E-09	2.28E-07	1.37E-06		2.48E-09	3.09E-07	1.85E-06	6.93E-07	3.18E-11	7.78E-11	2.19E-08
SVOC	Fluorene	86-73-7		1.83E-06	1.04E-05	3.04E-05	2.18E-05	2.98E-05		5.09E-06	1.11E-06	1.52E-06	1.03E-06	3.05E-07	6.87E-07	
SVOC	Hexachlorobenzene	118-74-1		1.82E-11	3.22E-10	1.24E-12				4.24E-13				7.12E-13	3.48E-12	
SVOC	Hexachlorobutadiene	87-68-3		5.14E-10	2.71E-07	8.56E-09	7.59E-07	4.55E-06		1.14E-09				8.56E-11	1.93E-10	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5		8.02E-11	4.89E-10	8.80E-10	7.78E-08	4.67E-07		1.18E-10	4.56E-08	2.73E-07	2.73E-07	9.86E-12	2.50E-11	1.89E-08
SVOC	Isophorone	78-59-1		1.90E-04	1.56E-03	3.06E-03	2.09E-03	2.46E-03	2.24E-03	9.31E-04	4.46E-03	5.24E-03	1.23E-03	6.82E-05	7.23E-05	4.43E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7														
SVOC	N-Nitrosodiphenylamine	86-30-6		6.15E-08		4.07E-07				8.89E-06	3.50E-06	4.66E-06	6.07E-06	1.56E-08	3.41E-08	
SVOC	Naphthalene	91-20-3		9.43E-05	1.29E-03	1.54E-03	1.05E-03	1.23E-03	1.70E-03	6.24E-04	1.11E-03	1.30E-03	5.71E-04	1.60E-05	3.59E-05	1.44E-05
SVOC	Pentachlorophenol	87-86-5		1.74E-09	8.77E-07	2.90E-08	2.57E-06	1.54E-05		4.80E-09	7.28E-07	4.37E-06	5.00E-07	2.91E-10	6.55E-10	
SVOC	Phenanthrene	85-01-8		7.18E-10	4.03E-07	1.12E-08	9.84E-07	5.90E-06		3.42E-09	3.19E-07	1.91E-06	1.23E-06	1.16E-10	2.65E-10	8.33E-09
SVOC	Phenol	108-95-2		3.78E-05	1.41E-04	6.24E-04	4.28E-04	5.06E-04	1.56E-03	1.55E-04	1.29E-03	1.52E-03	1.31E-04	6.35E-06	1.53E-05	9.81E-06
SVOC	Pyrene	129-00-0		3.86E-10	2.64E-07	5.09E-09	4.44E-07	2.67E-06		2.11E-09	2.12E-07	1.27E-06	6.00E-07	5.56E-11	1.33E-10	2.14E-08
SVOC	bis(2-Chloroethyl) ether	111-44-4		4.89E-05	3.66E-04	5.80E-04	3.93E-04	4.55E-04		8.15E-05				2.36E-04	2.40E-05	1.96E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7		2.09E-08	1.48E-05	2.28E-07	1.90E-05	1.14E-04	3.67E-05	2.98E-07	7.32E-05	4.39E-04	1.28E-04	2.86E-09	7.05E-09	2.22E-07
P/PCB	4,4'-DDD	72-54-8		5.54E-11	1.60E-07	9.17E-10	8.09E-08	4.85E-07		2.16E-10	8.33E-09	5.00E-08	5.00E-08	9.29E-12	2.09E-11	4.33E-09
P/PCB	4,4'-DDE	72-55-9		3.31E-11		5.52E-10	4.89E-08	2.93E-07		7.36E-11				5.52E-12	1.24E-11	1.61E-08
P/PCB	4,4'-DDT	50-29-3		4.69E-11	2.14E-07	7.81E-10	6.93E-08	4.16E-07		1.04E-10				7.81E-12	1.76E-11	1.33E-08
P/PCB	Aldrin	309-00-2		2.27E-10		3.78E-09	3.35E-07	2.01E-06		5.04E-10				3.78E-11	8.51E-11	
P/PCB	Aroclor-1242	53469-21-9		3.07E-10	1.37E-06	3.66E-10				7.62E-09	1.43E-06	8.60E-06	4.87E-05	2.33E-11	7.78E-11	
P/PCB	Aroclor-1248	12672-29-6		2.23E-09	9.41E-07	3.13E-08	2.76E-06	1.65E-05	4.33E-05	8.53E-09	7.82E-07	4.69E-06	1.37E-05	3.32E-10	7.81E-10	1.22E-08
P/PCB	Aroclor-1254	11097-69-1		2.90E-09	1.58E-06	2.29E-08	2.00E-06	1.20E-05	1.57E-06	8.81E-09	5.27E-07	3.16E-06	3.87E-06	2.95E-10	8.19E-10	4.89E-07
P/PCB	Aroclor-1260	11096-82-5		1.33E-08	9.83E-07	2.16E-07	1.92E-05	1.15E-04	1.07E-05	2.89E-08	3.25E-07	1.95E-06	4.87E-06	2.18E-09	4.93E-09	5.39E-08
P/PCB	Dieldrin	60-57-1			1.10E-08											
P/PCB	Endosulfan I	959-98-8			5.35E-08											2.17E-08
P/PCB	Endosulfan sulfate	1031-07-8														3.33E-09
P/PCB	Endrin	72-20-8			7.14E-08											8.33E-09
P/PCB	Endrin aldehyde	7421-93-4														
P/PCB	Endrin ketone	53494-70-5		6.90E-12	6.11E-10	4.71E-13				1.61E-13				2.70E-13	1.32E-12	
P/PCB	Heptachlor	76-44-8		3.82E-13		2.53E-12				5.52E-11	4.89E-09	2.93E-08	2.93E-08	9.65E-14	2.11E-13	3.44E-09
P/PCB	Heptachlor epoxide	1024-57-3		1.82E-13		1.21E-12				2.63E-11	2.33E-09	1.40E-08	1.40E-08	4.61E-14	1.01E-13	
P/PCB	Methoxychlor	72-43-5														1.61E-08
P/PCB	alpha-BHC	319-84-6		1.24E-11		2.07E-10	1.83E-08	1.10E-07		2.76E-11				2.07E-12	4.65E-12	
P/PCB	alpha-Chlordane	5103-71-9														1.22E-08

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**
	Location of Exposure:		**AREA 1**	**AREA 1**	**AREA 2**	**AREA 2**	**AREA 2**	**AREA 2**	**AREA 3**	**AREA 3**	**AREA 3**	**AREA 3**	**AREA 4A**	**AREA 4B**	**AREA 4B**
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Undeveloped	Routine Industrial	Excavation
	Location of Emission:		All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	beta-BHC	319-85-7	2.36E-11		3.94E-10	3.49E-08	2.09E-07		5.25E-11				3.94E-12	8.86E-12	1.44E-09
P/PCB	gamma-BHC	58-89-9													1.61E-09
P/PCB	gamma-Chlordane	5103-74-2		5.43E-08											2.67E-09
INORG	Antimony	7440-36-0	3.20E-09	7.26E-07	4.30E-08	3.63E-06	2.18E-05	2.50E-05	4.79E-08	7.51E-06	4.50E-05	2.54E-05	5.02E-10	1.17E-09	
INORG	Arsenic	7440-38-2	2.05E-09	2.22E-07	4.04E-09	2.70E-07	1.62E-06	2.17E-06	1.96E-08	5.05E-07	3.03E-06	5.92E-06	1.32E-10	4.75E-10	4.22E-07
INORG	Barium	7440-39-3	1.40E-07	1.20E-05	6.87E-07	5.40E-05	3.24E-04	9.00E-04	1.63E-06	1.35E-04	8.11E-04	1.03E-03	1.24E-08	3.75E-08	
INORG	Beryllium	7440-41-7	1.97E-09	4.38E-08	3.73E-10	1.74E-08	1.04E-07		1.01E-09	3.41E-08	2.04E-07	2.93E-07	8.01E-11	3.83E-10	
INORG	Cadmium	7440-43-9	5.74E-09	6.69E-07	7.11E-08	5.89E-06	3.53E-05	1.73E-05	1.09E-07	2.03E-05	1.22E-04	5.48E-05	8.80E-10	2.08E-09	3.28E-07
INORG	Chromium 3+	16065-83-1	6.97E-08	7.56E-06	8.28E-07	7.05E-05	4.23E-04	2.37E-04	8.05E-07	6.56E-05	3.94E-04	4.71E-04	9.85E-09	2.39E-08	1.57E-06
INORG	Chromium 6+	18540-29-9	1.16E-08	1.26E-06	1.38E-07	1.17E-05	7.05E-05	3.95E-05	1.34E-07	1.09E-05	6.56E-05	7.86E-05	1.64E-09	3.98E-09	2.61E-07
INORG	Cobalt	7440-48-4	3.03E-09	5.11E-07	1.07E-08	7.86E-07	4.71E-06	6.33E-06	3.69E-08	2.73E-06	1.64E-05	2.55E-05	2.39E-10	7.68E-10	
INORG	Copper	7440-50-8	7.20E-08	3.19E-06	8.63E-07	7.33E-05	4.40E-04	3.10E-04	8.57E-07	1.01E-04	6.05E-04	6.82E-04	1.03E-08	2.48E-08	2.06E-06
INORG	Cyanide (total)	57-12-5	6.96E-10	4.32E-07	1.42E-09				3.02E-08	1.79E-06	1.07E-05	1.90E-05	7.18E-11	2.09E-10	
INORG	Lead	7439-92-1	5.11E-07	3.87E-05	6.71E-06	5.67E-04	3.40E-03	3.40E-03	7.56E-06	4.18E-04	2.51E-03	3.62E-03	7.88E-08	1.85E-07	8.00E-06
INORG	Manganese	7439-96-5	7.92E-07	3.00E-05	2.46E-07	1.31E-05	7.88E-05	1.10E-04	1.00E-06	4.64E-05	2.79E-04	3.55E-04	3.36E-08	1.56E-07	
INORG	Mercury	7439-97-6	2.75E-09	1.45E-07	5.36E-09	4.36E-07	2.62E-06	2.62E-06	6.67E-09	5.67E-07	3.40E-06	2.88E-06	1.54E-10	5.96E-10	2.50E-08
INORG	Nickel	7440-02-0	5.97E-09	4.68E-07	1.73E-08	1.37E-06	8.20E-06	1.77E-05	3.55E-08	3.04E-06	1.83E-05	3.05E-05	4.01E-10	1.40E-09	
INORG	Selenium	7782-49-2	4.49E-10	3.15E-08	2.25E-09	1.54E-07	9.23E-07	1.43E-06	1.10E-08	1.87E-06	1.12E-05	3.65E-06	4.68E-11	1.32E-10	
INORG	Silver	7440-22-4	5.51E-10	1.61E-08	6.17E-09	5.46E-07	3.27E-06	5.00E-06	8.25E-10	3.68E-06	2.21E-05	4.00E-06	6.87E-11	1.73E-10	
INORG	Thallium	7440-28-0	2.72E-11		4.53E-10	4.01E-08	2.41E-07		6.04E-11	4.21E-08	2.52E-07		4.53E-12	1.02E-11	
INORG	Vanadium	7440-62-2	7.78E-09	6.20E-07	7.27E-09	5.34E-07	3.20E-06	3.33E-06	1.74E-08	1.13E-06	6.78E-06	1.23E-05	3.75E-10	1.60E-09	
INORG	Zinc	7440-66-6	2.51E-07	1.70E-05	2.52E-06	1.84E-04	1.10E-03	1.73E-03	9.81E-06	8.71E-04	5.23E-03	4.20E-03	3.98E-08	9.49E-08	1.66E-05
TIC	Acetaldehyde	75-07-0													
TIC	Acetophenone	98-86-2													
TIC	Butanol, 1-	71-36-3													
TIC	Caprolactam	105-60-2													
TIC	Chlorodifluoromethane	75-45-6													
TIC	Cyclohexanone	108-94-1													
TIC	Diethyl ether	60-29-7													
TIC	Dioxane, 1,4-	123-91-1													
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5													
TIC	Hexane, n-	110-54-3	5.64E-12		9.40E-11	8.33E-09	5.00E-08		1.25E-11				9.40E-13	2.12E-12	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7													
TIC	Phthalic anhydride	85-44-9		2.58E-07											

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')
	Location of Emission:		All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.61E-04	4.94E-04	3.22E-03	9.88E-08		3.49E-05	1.13E-04	9.44E-04	2.67E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.79E-07	4.78E-08	1.73E-08			3.87E-08	2.87E-08	4.67E-09	
VOC	1,1,2-Trichloroethane	79-00-5	1.08E-08	2.19E-07				6.06E-09	1.31E-07		
VOC	1,1-Dichloroethane	75-34-3	1.40E-04	4.63E-06	3.61E-05	6.84E-10		3.02E-05	1.18E-06	9.74E-06	1.84E-07
VOC	1,1-Dichloroethene	75-35-4				4.60E-08					1.24E-08
VOC	1,2,4-Trimethylbenzene	95-63-6									
VOC	1,2-Dichloroethane	107-06-2	5.56E-05	1.91E-06	1.23E-05			1.20E-05	1.15E-06	3.32E-06	
VOC	1,2-Dichloroethene (total)	540-59-0	3.03E-04	1.51E-05	9.71E-05	4.41E-08		5.97E-05	9.05E-06	2.85E-05	9.68E-06
VOC	1,2-Dichloropropane	78-87-5	5.53E-05	1.10E-06	5.30E-06	1.10E-10		1.19E-05	6.57E-07	1.43E-06	1.92E-08
VOC	1,3,5-Trimethylbenzene	108-67-8									
VOC	2-Butanone	78-93-3	1.31E-06	4.62E-06	1.58E-04	2.88E-04		3.15E-06	1.06E-06	4.62E-05	4.63E-07
VOC	2-Hexanone	591-78-6	1.20E-03	1.46E-05	1.15E-04	1.83E-04		2.59E-04	3.65E-06	3.11E-05	4.92E-05
VOC	4-Methyl-2-pentanone	108-10-1	1.42E-04	1.59E-04	1.06E-03	5.87E-05		3.08E-05	3.64E-05	3.10E-04	3.78E-05
VOC	Acetone	67-64-1	2.29E-04	4.73E-04	3.10E-03	3.30E-04		1.02E-04	1.09E-04	9.08E-04	8.89E-05
VOC	Benzene	71-43-2	1.80E-03	3.24E-04	5.48E-04	5.66E-05	5.74E-02	4.03E-03	1.64E-04	1.61E-04	1.53E-05
VOC	Bromodichloromethane	75-27-4					4.06E-06				
VOC	Carbon Disulfide	75-15-0	1.63E-09	4.24E-10				9.15E-10	2.55E-10		
VOC	Carbon Tetrachloride	56-23-5									
VOC	Chlorobenzene	108-90-7	5.07E-05	2.44E-05	1.58E-04	3.60E-08		7.05E-06	5.66E-06	4.63E-05	3.39E-06
VOC	Chloroethane	75-00-3	4.96E-04	5.04E-06			7.36E-03	1.21E-03	3.02E-06		
VOC	Chloroform	67-66-3	1.94E-04	1.97E-05	5.04E-05	5.80E-11	5.38E-06	4.20E-05	1.18E-05	1.36E-05	1.37E-08
VOC	Chloromethane	74-87-3									
VOC	Ethyl Benzene	100-41-4	1.37E-03	1.71E-04	1.11E-03	3.75E-04		2.53E-04	4.00E-05	3.24E-04	3.21E-04
VOC	Methylene Chloride	75-09-2	4.81E-04	2.73E-05	4.59E-05	6.20E-08	4.41E-04	1.04E-04	1.64E-05	1.24E-05	1.76E-07
VOC	Styrene	100-42-5	8.05E-05	2.77E-05	1.81E-04	1.33E-07		1.35E-05	6.35E-06	5.32E-05	5.78E-06
VOC	Tetrachloroethene	127-18-4	4.43E-03	2.02E-04	1.33E-03	7.49E-04		7.55E-04	4.63E-05	3.91E-04	3.85E-04
VOC	Tetrahydrofuran	109-99-9									
VOC	Toluene	108-88-3	1.54E-02	3.79E-04	2.50E-03	1.30E-03	1.23E-05	2.85E-03	8.89E-05	7.32E-04	7.11E-04
VOC	Trichloroethene	79-01-6	1.27E-03	8.13E-04	5.31E-03	3.13E-04		2.19E-04	1.87E-04	1.56E-03	1.05E-04
VOC	Vinyl Chloride	75-01-4	7.39E-06	1.61E-07	9.25E-07			1.60E-06	5.53E-08	2.49E-07	
VOC	Xylenes (total)	1330-20-7	8.73E-03	1.77E-04	1.16E-03	6.75E-04		1.60E-03	4.29E-05	3.41E-04	3.26E-04
VOC	cis-1,2-Dichloroethene	156-59-2	2.19E-06	7.52E-05	5.69E-07	3.46E-07		4.74E-07	4.51E-05	1.53E-07	9.34E-08
VOC	m,p-xylene	136777-61-2	1.26E-05	2.71E-05	1.77E-04	3.64E-08		2.74E-06	1.23E-05	5.18E-05	9.81E-09
VOC	ortho-xylene	95-47-6	6.07E-06	9.79E-06	6.40E-05	1.30E-08		1.32E-06	5.35E-06	1.87E-05	6.38E-09
VOC	p-Cymene	99-87-6									
VOC	trans-1,2-Dichloroethene	156-60-5	1.21E-10	4.16E-09			6.02E-06	9.87E-11	3.34E-09		
SVOC	1,2,4-Trichlorobenzene	120-82-1	1.29E-05	1.74E-07	1.40E-06			2.80E-06	4.36E-08	3.77E-07	
SVOC	1,2-Dichlorobenzene	95-50-1	2.53E-04	3.15E-06	2.43E-05	9.47E-05		5.46E-05	8.19E-07	6.55E-06	2.55E-05
SVOC	1,3-Dichlorobenzene	541-73-1		5.24E-09					3.15E-09		
SVOC	1,4-Dichlorobenzene	106-46-7	4.78E-06	8.52E-08	4.63E-07			1.04E-06	5.11E-08	1.25E-07	
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1	2.62E-05	3.31E-07				6.40E-05	1.98E-07		
SVOC	2,4,5-Trichlorophenol	95-95-4	1.87E-08	6.83E-10	5.25E-09	9.86E-10		2.60E-09	1.57E-10	1.54E-09	1.25E-09
SVOC	2,4-Dichlorophenol	120-83-2		5.17E-09					3.10E-09		
SVOC	2,4-Dimethylphenol	105-67-9	9.08E-06	1.90E-07	1.44E-06	3.89E-06		1.90E-06	4.73E-08	3.89E-07	1.05E-06
SVOC	2,4-Dinitrotoluene	121-14-2		1.06E-08	7.31E-08				2.43E-09	2.14E-08	
SVOC	2,6-Dinitrotoluene	606-20-2	1.33E-06	2.45E-08	2.03E-07		5.50E-08	2.87E-07	6.14E-09	5.47E-08	
SVOC	2-Chloronaphthalene	91-58-7									
SVOC	2-Methylnaphthalene	91-57-6	4.80E-05	9.33E-07	7.25E-06	3.32E-06		8.99E-06	2.31E-07	2.08E-06	1.65E-06
SVOC	2-Methylphenol	95-48-7	2.45E-05	2.78E-07	2.29E-06	7.24E-06		5.15E-06	6.96E-08	6.17E-07	1.95E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1	3.51E-12	4.20E-12				1.97E-12	2.52E-12		
SVOC	4-Bromophenyl-phenylether	101-55-3									
SVOC	4-Chloro-3-methylphenol	59-50-7		6.96E-10					4.18E-10		
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3									
SVOC	4-Methylphenol	106-44-5	8.79E-05	1.01E-06	8.11E-06	2.76E-05		1.87E-05	2.53E-07	2.19E-06	7.44E-06

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**
	Location of Exposure:		**Area 5A**	**Area 5A**	**Area 5A**	**Area 5A**	**AREA 5B**	**AREA 6**	**AREA 6**	**AREA 6**	**AREA 6**	
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	
	Location of Emission:		All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	
SVOC	4-Nitrophenol	100-02-7		7.01E-09	4.61E-08				1.61E-09	1.35E-08		
SVOC	Acenaphthene	83-32-9	4.80E-06	5.87E-08	5.03E-07	2.09E-09		1.03E-06	1.47E-08	1.36E-07	5.60E-09	
SVOC	Acenaphthylene	208-96-8	2.91E-08	3.35E-09				1.64E-08	2.01E-09			
SVOC	Anthracene	120-12-7	1.65E-07	2.75E-09	2.31E-08	3.83E-09		3.32E-08	6.32E-10	6.76E-09	2.97E-09	
SVOC	Benzo(a)anthracene	56-55-3	2.28E-10	3.67E-10	1.25E-08	9.43E-09		4.27E-11	8.42E-11	3.67E-09		
SVOC	Benzo(a)pyrene	50-32-8	7.74E-11	2.38E-10	8.12E-09	8.12E-09		1.72E-11	5.46E-11	2.38E-09		
SVOC	Benzo(b)fluoranthene	205-99-2	2.86E-10	5.45E-10	1.86E-08	1.26E-08		6.12E-11	1.25E-10	5.45E-09		
SVOC	Benzo(g,h,i)perylene	191-24-2	7.60E-11	1.87E-10	6.38E-09	6.38E-09		1.65E-11	4.29E-11	1.87E-09		
SVOC	Benzo(k)fluoranthene	207-08-9	2.86E-10	5.45E-10	1.86E-08	1.26E-08		6.11E-11	1.25E-10	5.45E-09		
SVOC	Benzoic Acid	65-85-0	2.14E-04	8.85E-06	5.86E-05			4.64E-05	2.03E-06	1.72E-05		
SVOC	Benzyl Alcohol	100-51-6	1.34E-09	2.12E-09	8.75E-08			2.91E-10	5.30E-10	2.36E-08		
SVOC	Butylbenzylphthalate	85-68-7	2.19E-08	3.36E-08	1.39E-06	1.83E-07		4.70E-09	8.40E-09	3.74E-07		
SVOC	Carbazole	86-74-8		4.62E-12					3.71E-12			
SVOC	Chrysene	218-01-9	2.43E-10	3.04E-10	1.25E-08	7.54E-09		4.92E-11	7.60E-11	3.38E-09		
SVOC	Di-n-butylphthalate	84-74-2	4.39E-09	9.63E-09	3.29E-07	2.47E-07		9.06E-10	2.21E-09	9.63E-08	4.45E-08	
SVOC	Di-n-octylphthalate	117-84-0	7.09E-10	2.20E-09	7.50E-08	8.50E-08		1.50E-10	5.04E-10	2.20E-08		
SVOC	Dibenzo(a,h)anthracene	53-70-3		4.59E-11	1.57E-09	1.57E-09			1.05E-11	4.59E-10		
SVOC	Dibenzofuran	132-64-9	1.43E-10	2.00E-10	8.25E-09	2.29E-09		2.97E-11	5.00E-11	2.23E-09		
SVOC	Diethylphthalate	84-66-2	1.26E-09	1.98E-09	8.16E-08	1.49E-08		2.72E-10	4.95E-10	2.20E-08		
SVOC	Dimethylphthalate	131-11-3	1.32E-08	2.08E-08	8.58E-07	3.63E-07		2.86E-09	5.20E-09	2.31E-07	9.79E-08	
SVOC	Fluoranthene	206-44-0	3.37E-10	9.45E-10	3.22E-08	1.21E-08		6.37E-11	2.17E-10	9.45E-09		
SVOC	Fluorene	86-73-7	2.52E-06	3.14E-08	2.95E-07	3.57E-09		5.40E-07	7.84E-09	7.95E-08	4.21E-09	
SVOC	Hexachlorobenzene	118-74-1	4.85E-13	1.16E-13				2.73E-13	6.96E-14			
SVOC	Hexachlorobutadiene	87-68-3	6.92E-10	1.09E-09	4.51E-08			1.50E-10	2.73E-10	1.22E-08		
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	7.17E-11	1.39E-10	4.76E-09	4.76E-09		1.58E-11	3.20E-11	1.39E-09		
SVOC	Isophorone	78-59-1	2.77E-04	1.36E-05	9.12E-05	2.22E-05	5.40E-07	5.91E-05	3.13E-06	2.67E-05	6.25E-06	
SVOC	N-Nitroso-di-n-propylamine	621-64-7										
SVOC	N-Nitrosodiphenylamine	86-30-6	5.33E-07	1.07E-08	8.10E-08	1.80E-08		7.41E-08	2.46E-09	2.38E-08	2.57E-08	
SVOC	Naphthalene	91-20-3	1.48E-04	3.52E-06	2.27E-05	1.68E-05		3.02E-05	8.52E-07	6.64E-06	4.54E-06	
SVOC	Pentachlorophenol	87-86-5	2.40E-09	3.70E-09	1.52E-07	8.70E-09		5.15E-10	9.24E-10	4.11E-08		
SVOC	Phenanthrene	85-01-8	1.02E-09	1.42E-09	5.85E-08	2.15E-08		2.11E-10	3.54E-10	1.58E-08		
SVOC	Phenol	108-95-2	5.45E-05	3.95E-06	2.65E-05	1.55E-05	4.05E-06	1.15E-05	9.08E-07	7.77E-06	4.17E-06	
SVOC	Pyrene	129-00-0	4.94E-10	6.49E-10	2.64E-08	1.04E-08		1.01E-10	1.60E-10	7.12E-09		
SVOC	bis(2-Chloroethyl) ether	111-44-4	5.03E-05	6.36E-07	4.51E-06		2.20E-05	2.01E-05	1.84E-07	1.22E-06		
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	3.37E-08	2.24E-07	7.64E-06	2.23E-06		6.10E-09	5.14E-08	2.24E-06	9.79E-08	
P/PCB	4,4'-DDD	72-54-8	7.94E-11	1.16E-10	4.80E-09	8.70E-10		1.68E-11	3.46E-11	1.30E-09		
P/PCB	4,4'-DDE	72-55-9	4.46E-11	7.04E-11	2.90E-09			9.65E-12	1.76E-11	7.83E-10		
P/PCB	4,4'-DDT	50-29-3	6.32E-11	9.97E-11	4.11E-09			1.37E-11	4.62E-11	1.11E-09		
P/PCB	Aldrin	309-00-2	3.06E-10	4.83E-10	1.99E-08			6.62E-11	1.21E-10	5.37E-09		
P/PCB	Aroclor-1242	53469-21-9	4.63E-10	4.39E-09	1.50E-07	8.47E-07		6.72E-11	1.01E-09	4.39E-08		
P/PCB	Aroclor-1248	12672-29-6	2.79E-09	3.97E-09	1.64E-07	4.29E-07		5.86E-10	9.92E-10	4.42E-08	1.16E-07	
P/PCB	Aroclor-1254	11097-69-1	2.21E-09	2.88E-09	1.19E-07	6.73E-08		4.66E-10	7.20E-10	3.20E-08	4.18E-09	
P/PCB	Aroclor-1260	11096-82-5	1.75E-08	2.76E-08	1.14E-06	1.06E-07		3.79E-09	6.91E-09	3.07E-07	2.85E-08	
P/PCB	Dieldrin	60-57-1		3.94E-12					2.37E-12			
P/PCB	Endosulfan I	959-98-8		1.93E-11					1.16E-11			
P/PCB	Endosulfan sulfate	1031-07-8		5.76E-13					4.62E-13			
P/PCB	Endrin	72-20-8		2.57E-11					1.54E-11			
P/PCB	Endrin aldehyde	7421-93-4										
P/PCB	Endrin ketone	53494-70-5	1.84E-13	2.20E-13				1.03E-13	1.32E-13			
P/PCB	Heptachlor	76-44-8	3.31E-12	1.50E-11	5.10E-10	5.10E-10		4.60E-13	3.43E-12	1.50E-10		
P/PCB	Heptachlor epoxide	1024-57-3	1.58E-12	7.14E-12	2.44E-10	2.44E-10		2.19E-13	1.64E-12	7.14E-11		
P/PCB	Methoxychlor	72-43-5		2.78E-12					2.23E-12			
P/PCB	alpha-BHC	319-84-6	1.67E-11	2.64E-11	1.09E-09			3.62E-12	6.60E-12	2.94E-10		
P/PCB	alpha-Chlordane	5103-71-9		2.11E-12					1.69E-12			

Table 3-4b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')
	Location of Emission:		All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	beta-BHC	319-85-7	3.18E-11	5.03E-11	2.07E-09			6.89E-12	1.26E-11	5.59E-10	
P/PCB	gamma-BHC	58-89-9		2.78E-13					2.23E-13		
P/PCB	gamma-Chlordane	5103-74-2		1.96E-11					1.17E-11		
INORG	Antimony	7440-36-0	5.87E-09	2.30E-08	7.84E-07	4.42E-07		1.08E-09	5.27E-09	2.30E-07	6.68E-08
INORG	Arsenic	7440-38-2	1.44E-09	1.55E-09	5.27E-08	1.03E-07		2.39E-10	3.55E-10	1.55E-08	5.79E-09
INORG	Barium	7440-39-3	1.44E-07	4.14E-07	1.41E-05	1.79E-05		2.49E-08	9.49E-08	4.14E-06	2.40E-06
INORG	Beryllium	7440-41-7	1.24E-10	1.04E-10	3.56E-09	5.10E-09		4.06E-11	2.39E-11	1.04E-09	
INORG	Cadmium	7440-43-9	1.14E-08	6.21E-08	2.12E-06	9.54E-07		2.01E-09	1.43E-08	6.21E-07	4.63E-08
INORG	Chromium 3+	16065-83-1	1.07E-07	2.01E-07	6.85E-06	8.20E-06		2.00E-08	4.61E-08	2.01E-06	6.33E-07
INORG	Chromium 6+	18540-29-9	1.78E-08	3.35E-08	1.14E-06	1.37E-06		3.33E-09	7.68E-09	3.35E-07	1.06E-07
INORG	Cobalt	7440-48-4	2.92E-09	8.37E-09	2.85E-07	4.43E-07		4.86E-10	1.92E-09	8.37E-08	1.69E-08
INORG	Copper	7440-50-8	1.12E-07	3.09E-07	1.05E-05	1.19E-05		2.10E-08	7.08E-08	3.09E-06	8.28E-07
INORG	Cyanide (total)	57-12-5	1.82E-09	5.48E-09	1.87E-07	3.31E-07		2.59E-10	1.26E-09	5.48E-08	
INORG	Lead	7439-92-1	9.21E-07	1.28E-06	4.36E-05	6.29E-05		1.69E-07	2.93E-07	1.28E-05	9.08E-06
INORG	Manganese	7439-96-5	9.06E-08	1.42E-07	4.85E-06	6.18E-06		2.23E-08	3.26E-08	1.42E-06	2.94E-07
INORG	Mercury	7439-97-6	8.19E-10	1.73E-09	5.92E-08	5.02E-08		1.72E-10	3.98E-10	1.73E-08	6.99E-09
INORG	Nickel	7440-02-0	3.38E-09	9.32E-09	3.18E-07	5.31E-07		6.20E-10	2.14E-09	9.32E-08	4.72E-08
INORG	Selenium	7782-49-2	7.94E-10	5.72E-09	1.95E-07	6.35E-08		1.24E-10	1.31E-09	5.72E-08	3.83E-09
INORG	Silver	7440-22-4	5.02E-10	1.13E-08	3.84E-07	6.95E-08		1.10E-10	2.58E-09	1.13E-07	1.34E-08
INORG	Thallium	7440-28-0	3.66E-11	1.29E-10	4.39E-09			7.93E-12	2.95E-11	1.29E-09	
INORG	Vanadium	7440-62-2	1.67E-09	3.46E-09	1.18E-07	2.14E-07		3.52E-10	7.94E-10	3.46E-08	8.90E-09
INORG	Zinc	7440-66-6	7.41E-07	2.67E-06	9.09E-05	7.31E-05		1.17E-07	6.12E-07	2.67E-05	4.63E-06
TIC	Acetaldehyde	75-07-0									
TIC	Acetophenone	98-86-2									
TIC	Butanol, 1-	71-36-3									
TIC	Caprolactam	105-60-2									
TIC	Chlorodifluoromethane	75-45-6									
TIC	Cyclohexanone	108-94-1									
TIC	Diethyl ether	60-29-7									
TIC	Dioxane, 1,4-	123-91-1									
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5									
TIC	Hexane, n-	110-54-3	7.60E-12	1.20E-11	4.95E-10			1.65E-12	3.00E-12	1.34E-10	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7									
TIC	Phthalic anhydride	85-44-9		9.28E-11					5.57E-11		

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 2: Subsurface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Undeveloped	Routine Industrial	Excavation
	Location of Emission:		All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	4.36E-02	3.35E-01	9.73E-03	3.82E-03	4.41E-03	9.98E-06	1.06E-01	1.61E-01	2.34E-01	2.90E-06	1.99E-05	4.48E-05	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.09E-04	1.33E-04	9.65E-06	1.52E-06	1.75E-06		2.84E-06				2.21E-08	4.97E-08	
VOC	1,1,2-Trichloroethane	79-00-5	2.52E-04	6.08E-04	1.72E-05		2.20E-05		5.87E-06		2.10E-07		1.58E-08	7.74E-08	
VOC	1,1-Dichloroethane	75-34-3	8.05E-04	4.85E-03	1.78E-03	3.18E-03	3.65E-03		4.90E-04	3.66E-04	5.19E-04	4.58E-05	1.72E-05	3.87E-05	3.56E-05
VOC	1,1-Dichloroethene	75-35-4					2.87E-09	4.64E-06							
VOC	1,2,4-Trimethylbenzene	95-63-6													
VOC	1,2-Dichloroethane	107-06-2	1.01E-03	5.29E-03	7.57E-04	1.08E-03	1.25E-03		1.99E-04	1.19E-04	1.54E-04		6.88E-06	1.55E-05	1.13E-05
VOC	1,2-Dichloroethene (total)	540-59-0	9.86E-03	4.19E-02	3.67E-03	3.66E-03	4.20E-03		4.95E-03	4.86E-03	6.50E-03	1.90E-03	3.03E-05	6.82E-05	2.66E-05
VOC	1,2-Dichloropropane	78-87-5	2.02E-03	3.04E-03	8.22E-04	4.66E-04	5.35E-04		2.75E-04	7.66E-05	1.09E-04	3.77E-06	6.81E-06	1.53E-05	
VOC	1,3,5-Trimethylbenzene	108-67-8													
VOC	2-Butanone	78-93-3	4.86E-06	1.77E-05	3.13E-06	2.76E-05	1.50E-03	1.73E-04	7.51E-06	1.51E-03	3.30E-02	8.00E-05	7.20E-05	3.30E-06	
VOC	2-Hexanone	591-78-6	8.90E-04		1.48E-02	1.02E-02	1.17E-02	2.03E-02	2.16E-03	1.25E-04	1.44E-04		1.48E-04	3.33E-04	
VOC	4-Methyl-2-pentanone	108-10-1	2.34E-03	1.15E-02	3.40E-03	2.77E-03	3.30E-03	6.70E-03	3.30E-02	5.18E-02	7.95E-02	1.14E-02	1.76E-05	3.96E-05	
VOC	Acetone	67-64-1	1.84E-03	1.94E-02	5.02E-03	9.59E-03	1.14E-02	8.33E-02	5.16E-02	1.55E-01	2.33E-01	6.73E-05	1.33E-03	1.17E-04	1.51E-06
VOC	Benzene	71-43-2	1.37E-02	7.27E-01	6.29E-03	3.48E-03	4.02E-03	6.11E-03	1.97E-02	2.74E-02	3.96E-02	8.31E-04	9.14E-02	4.71E-03	6.68E-01
VOC	Bromodichloromethane	75-27-4													
VOC	Carbon Disulfide	75-15-0		1.18E-06							1.00E-09		2.39E-09	1.17E-08	
VOC	Carbon Tetrachloride	56-23-5													
VOC	Chlorobenzene	108-90-7	1.34E-03	1.28E-03	7.36E-04		8.33E-06		1.42E-02	7.90E-03	1.15E-02	6.66E-04	1.48E-06	3.24E-06	
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	9.77E-04				6.42E-04		4.00E-09		2.77E-02	1.28E-03	1.40E-02
VOC	Chloroform	67-66-3	8.20E-03	5.48E-02	2.95E-03	4.44E-03	5.13E-03		5.08E-04	1.03E-06	8.10E-07	2.70E-06	2.40E-05	5.40E-05	
VOC	Chloromethane	74-87-3													
VOC	Ethyl Benzene	100-41-4	8.12E-03	5.70E-02	1.21E-02	1.66E-02	1.92E-02	4.23E-02	3.49E-02	5.50E-02	7.06E-02	6.44E-02	1.17E-04	2.65E-04	4.49E-03
VOC	Methylene Chloride	75-09-2	1.26E-01	7.55E-02	1.45E-02	4.04E-03	4.66E-03	6.21E-06	4.77E-03	5.95E-04	8.38E-04	6.21E-05	5.91E-05	1.33E-04	4.41E-04
VOC	Styrene	100-42-5	9.18E-04	3.10E-03	8.57E-04	4.26E-04	5.06E-04		9.55E-03	9.04E-03	1.28E-02	1.14E-03	5.14E-06	1.15E-05	
VOC	Tetrachloroethene	127-18-4	1.31E-02	6.58E-02	2.53E-02	3.06E-02	3.54E-02	7.57E-02	5.13E-02	6.60E-02	9.08E-02	7.57E-02	3.01E-04	6.73E-04	
VOC	Tetrahydrofuran	109-99-9													
VOC	Toluene	108-88-3	4.62E-02	1.36E-01	1.21E-01	9.96E-02	1.15E-01	1.40E-01	1.52E-01	1.22E-01	1.83E-01	1.46E-01	1.31E-03	2.94E-03	1.42E-02
VOC	Trichloroethene	79-01-6	1.09E-02	5.01E-02	1.61E-02	1.01E-02	1.17E-02	7.37E-02	1.94E-01	2.66E-01	3.39E-01	1.79E-02	8.84E-05	1.98E-04	
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-05	8.14E-05	9.34E-05		1.22E-05		4.00E-09		9.14E-07	2.06E-06	6.78E-06
VOC	Xylenes (total)	1330-20-7	2.25E-02	7.26E-02	6.61E-02	5.53E-02	6.45E-02	6.45E-02	7.07E-02	5.58E-02	9.66E-02	7.10E-02	7.34E-04	1.67E-03	1.72E-02
VOC	cis-1,2-Dichloroethene	156-59-2	3.03E-02	2.09E-01	2.09E-03	5.01E-05	5.75E-05	3.50E-05	7.12E-04	3.83E-06	5.50E-06		2.71E-07	6.10E-07	1.20E-06
VOC	m,p-xylene	6777-61-2	7.54E-02	5.68E-02	6.04E-03	1.07E-04	1.24E-04	3.67E-06	1.79E-02	8.84E-03	1.27E-02		1.56E-06	3.52E-06	
VOC	ortho-xylene	95-47-6	2.15E-02	2.48E-02	1.81E-03	5.15E-05	5.99E-05	1.31E-06	6.34E-03	3.20E-03	4.60E-03	2.50E-06	7.52E-07	1.69E-06	
VOC	p-Cymene	99-87-6													
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		1.83E-10				1.02E-10				4.02E-10	2.38E-08	2.41E-05
SVOC	1,2,4-Trichlorobenzene	120-82-1	3.42E-05	4.69E-05	1.62E-04	1.21E-04	1.42E-04		2.19E-05				1.60E-06	3.60E-06	
SVOC	1,2-Dichlorobenzene	95-50-1	1.06E-03	7.28E-04	3.16E-03	2.13E-03	2.51E-03	9.56E-03	4.49E-04	1.29E-05	1.18E-05	2.69E-05	3.11E-05	7.01E-05	2.44E-04
SVOC	1,3-Dichlorobenzene	541-73-1	5.52E-10	1.46E-05	3.77E-11				1.29E-11						
SVOC	1,4-Dichlorobenzene	106-46-7	3.42E-04	2.37E-04	8.26E-05	4.06E-05	4.68E-05		2.18E-05	4.15E-06	4.78E-06		5.92E-07	1.34E-06	1.44E-05
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	9.26E-05	9.18E-04	5.17E-05				3.39E-05				1.47E-03	6.82E-05	9.18E-04
SVOC	2,4,5-Trichlorophenol	95-95-4								2.23E-07	2.45E-07	3.02E-07	5.46E-10	1.20E-09	
SVOC	2,4-Dichlorophenol	120-83-2	2.53E-05	1.44E-05	1.73E-06				5.91E-07						
SVOC	2,4-Dimethylphenol	105-67-9	1.50E-05	5.21E-05	1.04E-04	1.19E-04	1.64E-04	3.93E-04	7.31E-05	5.98E-05	1.00E-04	2.19E-05	1.04E-06	2.81E-06	2.02E-05
SVOC	2,4-Dinitrotoluene	121-14-2	3.45E-08		2.29E-07				4.99E-06	3.47E-06	4.20E-06				
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-05	1.70E-05	2.05E-05		2.19E-06				1.64E-07	3.69E-07	
SVOC	2-Chloronaphthalene	91-58-7													
SVOC	2-Methylnaphthalene	91-57-6	1.38E-04	4.02E-04	3.61E-04	3.06E-04	4.91E-04	3.37E-04	3.85E-04	2.80E-04	3.88E-04	3.36E-04	4.69E-06	1.24E-05	4.07E-06
SVOC	2-Methylphenol	95-48-7	9.90E-05	4.72E-05	2.87E-04	1.92E-04	2.58E-04	7.31E-04	1.19E-04	4.92E-05	7.00E-05	2.86E-05	2.84E-06	6.38E-06	
SVOC	3,3'-Dichlorobenzidine	91-94-1		1.17E-08									5.16E-12	2.52E-11	
SVOC	4-Bromophenyl-phenylether	101-55-3													
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06											
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3													
SVOC	4-Methylphenol	106-44-5	1.91E-04	1.38E-04	1.04E-03	7.02E-04	8.62E-04	2.79E-03	3.35E-04	1.20E-04	1.61E-04	7.12E-05	1.17E-05	2.36E-05	2.99E-06

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 2: Subsurface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Undeveloped	Routine Industrial	Excavation
	Location of Emission:		All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Nitrophenol	100-02-7	2.31E-08		1.53E-07				3.34E-06	2.29E-06	2.65E-06				
SVOC	Acenaphthene	83-32-9	4.63E-05	2.41E-05	6.13E-05	4.08E-05	5.08E-05		1.15E-05	1.74E-06	2.40E-06	1.22E-06	5.85E-07	1.32E-06	
SVOC	Acenaphthylene	208-96-8	1.63E-05	9.32E-06	1.11E-06				3.80E-07				4.28E-08	2.09E-07	5.83E-07
SVOC	Anthracene	120-12-7	1.33E-06	7.40E-07	1.61E-06	1.07E-06	1.58E-06		1.57E-06	9.00E-07	1.46E-06	8.02E-07	1.98E-08	5.48E-08	2.10E-07
SVOC	Benzo(a)anthracene	56-55-3	1.11E-10	6.56E-10	1.75E-09	1.50E-07	9.00E-07		1.54E-09	1.20E-07	7.00E-07	8.00E-07	2.10E-11	5.09E-11	2.00E-08
SVOC	Benzo(a)pyrene	50-32-8	6.25E-11	9.17E-10	9.81E-10	8.33E-08	5.00E-07		1.00E-09	7.78E-08	4.67E-07	4.67E-07	1.14E-11	3.11E-11	2.22E-08
SVOC	Benzo(b)fluoranthene	205-99-2	2.16E-10	9.56E-10	3.43E-09	2.94E-07	1.77E-06		2.89E-09	1.78E-07	1.30E-06	1.30E-06	3.58E-11	8.61E-11	2.44E-08
SVOC	Benzo(g,h,i)perylene	191-24-2	6.12E-11		9.72E-10	8.33E-08	5.00E-07		8.15E-10	6.11E-08	3.67E-07	3.67E-07	9.40E-12	2.12E-11	1.64E-08
SVOC	Benzo(k)fluoranthene	207-08-9	2.16E-10	8.06E-10	3.43E-09	2.94E-07	1.77E-06		2.89E-09	1.78E-07	1.30E-06	1.30E-06	3.55E-11	8.45E-11	2.28E-08
SVOC	Benzoic Acid	65-85-0	4.56E-04	2.00E-04	2.90E-03	1.82E-03	2.16E-03		5.45E-03	2.89E-03	4.07E-03		2.65E-05	5.96E-05	
SVOC	Benzyl Alcohol	100-51-6	9.97E-10		1.66E-08	1.47E-06	1.13E-05		2.22E-09				1.66E-10	3.74E-10	
SVOC	Butylbenzylphthalate	85-68-7	9.47E-08	5.58E-06	2.70E-07	2.33E-05	1.40E-04		5.80E-08	1.68E-06	2.20E-05	1.70E-05	2.65E-09	5.96E-09	
SVOC	Carbazole	86-74-8													2.67E-08
SVOC	Chrysene	218-01-9	1.50E-10	8.22E-10	2.43E-09	2.11E-07	1.27E-06		1.32E-09	8.56E-08	5.33E-07	4.33E-07	2.71E-11	6.56E-11	2.17E-08
SVOC	Di-n-butylphthalate	84-74-2	5.68E-08	3.80E-06	5.29E-08	4.19E-06	1.30E-04	2.80E-05	4.96E-08	3.15E-06	8.00E-05	3.13E-05	4.90E-10	1.11E-09	4.67E-09
SVOC	Di-n-octylphthalate	117-84-0	6.85E-09	4.47E-07	9.03E-09	7.22E-07	4.33E-06		1.12E-08	7.18E-07	1.27E-05	1.27E-05	8.56E-11	2.00E-10	
SVOC	Dibenzo(a,h)anthracene	53-70-3	1.17E-12		7.76E-12		2.33E-08		1.69E-10	1.50E-08	9.00E-08	9.00E-08			1.61E-08
SVOC	Dibenzofuran	132-64-9	2.73E-09	1.90E-07	1.77E-09	1.39E-07	8.33E-07		6.72E-10	3.32E-08	2.13E-07	1.43E-07	1.61E-11	3.63E-11	
SVOC	Diethylphthalate	84-66-2	1.07E-08	6.98E-07	1.63E-08	1.37E-06	2.13E-05		5.43E-09	2.24E-07	1.67E-06	1.67E-06	1.55E-10	3.49E-10	
SVOC	Dimethylphthalate	131-11-3	4.39E-08	2.42E-06	1.66E-07	1.44E-05	8.67E-05	3.67E-05	2.90E-08	4.75E-07	5.33E-06	4.67E-07	1.63E-09	3.67E-09	
SVOC	Fluoranthene	206-44-0	2.56E-09	1.70E-07	2.91E-09	2.28E-07	1.37E-06		4.22E-09	3.09E-07	2.03E-06	1.13E-06	3.18E-11	7.78E-11	2.19E-08
SVOC	Fluorene	86-73-7	1.98E-05	1.04E-05	3.17E-05	2.18E-05	2.98E-05		6.14E-06	1.11E-06	1.64E-06	1.04E-06	3.05E-07	6.87E-07	
SVOC	Hexachlorobenzene	118-74-1		3.22E-10			3.10E-07						7.12E-13	3.48E-12	
SVOC	Hexachlorobutadiene	87-68-3	4.29E-09	2.71E-07	8.82E-09	7.59E-07	2.00E-05		1.23E-09				8.56E-11	1.93E-10	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	5.62E-11	4.89E-10	9.01E-10	7.78E-08	4.67E-07		6.31E-10	4.56E-08	2.73E-07	2.73E-07	9.86E-12	2.50E-11	1.89E-08
SVOC	Isophorone	78-59-1	3.07E-03	1.56E-03	3.59E-03	2.09E-03	2.98E-03	2.24E-03	8.42E-03	4.46E-03	7.45E-03	2.03E-03	6.82E-05	7.23E-05	4.43E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7													
SVOC	N-Nitrosodiphenylamine	86-30-6	2.72E-08		1.80E-07		2.30E-06		3.93E-06	3.50E-06	3.72E-06	8.41E-06	1.56E-08	3.41E-08	
SVOC	Naphthalene	91-20-3	9.32E-04	1.29E-03	1.67E-03	1.05E-03	1.36E-03	1.70E-03	2.13E-03	1.11E-03	1.73E-03	1.18E-03	1.60E-05	3.59E-05	1.44E-05
SVOC	Pentachlorophenol	87-86-5	1.41E-08	8.77E-07	3.03E-08	2.57E-06	2.10E-05		1.42E-08	7.28E-07	5.33E-06	5.00E-07	2.91E-10	6.55E-10	
SVOC	Phenanthrene	85-01-8	6.37E-09	4.03E-07	1.17E-08	9.84E-07	7.00E-06		5.62E-09	3.19E-07	2.13E-06	1.43E-06	1.16E-10	2.65E-10	8.33E-09
SVOC	Phenol	108-95-2	2.68E-04	1.41E-04	7.41E-04	4.28E-04	5.44E-04	1.56E-03	2.41E-03	1.29E-03	2.11E-03	1.52E-04	6.35E-06	1.53E-05	9.81E-06
SVOC	Pyrene	129-00-0	4.02E-09	2.64E-07	5.39E-09	4.44E-07	2.67E-06		3.39E-09	2.12E-07	1.40E-06	7.67E-07	5.56E-11	1.33E-10	2.14E-08
SVOC	bis(2-Chloroethyl) ether	111-44-4	3.56E-04	3.66E-04	6.01E-04	3.93E-04	4.86E-04		8.87E-05				2.36E-04	2.40E-05	1.96E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.26E-07	1.48E-05	2.73E-07	1.90E-05	7.67E-04	8.00E-05	9.98E-07	7.32E-05	2.97E-03	1.80E-04	2.86E-09	7.05E-09	2.22E-07
P/PCB	4,4'-DDD	72-54-8	2.31E-09	1.60E-07	1.07E-09	8.09E-08	1.10E-06		1.74E-10	8.33E-09		5.00E-08	9.29E-12	2.09E-11	4.33E-09
P/PCB	4,4'-DDE	72-55-9	3.31E-11		5.52E-10	4.89E-08	2.93E-07		7.36E-11				5.52E-12	1.24E-11	1.61E-08
P/PCB	4,4'-DDT	50-29-3	3.06E-09	2.14E-07	9.87E-10	6.93E-08	5.67E-07		1.74E-10				7.81E-12	1.76E-11	1.33E-08
P/PCB	Aldrin	309-00-2	2.27E-10		3.78E-09	3.35E-07	2.57E-06		5.04E-10				3.78E-11	8.51E-11	
P/PCB	Aroclor-1242	3469-21-9	1.94E-08	1.37E-06	2.15E-09		2.90E-06		1.88E-08	1.43E-06	9.33E-05	9.33E-05	2.33E-11	7.78E-11	
P/PCB	Aroclor-1248	2672-29-6	1.51E-08	9.41E-07	3.25E-08	2.76E-06	1.10E-04	1.10E-04	1.44E-08	7.82E-07	4.23E-05	4.23E-05	3.32E-10	7.81E-10	1.22E-08
P/PCB	Aroclor-1254	1097-69-1	2.33E-08	1.58E-06	2.43E-08	2.00E-06	1.20E-05	1.57E-06	9.51E-09	5.27E-07	1.47E-05	7.33E-06	2.95E-10	8.19E-10	4.89E-07
P/PCB	Aroclor-1260	1096-82-5	2.68E-08	9.83E-07	2.18E-07	1.92E-05	1.13E-03	2.07E-05	3.33E-08	3.25E-07	1.20E-05	1.20E-05	2.18E-09	4.93E-09	5.39E-08
P/PCB	Dieldrin	60-57-1	1.50E-10	1.10E-08	1.03E-11				3.51E-12						
P/PCB	Endosulfan I	959-98-8	7.52E-10	5.35E-08	5.14E-11				1.76E-11						2.17E-08
P/PCB	Endosulfan sulfate	1031-07-8													3.33E-09
P/PCB	Endrin	72-20-8	1.00E-09	7.14E-08	6.85E-11				2.34E-11						8.33E-09
P/PCB	Endrin aldehyde	7421-93-4													
P/PCB	Endrin ketone	3494-70-5		6.11E-10									2.70E-13	1.32E-12	
P/PCB	Heptachlor	76-44-8								4.89E-09		2.93E-08	9.65E-14	2.11E-13	3.44E-09
P/PCB	Heptachlor epoxide	1024-57-3								2.33E-09		1.40E-08	4.61E-14	1.01E-13	
P/PCB	Methoxychlor	72-43-5													1.61E-08
P/PCB	alpha-BHC	319-84-6	1.24E-11		2.07E-10	1.83E-08	1.10E-07		2.76E-11				2.07E-12	4.65E-12	
P/PCB	alpha-Chlordane	5103-71-9													1.22E-08

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 2: Subsurface Soil

ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Undeveloped	Routine Industrial	Excavation
			Location of Emission:	All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	beta-BHC	319-85-7		2.36E-11		3.94E-10	3.49E-08	2.67E-07		5.25E-11				3.94E-12	8.86E-12	1.44E-09
P/PCB	gamma-BHC	58-89-9														1.61E-09
P/PCB	gamma-Chlordane	5103-74-2		7.52E-10	5.43E-08	5.14E-11				1.76E-11						2.67E-09
INORG	Antimony	7440-36-0		1.33E-08	7.26E-07	4.61E-08	3.63E-06	5.47E-05	5.47E-05	1.01E-07	7.51E-06	5.07E-05	2.83E-05	5.02E-10	1.17E-09	
INORG	Arsenic	7440-38-2		2.90E-09	2.22E-07	3.34E-09	2.70E-07	2.59E-06	2.59E-06	2.80E-09	5.05E-07	1.80E-06	1.02E-05	1.32E-10	4.75E-10	4.22E-07
INORG	Barium	7440-39-3		1.93E-07	1.20E-05	6.89E-07	5.40E-05	8.97E-04	8.97E-04	1.61E-06	1.35E-04	2.13E-03	1.91E-03	1.24E-08	3.75E-08	
INORG	Beryllium	7440-41-7		1.43E-10	4.38E-08	2.17E-10	1.74E-08	1.13E-07		2.75E-10	3.41E-08	2.67E-07	5.00E-07	8.01E-11	3.83E-10	
INORG	Cadmium	7440-43-9		1.50E-08	6.69E-07	7.91E-08	5.89E-06	3.53E-05	3.53E-05	2.71E-07	2.03E-05	5.67E-04	5.80E-05	8.80E-10	2.08E-09	3.28E-07
INORG	Chromium 3+	6065-83-1		1.55E-07	7.56E-06	8.37E-07	7.05E-05	4.23E-04	4.23E-04	8.59E-07	6.56E-05	1.07E-03	8.80E-04	9.85E-09	2.39E-08	1.57E-06
INORG	Chromium 6+	8540-29-9		2.59E-08	1.26E-06	1.39E-07	1.17E-05	7.05E-05	7.05E-05	1.43E-07	1.09E-05	1.79E-04	1.47E-04	1.64E-09	3.98E-09	2.61E-07
INORG	Cobalt	7440-48-4		7.38E-09	5.11E-07	1.07E-08	7.86E-07	1.10E-05	1.10E-05	3.10E-08	2.73E-06	4.93E-05	4.93E-05	2.39E-10	7.68E-10	
INORG	Copper	7440-50-8		9.88E-08	3.19E-06	8.87E-07	7.33E-05	4.40E-04	4.40E-04	1.35E-06	1.01E-04	1.93E-03	1.49E-03	1.03E-08	2.48E-08	2.06E-06
INORG	Cyanide (total)	57-12-5		6.10E-09	4.32E-07	1.22E-09				1.79E-08	1.79E-06	2.21E-05	2.21E-05	7.18E-11	2.09E-10	
INORG	Lead	7439-92-1		9.38E-07	3.87E-05	6.62E-06	5.67E-04	3.40E-03	3.40E-03	5.08E-06	4.18E-04	5.73E-03	5.40E-03	7.88E-08	1.85E-07	8.00E-06
INORG	Manganese	7439-96-5		2.40E-07	3.00E-05	1.83E-07	1.31E-05	1.34E-04	1.34E-04	4.39E-07	4.64E-05	2.42E-04	5.13E-04	3.36E-08	1.56E-07	
INORG	Mercury	7439-97-6		1.78E-09	1.45E-07	5.32E-09	4.36E-07	2.62E-06	2.62E-06	7.20E-09	5.67E-07	1.20E-05	3.17E-06	1.54E-10	5.96E-10	2.50E-08
INORG	Nickel	7440-02-0		6.56E-09	4.68E-07	1.74E-08	1.37E-06	1.78E-05	1.78E-05	3.68E-08	3.04E-06	6.57E-05	6.57E-05	4.01E-10	1.40E-09	
INORG	Selenium	7782-49-2		6.45E-10	3.15E-08	2.85E-09	1.54E-07	2.77E-06	2.77E-06	2.39E-08	1.87E-06	5.23E-05	5.73E-06	4.68E-11	1.32E-10	
INORG	Silver	7440-22-4		7.20E-10	1.61E-08	8.48E-09	5.46E-07	1.16E-05	1.16E-05	5.15E-08	3.68E-06	1.04E-04	8.27E-06	6.87E-11	1.73E-10	
INORG	Thallium	7440-28-0		3.06E-11		4.76E-10	4.01E-08	3.33E-07		5.60E-10	4.21E-08	5.00E-07		4.53E-12	1.02E-11	
INORG	Vanadium	7440-62-2		7.36E-09	6.20E-07	7.04E-09	5.34E-07	4.07E-06	4.07E-06	1.28E-08	1.13E-06	1.59E-05	1.59E-05	3.75E-10	1.60E-09	
INORG	Zinc	7440-66-6		4.18E-07	1.70E-05	2.55E-06	1.84E-04	2.76E-03	2.76E-03	1.02E-05	8.71E-04	5.27E-03	5.27E-03	3.98E-08	9.49E-08	1.66E-05
TIC	Acetaldehyde	75-07-0														
TIC	Acetophenone	98-86-2														
TIC	Butanol, 1-	71-36-3														
TIC	Caprolactam	105-60-2														
TIC	Chlorodifluoromethane	75-45-6														
TIC	Cyclohexanone	108-94-1														
TIC	Diethyl ether	60-29-7														
TIC	Dioxane, 1,4-	123-91-1														
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5														
TIC	Hexane, n-	110-54-3		5.64E-12		9.40E-11	8.33E-09			1.25E-11				9.40E-13	2.12E-12	
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7														
TIC	Phthalic anhydride	85-44-9		3.64E-09	2.58E-07	2.48E-10				8.48E-11						

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Construction (0-10')	Construction (0-10')	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')
	Location of Emission:		All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	7.61E-03	4.94E-04	4.07E-03	9.88E-08		1.55E-03	1.13E-04	1.19E-03	2.67E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5	3.08E-06	4.78E-08	1.73E-08			1.67E-06	2.87E-08	4.67E-09	
VOC	1,1,2-Trichloroethane	79-00-5	6.71E-06	2.19E-07	2.18E-07			3.78E-06	1.31E-07	5.87E-08	
VOC	1,1-Dichloroethane	75-34-3	1.72E-04	4.63E-06	3.61E-05	8.70E-10		4.26E-05	1.18E-06	9.74E-06	2.33E-07
VOC	1,1-Dichloroethene	75-35-4			2.84E-11	4.60E-08				7.65E-12	1.24E-08
VOC	1,2,4-Trimethylbenzene	95-63-6									
VOC	1,2-Dichloroethane	107-06-2	8.64E-05	1.91E-06	1.24E-05			2.72E-05	1.15E-06	3.33E-06	
VOC	1,2-Dichloroethene (total)	540-59-0	7.46E-04	1.51E-05	1.13E-04	4.41E-08		2.30E-04	9.05E-06	3.32E-05	9.68E-06
VOC	1,2-Dichloropropane	78-87-5	1.16E-04	1.10E-06	5.30E-06	1.10E-10		4.27E-05	6.57E-07	1.43E-06	1.92E-08
VOC	1,3,5-Trimethylbenzene	108-67-8									
VOC	2-Butanone	78-93-3	1.67E-06	4.62E-06	5.74E-04	1.72E-06		3.20E-06	1.06E-06	1.68E-04	4.63E-07
VOC	2-Hexanone	591-78-6	1.21E-03	1.46E-05	1.16E-04	2.01E-04		2.61E-04	3.65E-06	3.12E-05	5.42E-05
VOC	4-Methyl-2-pentanone	108-10-1	2.16E-03	1.59E-04	1.38E-03	6.81E-05		3.34E-04	3.64E-05	4.05E-04	5.77E-05
VOC	Acetone	67-64-1	3.34E-03	4.73E-04	4.05E-03	8.24E-04		5.48E-04	1.09E-04	1.19E-03	2.22E-04
VOC	Benzene	71-43-2	3.01E-03	3.24E-04	6.89E-04	6.05E-05	5.74E-02	4.28E-03	1.64E-04	2.02E-04	1.63E-05
VOC	Bromodichloromethane	75-27-4					4.06E-06				
VOC	Carbon Disulfide	75-15-0		4.24E-10	1.74E-11				2.55E-10	5.10E-12	
VOC	Carbon Tetrachloride	56-23-5									
VOC	Chlorobenzene	108-90-7	8.85E-04	2.44E-05	2.00E-04	3.60E-08		1.37E-04	5.66E-06	5.86E-05	3.39E-06
VOC	Chloroethane	75-00-3	4.96E-04	5.04E-06	6.96E-11		7.36E-03	1.21E-03	3.02E-06	2.04E-11	
VOC	Chloroform	67-66-3	4.09E-04	1.97E-05	5.08E-05	5.80E-11	5.38E-06	1.63E-04	1.18E-05	1.37E-05	1.37E-08
VOC	Chloromethane	74-87-3									
VOC	Ethyl Benzene	100-41-4	3.01E-03	1.71E-04	1.23E-03	4.42E-04		5.64E-04	4.00E-05	3.60E-04	3.22E-04
VOC	Methylene Chloride	75-09-2	3.88E-03	2.73E-05	4.61E-05	6.25E-08	4.41E-04	1.99E-03	1.64E-05	1.24E-05	3.16E-07
VOC	Styrene	100-42-5	6.20E-04	2.77E-05	2.22E-04	1.33E-07		9.78E-05	6.35E-06	6.51E-05	5.78E-06
VOC	Tetrachloroethene	127-18-4	4.99E-03	2.02E-04	1.58E-03	7.52E-04		9.63E-04	4.63E-05	4.63E-04	3.86E-04
VOC	Tetrahydrofuran	109-99-9									
VOC	Toluene	108-88-3	1.83E-02	3.79E-04	3.18E-03	1.49E-03	1.23E-05	3.67E-03	8.89E-05	9.32E-04	7.12E-04
VOC	Trichloroethene	79-01-6	1.23E-02	8.13E-04	5.90E-03	7.29E-04		1.86E-03	1.87E-04	1.73E-03	1.97E-04
VOC	Vinyl Chloride	75-01-4	7.39E-06	1.61E-07	9.25E-07			1.60E-06	5.53E-08	2.49E-07	
VOC	Xylenes (total)	1330-20-7	9.22E-03	1.77E-04	1.68E-03	7.60E-04		1.88E-03	4.29E-05	4.93E-04	3.26E-04
VOC	cis-1,2-Dichloroethene	156-59-2	8.09E-04	7.52E-05	5.69E-07	3.46E-07		4.54E-04	4.51E-05	1.53E-07	9.34E-08
VOC	m,p-xylene	6777-61-2	2.99E-03	2.71E-05	2.21E-04	3.64E-08		1.27E-03	1.23E-05	6.48E-05	9.81E-09
VOC	ortho-xylene	95-47-6	9.29E-04	9.79E-06	8.01E-05	1.30E-08		3.72E-04	5.35E-06	2.35E-05	1.27E-08
VOC	p-Cymene	99-87-6									
VOC	trans-1,2-Dichloroethene	156-60-5	1.21E-10	4.16E-09			6.02E-06	9.87E-11	3.34E-09		
SVOC	1,2,4-Trichlorobenzene	120-82-1	1.36E-05	1.74E-07	1.40E-06			3.17E-06	4.36E-08	3.78E-07	
SVOC	1,2-Dichlorobenzene	95-50-1	2.75E-04	3.15E-06	2.48E-05	9.47E-05		6.76E-05	8.19E-07	6.69E-06	2.55E-05
SVOC	1,3-Dichlorobenzene	541-73-1	1.47E-11	5.24E-09				8.27E-12	3.15E-09		
SVOC	1,4-Dichlorobenzene	106-46-7	1.42E-05	8.52E-08	4.63E-07			6.16E-06	5.11E-08	1.25E-07	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	2.62E-05	3.31E-07				6.40E-05	1.98E-07		
SVOC	2,4,5-Trichlorophenol	95-95-4		6.83E-10	4.26E-09	9.86E-10			1.57E-10	1.25E-09	1.25E-09
SVOC	2,4-Dichlorophenol	120-83-2	6.76E-07	5.17E-09				3.80E-07	3.10E-09		
SVOC	2,4-Dimethylphenol	105-67-9	1.20E-05	1.90E-07	1.74E-06	3.89E-06		2.39E-06	4.73E-08	5.10E-07	1.05E-06
SVOC	2,4-Dinitrotoluene	121-14-2	3.00E-07	1.06E-08	7.31E-08			4.16E-08	2.43E-09	2.14E-08	
SVOC	2,6-Dinitrotoluene	606-20-2	1.33E-06	2.45E-08	2.03E-07		5.50E-08	2.87E-07	6.14E-09	5.47E-08	
SVOC	2-Chloronaphthalene	91-58-7									
SVOC	2-Methylnaphthalene	91-57-6	5.06E-05	9.33E-07	7.25E-06	3.47E-06		1.04E-05	2.31E-07	2.08E-06	1.67E-06
SVOC	2-Methylphenol	95-48-7	2.95E-05	2.78E-07	2.56E-06	7.24E-06		6.76E-06	6.96E-08	6.90E-07	1.95E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1		4.20E-12					2.52E-12		
SVOC	4-Bromophenyl-phenylether	101-55-3									
SVOC	4-Chloro-3-methylphenol	59-50-7		6.96E-10					4.18E-10		
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3									
SVOC	4-Methylphenol	106-44-5	9.77E-05	1.01E-06	8.53E-06	2.76E-05		2.15E-05	2.53E-07	2.30E-06	7.44E-06

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Construction (0-10')	Construction (0-10')	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')
			Location of Emission:	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Nitrophenol	100-02-7		2.00E-07	7.01E-09	4.61E-08			2.78E-08	1.61E-09	1.35E-08	
SVOC	Acenaphthene	83-32-9		6.02E-06	5.87E-08	5.03E-07	2.09E-09		1.68E-06	1.47E-08	1.36E-07	5.60E-09
SVOC	Acenaphthylene	208-96-8		4.34E-07	3.35E-09				2.44E-07	2.01E-09		
SVOC	Anthracene	120-12-7		2.32E-07	2.75E-09	2.54E-08	3.83E-09		5.53E-08	6.32E-10	7.43E-09	2.97E-09
SVOC	Benzo(a)anthracene	56-55-3		2.16E-10	3.67E-10	1.22E-08	1.39E-08		4.06E-11	8.42E-11	3.57E-09	
SVOC	Benzo(a)pyrene	50-32-8		1.29E-10	2.38E-10	8.12E-09	8.12E-09		2.38E-11	5.46E-11	2.38E-09	
SVOC	Benzo(b)fluoranthene	205-99-2		4.15E-10	5.45E-10	2.26E-08	2.26E-08		7.85E-11	1.25E-10	6.63E-09	
SVOC	Benzo(g,h,i)perylene	191-24-2		1.17E-10	1.87E-10	6.38E-09	6.38E-09		2.22E-11	4.29E-11	1.87E-09	
SVOC	Benzo(k)fluoranthene	207-08-9		4.15E-10	5.45E-10	2.26E-08	2.26E-08		7.85E-11	1.25E-10	6.63E-09	
SVOC	Benzoic Acid	65-85-0		5.26E-04	8.85E-06	7.09E-05			9.27E-05	2.03E-06	2.08E-05	
SVOC	Benzyl Alcohol	100-51-6		1.34E-09	2.12E-09	1.12E-07			2.91E-10	5.30E-10	3.03E-08	
SVOC	Butylbenzylphthalate	85-68-7		2.46E-08	3.36E-08	1.39E-06	2.96E-07		5.96E-09	8.40E-09	3.74E-07	
SVOC	Carbazole	86-74-8			4.62E-12					3.71E-12		
SVOC	Chrysene	218-01-9		2.53E-10	3.04E-10	1.25E-08	7.54E-09		5.00E-11	7.60E-11	3.38E-09	
SVOC	Di-n-butylphthalate	84-74-2		7.77E-09	9.63E-09	1.39E-06	5.45E-07		1.98E-09	2.21E-09	4.08E-07	7.48E-08
SVOC	Di-n-octylphthalate	117-84-0		1.42E-09	2.20E-09	2.20E-07	2.20E-07		3.20E-10	5.04E-10	6.46E-08	
SVOC	Dibenzo(a,h)anthracene	53-70-3		1.02E-11	4.59E-11	1.57E-09	1.57E-09		1.41E-12	1.05E-11	4.59E-10	
SVOC	Dibenzofuran	132-64-9		2.21E-10	2.00E-10	8.25E-09	2.49E-09		7.03E-11	5.00E-11	2.23E-09	
SVOC	Diethylphthalate	84-66-2		1.70E-09	1.98E-09	2.11E-07	2.90E-08		4.44E-10	4.95E-10	5.70E-08	
SVOC	Dimethylphthalate	131-11-3		1.45E-08	2.08E-08	8.58E-07	3.63E-07		3.42E-09	5.20E-09	2.31E-07	9.79E-08
SVOC	Fluoranthene	206-44-0		5.01E-10	9.45E-10	3.54E-08	1.97E-08		1.13E-10	2.17E-10	1.04E-08	
SVOC	Fluorene	86-73-7		3.03E-06	3.14E-08	2.95E-07	3.60E-09		8.15E-07	7.84E-09	7.97E-08	4.25E-09
SVOC	Hexachlorobenzene	118-74-1			1.16E-13	3.07E-09				6.96E-14	8.28E-10	
SVOC	Hexachlorobutadiene	87-68-3		7.93E-10	1.09E-09	1.98E-07			2.07E-10	2.73E-10	5.34E-08	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5		1.02E-10	1.39E-10	4.76E-09	4.76E-09		1.96E-11	3.20E-11	1.39E-09	
SVOC	Isophorone	78-59-1		7.98E-04	1.36E-05	1.30E-04	2.26E-05	5.40E-07	1.63E-04	3.13E-06	3.80E-05	1.02E-05
SVOC	N-Nitroso-di-n-propylamine	621-64-7										
SVOC	N-Nitrosodiphenylamine	86-30-6		2.36E-07	1.07E-08	7.64E-08	2.49E-08		3.27E-08	2.46E-09	2.19E-08	3.56E-08
SVOC	Naphthalene	91-20-3		2.60E-04	3.52E-06	3.00E-05	1.69E-05		5.50E-05	8.52E-07	8.81E-06	5.97E-06
SVOC	Pentachlorophenol	87-86-5		3.27E-09	3.70E-09	2.08E-07	8.70E-09		7.74E-10	9.24E-10	5.61E-08	
SVOC	Phenanthrene	85-01-8		1.29E-09	1.42E-09	6.93E-08	2.49E-08		3.13E-10	3.54E-10	1.87E-08	
SVOC	Phenol	108-95-2		1.95E-04	3.95E-06	3.67E-05	1.55E-05	4.05E-06	3.34E-05	9.08E-07	1.08E-05	4.17E-06
SVOC	Pyrene	129-00-0		6.62E-10	6.49E-10	2.64E-08	1.33E-08		1.65E-10	1.60E-10	7.14E-09	
SVOC	bis(2-Chloroethyl) ether	111-44-4		5.85E-05	6.36E-07	4.81E-06		2.20E-05	2.47E-05	1.84E-07	1.30E-06	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7		8.08E-08	2.24E-07	5.16E-05	3.13E-06		1.49E-08	5.14E-08	1.51E-05	2.14E-07
P/PCB	4,4'-DDD	72-54-8		1.34E-10	1.16E-10	1.09E-08	8.70E-10		4.98E-11	3.46E-11	2.94E-09	
P/PCB	4,4'-DDE	72-55-9		4.46E-11	7.04E-11	2.90E-09			9.65E-12	1.76E-11	7.83E-10	
P/PCB	4,4'-DDT	50-29-3		1.43E-10	9.97E-11	5.61E-09			5.88E-11	4.62E-11	1.51E-09	
P/PCB	Aldrin	309-00-2		3.06E-10	4.83E-10	2.54E-08			6.62E-11	1.21E-10	6.85E-09	
P/PCB	Aroclor-1242	3469-21-9		1.61E-09	4.39E-09	1.62E-06	1.62E-06		4.41E-10	1.01E-09	4.76E-07	
P/PCB	Aroclor-1248	2672-29-6		3.46E-09	3.97E-09	1.09E-06	1.09E-06		8.25E-10	9.92E-10	2.94E-07	2.94E-07
P/PCB	Aroclor-1254	1097-69-1		2.77E-09	2.88E-09	2.55E-07	1.28E-07		7.74E-10	7.20E-10	7.48E-08	4.18E-09
P/PCB	Aroclor-1260	1096-82-5		1.81E-08	2.76E-08	1.12E-05	2.09E-07		4.03E-09	6.91E-09	3.03E-06	5.52E-08
P/PCB	Dieldrin	60-57-1		4.01E-12	3.94E-12				2.26E-12	2.37E-12		
P/PCB	Endosulfan I	959-98-8		2.01E-11	1.93E-11				1.13E-11	1.16E-11		
P/PCB	Endosulfan sulfate	1031-07-8			5.76E-13					4.62E-13		
P/PCB	Endrin	72-20-8		2.67E-11	2.57E-11				1.50E-11	1.54E-11		
P/PCB	Endrin aldehyde	7421-93-4										
P/PCB	Endrin ketone	3494-70-5			2.20E-13					1.32E-13		
P/PCB	Heptachlor	76-44-8			1.50E-11		5.10E-10			3.43E-12		
P/PCB	Heptachlor epoxide	1024-57-3			7.14E-12		2.44E-10			1.64E-12		
P/PCB	Methoxychlor	72-43-5			2.78E-12					2.23E-12		
P/PCB	alpha-BHC	319-84-6		1.67E-11	2.64E-11	1.09E-09			3.62E-12	6.60E-12	2.94E-10	
P/PCB	alpha-Chlordane	5103-71-9			2.11E-12					1.69E-12		

Table 3-4c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Approach 2: Subsurface Soil

ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Construction (0-10')	Construction (0-10')	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')
			Location of Emission:	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	beta-BHC	319-85-7		3.18E-11	5.03E-11	2.64E-09			6.89E-12	1.26E-11	7.12E-10	
P/PCB	gamma-BHC	58-89-9			2.78E-13					2.23E-13		
P/PCB	gamma-Chlordane	5103-74-2		2.01E-11	1.96E-11				1.13E-11	1.17E-11		
INORG	Antimony	7440-36-0		9.30E-09	2.30E-08	8.82E-07	5.41E-07		1.66E-09	5.27E-09	2.58E-07	1.46E-07
INORG	Arsenic	7440-38-2		4.58E-10	1.55E-09	3.13E-08	1.77E-07		1.13E-10	3.55E-10	9.18E-09	6.92E-09
INORG	Barium	7440-39-3		1.44E-07	4.14E-07	3.71E-05	3.32E-05		2.55E-08	9.49E-08	1.09E-05	2.39E-06
INORG	Beryllium	7440-41-7		3.41E-11	1.04E-10	4.64E-09	8.70E-09		7.43E-12	2.39E-11	1.36E-09	
INORG	Cadmium	7440-43-9		2.13E-08	6.21E-08	9.86E-06	1.01E-06		3.48E-09	1.43E-08	2.89E-06	9.43E-08
INORG	Chromium 3+	6065-83-1		1.12E-07	2.01E-07	1.86E-05	1.53E-05		2.17E-08	4.61E-08	5.46E-06	1.13E-06
INORG	Chromium 6+	8540-29-9		1.87E-08	3.35E-08	3.11E-06	2.55E-06		3.62E-09	7.68E-09	9.11E-07	1.88E-07
INORG	Cobalt	7440-48-4		2.67E-09	8.37E-09	8.58E-07	8.58E-07		5.02E-10	1.92E-09	2.52E-07	2.93E-08
INORG	Copper	7440-50-8		1.42E-07	3.09E-07	3.36E-05	2.59E-05		2.54E-08	7.08E-08	9.84E-06	1.17E-06
INORG	Cyanide (total)	57-12-5		1.22E-09	5.48E-09	3.84E-07	3.84E-07		2.37E-10	1.26E-09	1.13E-07	
INORG	Lead	7439-92-1		7.84E-07	1.28E-06	9.98E-05	9.40E-05		1.55E-07	2.93E-07	2.92E-05	9.08E-06
INORG	Manganese	7439-96-5		4.29E-08	1.42E-07	4.22E-06	8.93E-06		9.47E-09	3.26E-08	1.24E-06	3.58E-07
INORG	Mercury	7439-97-6		8.27E-10	1.73E-09	2.09E-07	5.51E-08		1.62E-10	3.98E-10	6.12E-08	6.99E-09
INORG	Nickel	7440-02-0		3.47E-09	9.32E-09	1.14E-06	1.14E-06		6.39E-10	2.14E-09	3.35E-07	4.74E-08
INORG	Selenium	7782-49-2		1.57E-09	5.72E-09	9.11E-07	9.98E-08		2.33E-10	1.31E-09	2.67E-07	7.40E-09
INORG	Silver	7440-22-4		3.54E-09	1.13E-08	1.81E-06	1.44E-07		5.30E-10	2.58E-09	5.30E-07	3.11E-08
INORG	Thallium	7440-28-0		6.66E-11	1.29E-10	8.70E-09			1.21E-11	2.95E-11	2.55E-09	
INORG	Vanadium	7440-62-2		1.38E-09	3.46E-09	2.77E-07	2.77E-07		3.08E-10	7.94E-10	8.11E-08	1.09E-08
INORG	Zinc	7440-66-6		7.68E-07	2.67E-06	9.16E-05	9.16E-05		1.22E-07	6.12E-07	2.69E-05	7.38E-06
TIC	Acetaldehyde	75-07-0										
TIC	Acetophenone	98-86-2										
TIC	Butanol, 1-	71-36-3										
TIC	Caprolactam	105-60-2										
TIC	Chlorodifluoromethane	75-45-6										
TIC	Cyclohexanone	108-94-1										
TIC	Diethyl ether	60-29-7										
TIC	Dioxane, 1,4-	123-91-1										
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5										
TIC	Hexane, n-	110-54-3		7.60E-12	1.20E-11				1.65E-12	3.00E-12		
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7										
TIC	Phthalic anhydride	85-44-9		9.70E-11	9.28E-11				5.45E-11	5.57E-11		

TABLE 3-5a: Current High-End Exposure Factors and Estimated Media Intakes

			On-Site		Off-Site			
			Routine Worker in Area 1	Trespasser in Area 4A or 4B	Resident in Area 5A		Resident in Area 6	
			Adult	Age 9-18	Child	Adult	Child	Adult
Soil/Sediment Ingestion								
Ingestion Rate	mg-soil/day	IR	100	100	400	100	400	100
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Fraction Ingested	unitless	FI	1	1	1	1	1	1
Exposure Frequency	days/year	EF	250	54	350	350	78	6
Exposure Duration	years	ED	20	10	6	30	6	30
Body Weight	kg	BW	70	50	15	70	15	70
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	7	12	12	9	NA
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	2,129	2,190	10,950	1,643	180
Soil/Sediment Dermal Contact								
Adherence Factor	mg/cm^2-event	AD	0.08	0.08	0.30	0.08	0.30	0.08
Skin Surface Area	cm^2	SA	5,800	4,400	2,100	5,800	2,100	5,800
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Absorption	unitless	ABS	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec
Exposure Frequency	days/year	EF	250	54	350	350	78	6
Exposure Duration	years	ED	20	10	6	30	6	30
Body Weight	kg	BW	70	50	15	70	15	70
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	7	12	12	9	NA
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	2,129	2,190	10,950	1,643	180
Ambient Air Inhalation								
Exposure Time	hr/hr in day	FC	24/24	4/24	24/24	24/24	24/24	24/24
Exposure Frequency	days/year	EF	250	54	350	350	350	350
Exposure Duration	years	ED	20	10	6	30	6	30
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	7	12	12	12	12
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	2,129	2,190	10,950	2,190	10,950
Inhalation During On-site Excavation for Utility Maintenance								
Exposure Time	hr/hr in day	FC	--	--	8/24	8/24	8/24	8/24
Exposure Frequency	days/year	EF	--	--	10	10	10	10
Exposure Duration	years	ED	--	--	6	30	6	30
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	NA	NA	NA	NA
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	60	300	60	300
Incidental Ingestion of Surface Water								
Drinking Rate	L-water/day	DR	0.05	0.1	--	--	--	--
Exposure Frequency	days/year	EF	12	14	--	--	--	--
Exposure Duration	years	ED	20	10	--	--	--	--
Body Weight	kg	BW	70	50	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	25,550	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	7	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	2,129	--	--	--	--
Dermal Contact with Surface Water								
Conversion Factor	L/cm^3	CF	1E-03	1E-03	--	--	--	--
Skin Surface Area	cm^2	SA	5,800	4,400	--	--	--	--
Permeability	cm/hour	K_p	chem-spec	chem-spec	--	--	--	--
Exposure Time	hours/day	ET	1	2	--	--	--	--
Exposure Frequency	days/year	EF	12	14	--	--	--	--
Exposure Duration	years	ED	20	10	--	--	--	--
Body Weight	kg	BW	70	50	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	25,550	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	7	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	2,129	--	--	--	--
Incidental Ingestion of Ground Water - Outdoor								
Drinking Rate	L-water/day	DR	--	--	0.15	0.05	--	--
Exposure Frequency	days/year	EF	--	--	36	40	--	--
Exposure Duration	years	ED	--	--	6	30	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	3	5	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	548	4,563	--	--
Dermal Contact with Ground Water - Outdoor								
Conversion Factor	L/cm^3	CF	--	--	1E-03	1E-03	--	--
Skin Surface Area	cm^2	SA	--	--	8,400	5,800	--	--
Permeability	cm/hour	K_p	--	--	chem-spec	chem-spec	--	--
Exposure Time	hours/day	ET	--	--	3	1	--	--
Exposure Frequency	days/year	EF	--	--	36	40	--	--
Exposure Duration	years	ED	--	--	6	30	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	3	5	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	548	4,563	--	--
Drinking Water Consumption								
Drinking Rate	L-water/day	DR	--	--	1	2	--	--
Exposure Frequency	days/year	EF	--	--	350	350	--	--
Exposure Duration	years	ED	--	--	6	30	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	10,950	--	--
Bathing/Showering Dermal Contact								
Conversion Factor	L/cm^3	CF	--	--	1E-03	1E-03	--	--
Skin Surface Area	cm^2	SA	--	--	8,400	23,000	--	--
Permeability	cm/hour	K_p	--	--	chem-spec	chem-spec	--	--
Exposure Time	hours/day	ET	--	--	0.75	0.58	--	--
Exposure Frequency	days/year	EF	--	--	250	350	--	--
Exposure Duration	years	ED	--	--	6	30	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	10,950	--	--
Inhalation of Emissions from Indoor Water Use								
Exposure Time	hr/day	ET	--	--	0.75	0.58	--	--
Exposure Frequency	days/year	EF	--	--	350	350	--	--
Exposure Duration	years	ED	--	--	6	30	--	--
Conversion Factor	hr/day	CF			24	24		
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	10,950	--	--

Notes:

chem-spec = Chemical Specific

(a) Averaging Time, noncancer = ED x AP/12 x 365 d/y, except for acute exposures where AP = NA and ATnc = EF x ED.

TABLE 3-5b: Future High-End Exposure Factors and Estimated Media Intakes

			On-Site				Off-Site				
			Worker during Routine Activities Areas 1,2,3,4B	Worker during Excavation for Utility Maintenance Area 1,2,3,4B	Construction Worker Areas 2 & 3	Trespasser All On-Site Areas	Resident in Area 5A		Resident in Area 6		Worker during Excavation for Utility Maintenance in Area 5B
			Adult	Adult	Adult	Age 9-18	Child	Adult	Child	Adult	Adult
Soil/Sediment Ingestion											
Ingestion Rate	mg-soil/day	IR	100	480	480	100	400	100	400	100	–
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	–
Fraction Ingested	unitless	FI	1	1	1	1	1	1	1	1	–
Exposure Frequency	days/year	EF	250	10	196	54	350	350	78	6	–
Exposure Duration	years	ED	20	20	1	10	6	30	6	30	–
Body Weight	kg	BW	70	70	70	50	15	70	15	70	–
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550	25,550	25,550	–
Averaging Period, noncancer	months/yr	AP_{nc}	12	NA	9	7	12	12	9	NA	–
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	200	274	2,129	2,190	10,950	1,643	180	–
Soil/Sediment Dermal Contact											
Adherence Factor	mg/cm^2-event	AD	0.08	0.08	0.08	0.08	0.30	0.08	0.30	0.08	–
Skin Surface Area	cm^2	SA	5,800	5,800	5,800	4,400	2,100	5,800	2,100	5,800	–
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	–
Absorption	unitless	ABS	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	–
Exposure Frequency	days/year	EF	250	10	196	54	350	350	78	6	–
Exposure Duration	years	ED	20	20	1	10	6	30	6	30	–
Body Weight	kg	BW	70	70	70	50	15	70	15	70	–
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550	25,550	25,550	–
Averaging Period, noncancer	months/yr	AP_{nc}	12	NA	9	7	12	12	9	NA	–
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	200	274	2,129	2,190	10,950	1,643	180	–
Ambient Air Inhalation											
Exposure Time	hr/hr in day	FC	24/24	–	–	4/24	24/24	24/24	24/24	24/24	–
Exposure Frequency	days/year	EF	250	–	–	54	350	350	350	350	–
Exposure Duration	years	ED	20	–	–	10	6	30	6	30	–
Averaging Time, cancer	days	AT_c	25,550	–	–	25,550	25,550	25,550	25,550	25,550	–
Averaging Period, noncancer	months/yr	AP_{nc}	12	–	–	7	12	12	12	12	–
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	–	–	2,129	2,190	10,950	2,190	10,950	–
Intake factor, cancer	unitless		2.0E-01	–	–	3.5E-03	8.2E-02	4.1E-01	8.2E-02	4.1E-01	–
Intake factor, noncancer	unitless		6.8E-01	–	–	4.2E-02	9.6E-01	9.6E-01	9.6E-01	9.6E-01	–
Inhalation During On-site Excavation for Utility Maintenance											
Exposure Time	hr/hr in day	FC	–	34/24	–	–	8/24	8/24	8/24	8/24	34/24
Exposure Frequency	days/year	EF	–	10	–	–	10	10	10	10	10
Exposure Duration	years	ED	–	20	–	–	6	30	6	30	20
Averaging Time, cancer	days	AT_c	–	25,550	–	–	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	–	NA	–	–	NA	NA	NA	NA	NA
Averaging Time, noncancer (a)	days	AT_{nc}	–	200	–	–	60	300	60	300	200
Inhalation During On-site Construction Activities											
Exposure Time	hr/hr in day	FC	–	–	34/24	–	8/24	8/24	8/24	8/24	–
Exposure Frequency	days/year	EF	–	–	196	–	196	196	196	196	–
Exposure Duration	years	ED	–	–	1	–	1	1	1	1	–
Averaging Time, cancer	days	AT_c	–	–	25,550	–	25,550	25,550	25,550	25,550	–
Averaging Period, noncancer	months/yr	AP_{nc}	–	–	9	–	9	9	9	9	–
Averaging Time, noncancer (a)	days	AT_{nc}	–	–	274	–	274	274	274	274	–
Incidental Ingestion of Surface Water											
Drinking Rate	L-water/day	DR	0.05	–	–	0.1	–	–	–	–	–
Exposure Frequency	days/year	EF	12	–	–	14	–	–	–	–	–
Exposure Duration	years	ED	20	–	–	10	–	–	–	–	–
Body Weight	kg	BW	70	–	–	50	–	–	–	–	–
Averaging Time, cancer	days	AT_c	25,550	–	–	25,550	–	–	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	3	–	–	7	–	–	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	–	–	2,129	–	–	–	–	–
Intake, cancer	L-water/kg/day		6.7E-06	–	–	1.1E-05	–	–	–	–	–
Intake, noncancer	L-water/kg/day		9.4E-05	–	–	1.3E-04	–	–	–	–	–
Dermal Contact with Surface Water											
Conversion Factor	L/cm^3	CF	1E-03	–	–	1E-03	–	–	–	–	–
Skin Surface Area	cm^2	SA	5,800	–	–	4,400	–	–	–	–	–
Permeability	cm/hour	K_p	chem-spec	–	–	chem-spec	–	–	–	–	–
Exposure Time	hours/day	ET	1	–	–	2	–	–	–	–	–
Exposure Frequency	days/year	EF	12	–	–	14	–	–	–	–	–
Exposure Duration	years	ED	20	–	–	10	–	–	–	–	–
Body Weight	kg	BW	70	–	–	50	–	–	–	–	–
Averaging Time, cancer	days	AT_c	25,550	–	–	25,550	–	–	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	3	–	–	7	–	–	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	–	–	2,129	–	–	–	–	–
Incidental Ingestion of Ground Water - Outdoor											
Drinking Rate	L-water/day	DR	0.1	–	–	–	0.15	0.05	–	–	–
Exposure Frequency	days/year	EF	40	–	–	–	36	40	–	–	–
Exposure Duration	years	ED	20	–	–	–	6	30	–	–	–
Body Weight	kg	BW	70	–	–	–	15	70	–	–	–
Averaging Time, cancer	days	AT_c	25,550	–	–	–	25,550	25,550	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	5	–	–	–	3	5	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	3,042	–	–	–	548	4,563	–	–	–
Dermal Contact with Ground Water - Outdoor											
Conversion Factor	L/cm^3	CF	1E-03	1E-03	–	–	1E-03	1E-03	–	–	1E-03
Skin Surface Area	cm^2	SA	5,800	5,800	–	–	8,400	5,800	–	–	5,800
Permeability	cm/hour	K_p	chem-spec	chem-spec	–	–	chem-spec	chem-spec	–	–	chem-spec
Exposure Time	hours/day	ET	2	8	–	–	3	1	–	–	8
Exposure Frequency	days/year	EF	40	10	–	–	36	40	–	–	10
Exposure Duration	years	ED	20	20	–	–	6	30	–	–	20
Body Weight	kg	BW	70	70	–	–	15	70	–	–	70
Averaging Time, cancer	days	AT_c	25,550	25,550	–	–	25,550	25,550	–	–	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	5	NA	–	–	3	5	–	–	NA
Averaging Time, noncancer (a)	days	AT_{nc}	3,042	200	–	–	548	4,563	–	–	200
Drinking Water Consumption											
Drinking Rate	L-water/day	DR	–	–	–	–	1	2	–	–	–
Exposure Frequency	days/year	EF	–	–	–	–	350	350	–	–	–
Exposure Duration	years	ED	–	–	–	–	6	30	–	–	–
Body Weight	kg	BW	–	–	–	–	15	70	–	–	–
Averaging Time, cancer	days	AT_c	–	–	–	–	25,550	25,550	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	–	–	–	–	12	12	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	–	–	–	–	2,190	10,950	–	–	–
Bathing/Showering Dermal Contact											
Conversion Factor	L/cm^3	CF	1E-03	–	–	–	1E-03	1E-03	–	–	–
Skin Surface Area	cm^2	SA	23,000	–	–	–	8,400	23,000	–	–	–
Permeability	cm/hour	K_p	chem-spec	–	–	–	chem-spec	chem-spec	–	–	–
Exposure Time	hours/day	ET	0.33	–	–	–	0.75	0.58	–	–	–
Exposure Frequency	days/year	EF	250	–	–	–	250	350	–	–	–
Exposure Duration	years	ED	20	–	–	–	6	30	–	–	–
Body Weight	kg	BW	70	–	–	–	15	70	–	–	–
Averaging Time, cancer	days	AT_c	25,550	–	–	–	25,550	25,550	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	12	–	–	–	12	12	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	–	–	–	2,190	10,950	–	–	–
Inhalation of Emissions from Indoor Water Use											
Exposure Time	hr/day	ET	0.33	–	–	–	0.75	0.58	–	–	–
Exposure Frequency	days/year	EF	250	–	–	–	350	350	–	–	–
Exposure Duration	years	ED	20	–	–	–	6	30	–	–	–
Conversion Factor	hr/day	CF	24				24	24			–
Averaging Time, cancer	days	AT_c	25,550	–	–	–	25,550	25,550	–	–	–
Averaging Period, noncancer	months/yr	AP_{nc}	12	–	–	–	12	12	–	–	–
Averaging Time, noncancer (a)	days	AT_{nc}	7,300	–	–	–	2,190	10,950	–	–	–

Notes:

chem-spec = Chemical Specific

(a) Averaging Time, noncancer = ED x AP/12 x 365 d/y, except for acute exposures where AP = NA and ATnc = EF x ED.

TABLE 3-6a: Current Central Tendency Exposure Factors and Estimated Media Intakes

			On-Site				Off-Site	
			Routine Worker in Area 1	Trespasser in Area 4A or 4B	Resident in Area 5A		Resident in Area 6	
			Adult	Age 9-18	Child	Adult	Child	Adult
Soil/Sediment Ingestion								
Ingestion Rate	mg-soil/day	IR	50	50	100	50	100	50
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Fraction Ingested	unitless	FI	1	1	1	1	1	1
Exposure Frequency	days/year	EF	219	12	350	350	52	2
Exposure Duration	years	ED	5	2	6	9	6	9
Body Weight	kg	BW	70	50	15	70	15	70
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	3	12	12	9	NA
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	183	2,190	3,285	1,643	18
Soil/Sediment Dermal Contact								
Adherence Factor	mg/cm^2-event	AD	0.08	0.08	0.30	0.08	0.30	0.08
Skin Surface Area	cm^2	SA	5,000	3,600	1,800	5,000	1,800	5,000
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Absorption	unitless	ABS	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec
Exposure Frequency	days/year	EF	219	12	350	350	52	2
Exposure Duration	years	ED	5	2	6	9	6	9
Body Weight	kg	BW	70	50	15	70	15	70
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	3	12	12	9	NA
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	183	2,190	3,285	1,643	18
Ambient Air Inhalation								
Exposure Time	hr/hr in day	FC	24/24	2/24	18/24	18/24	18/24	18/24
Exposure Frequency	days/year	EF	219	12	350	350	350	350
Exposure Duration	years	ED	5	2	6	9	6	9
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	12	3	12	12	12	12
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	183	2,190	3,285	2,190	3,285
Intake factor, cancer	unitless		4.3E-02	7.8E-05	6.2E-02	9.2E-02	6.2E-02	9.2E-02
Intake factor, noncancer	unitless		6.0E-01	1.1E-02	7.2E-01	7.2E-01	7.2E-01	7.2E-01
Inhalation During On-site Excavation for Utility Maintenance								
Exposure Time	hr/hr in day	FC	--	--	8/24	8/24	8/24	8/24
Exposure Frequency	days/year	EF	--	--	5	5	5	5
Exposure Duration	years	ED	--	--	6	9	6	9
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	NA	NA	NA	NA
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	30	45	30	45
Incidental Ingestion of Surface Water								
Drinking Rate	L-water/day	DR	0.05	0.05	--	--	--	--
Exposure Frequency	days/year	EF	3	3	--	--	--	--
Exposure Duration	years	ED	5	2	--	--	--	--
Body Weight	kg	BW	70	50	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	25,550	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	3	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	456	183	--	--	--	--
Dermal Contact with Surface Water								
Conversion Factor	L/cm^3	CF	1E-03	1E-03	--	--	--	--
Skin Surface Area	cm^2	SA	5,000	3,600	--	--	--	--
Permeability	cm/hour	K_p	chem-spec	chem-spec	--	--	--	--
Exposure Time	hours/day	ET	1	1	--	--	--	--
Exposure Frequency	days/year	EF	3	3	--	--	--	--
Exposure Duration	years	ED	5	2	--	--	--	--
Body Weight	kg	BW	70	50	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	25,550	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	3	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	456	183	--	--	--	--
Incidental Ingestion of Ground Water - Outdoor								
Drinking Rate	L-water/day	DR	--	--	0.05	0.05	--	--
Exposure Frequency	days/year	EF	--	--	9	40	--	--
Exposure Duration	years	ED	--	--	6	9	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	3	5	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	548	1,369	--	--
Dermal Contact with Ground Water - Outdoor								
Conversion Factor	L/cm^3	CF	--	--	1E-03	1E-03	--	--
Skin Surface Area	cm^2	SA	--	--	7,200	5,000	--	--
Permeability	cm/hour	K_p	--	--	chem-spec	chem-spec	--	--
Exposure Time	hours/day	ET	--	--	1	1	--	--
Exposure Frequency	days/year	EF	--	--	9	40	--	--
Exposure Duration	years	ED	--	--	6	9	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	3	5	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	548	1,369	--	--
Drinking Water Consumption								
Drinking Rate	L-water/day	DR	--	--	0.5	1.4	--	--
Exposure Frequency	days/year	EF	--	--	350	350	--	--
Exposure Duration	years	ED	--	--	6	9	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	3,285	--	--
Bathing/Showering Dermal Contact								
Conversion Factor	L/cm^3	CF	--	--	1E-03	1E-03	--	--
Skin Surface Area	cm^2	SA	--	--	7,200	20,000	--	--
Permeability	cm/hour	K_p	--	--	chem-spec	chem-spec	--	--
Exposure Time	hours/day	ET	--	--	0.33	0.17	--	--
Exposure Frequency	days/year	EF	--	--	150	350	--	--
Exposure Duration	years	ED	--	--	6	9	--	--
Body Weight	kg	BW	--	--	15	70	--	--
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	3,285	--	--
Inhalation of Emissions from Indoor Water Use								
Exposure Time	hr/day	ET	--	--	0.33	0.17	--	--
Exposure Frequency	days/year	EF	--	--	350	350	--	--
Exposure Duration	years	ED	--	--	6	9	--	--
Conversion Factor	hr/day	CF			24	24		
Averaging Time, cancer	days	AT_c	--	--	25,550	25,550	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	12	12	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	2,190	3,285	--	--
Notes:								
chem-spec = Chemical Specific								
(a) Averaging Time, noncancer = ED x AP/12 x 365 d/y, except for acute exposures where AP = NA and ATnc = EF x ED.								

TABLE 3-6b: Future Central Tendency Exposure Factors and Estimated Media Intakes

			On-Site				Off-Site				
			Worker during Routine Activities in Areas 1,2,3,4B	Worker during Excavation for Utility Maintenance Areas 1,2,3,4B	Construction Worker Areas 2 & 3	Trespasser All On-Site Areas	Resident in Area 5A		Resident in Area 6		Worker during Excavation for Utility Maintenance in Area 5B
			Adult	Adult	Adult	Age 9-18	Child	Adult	Child	Adult	Adult
Soil/Sediment Ingestion											
Ingestion Rate	mg-soil/day	IR	50	100	100	50	100	50	100	50	--
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	--
Fraction Ingested	unitless	FI	1	1	1	1	1	1	1	1	--
Exposure Frequency	days/year	EF	219	5	65	12	350	350	52	2	--
Exposure Duration	years	ED	5	5	1	2	6	9	6	9	--
Body Weight	kg	BW	70	70	70	50	15	70	15	70	--
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550	25,550	25,550	--
Averaging Period, noncancer	months/yr	AP_{nc}	12	NA	3	3	12	12	9	NA	--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	25	91	183	2,190	3,285	1,643	18	--
Soil/Sediment Dermal Contact											
Adherence Factor	mg/cm^2-event	AD	0.08	0.08	0.08	0.08	0.30	0.08	0.30	0.08	--
Skin Surface Area	cm^2	SA	5,000	5,000	5,000	3,600	1,800	5,000	1,800	5,000	--
Conversion Factor	kg/mg	CF	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	--
Absorption	unitless	ABS	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	chem-spec	--
Exposure Frequency	days/year	EF	219	5	65	12	350	350	52	2	--
Exposure Duration	years	ED	5	5	1	2	6	9	6	9	--
Body Weight	kg	BW	70	70	70	50	15	70	15	70	--
Averaging Time, cancer	days	AT_c	25,550	25,550	25,550	25,550	25,550	25,550	25,550	25,550	--
Averaging Period, noncancer	months/yr	AP_{nc}	12	NA	3	3	12	12	9	6	--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	25	91	183	2,190	3,285	1,643	1,643	--
Ambient Air Inhalation											
Exposure Time	hr/hr in day	FC	24/24	--	--	2/24	18/24	18/24	18/24	18/24	--
Exposure Frequency	days/year	EF	219	--	--	12	350	350	350	350	--
Exposure Duration	years	ED	5	--	--	2	6	9	6	9	--
Averaging Time, cancer	days	AT_c	25,550	--	--	25,550	25,550	25,550	25,550	25,550	--
Averaging Period, noncancer	months/yr	AP_{nc}	12	--	--	3	12	12	12	12	--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	--	--	183	2,190	3,285	2,190	3,285	--
Inhalation During On-site Excavation for Utility Maintenance											
Exposure Time	hr/hr in day	FC	--	24/24	--	--	8/24	8/24	8/24	8/24	24/24
Exposure Frequency	days/year	EF	--	5	--	--	5	5	5	5	5
Exposure Duration	years	ED	--	5	--	--	6	9	6	9	5
Averaging Time, cancer	days	AT_c	--	25,550	--	--	25,550	25,550	25,550	25,550	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	--	NA	--	--	NA	NA	NA	NA	NA
Averaging Time, noncancer (a)	days	AT_{nc}	--	25	--	--	30	45	30	45	25
Inhalation During On-site Construction Activities											
Exposure Time	hr/hr in day	FC	--	--	24/24	--	8/24	8/24	8/24	8/24	--
Exposure Frequency	days/year	EF	--	--	65	--	65	65	65	65	--
Exposure Duration	years	ED	--	--	1	--	1	1	1	1	--
Averaging Time, cancer	days	AT_c	--	--	25,550	--	25,550	25,550	25,550	25,550	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	3	--	3	3	3	3	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	91	--	91	91	91	91	--
Incidental Ingestion of Surface Water											
Drinking Rate	L-water/day	DR	0.05	--	--	0.05	--	--	--	--	--
Exposure Frequency	days/year	EF	3	--	--	3	--	--	--	--	--
Exposure Duration	years	ED	5	--	--	2	--	--	--	--	--
Body Weight	kg	BW	70	--	--	50	--	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	--	--	25,550	--	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	--	--	3	--	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	456	--	--	183	--	--	--	--	--
Dermal Contact with Surface Water											
Conversion Factor	L/cm^3	CF	1E-03	--	--	1E-03	--	--	--	--	--
Skin Surface Area	cm^2	SA	5,000	--	--	3,600	--	--	--	--	--
Permeability	cm/hour	K_p	chem-spec	--	--	chem-spec	--	--	--	--	--
Exposure Time	hours/day	ET	1	--	--	1	--	--	--	--	--
Exposure Frequency	days/year	EF	3	--	--	3	--	--	--	--	--
Exposure Duration	years	ED	5	--	--	2	--	--	--	--	--
Body Weight	kg	BW	70	--	--	50	--	--	--	--	--
Averaging Time, cancer	days	AT_c	25,550	--	--	25,550	--	--	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	3	--	--	3	--	--	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	456	--	--	183	--	--	--	--	--
Incidental Ingestion of Ground Water - Outdoor											
Drinking Rate	L-water/day	DR	0.05	--	--	--	0.05	0.05	--	--	--
Exposure Frequency	days/year	EF	40	--	--	--	9	40	--	--	--
Exposure Duration	years	ED	5	--	--	--	6	9	--	--	--
Body Weight	kg	BW	70	--	--	--	15	70	--	--	--
Averaging Time, cancer	days	AT_c	25,550	--	--	--	25,550	25,550	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	5	--	--	--	3	5	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	760	--	--	--	548	1,369	--	--	--
Dermal Contact with Ground Water - Outdoor											
Conversion Factor	L/cm^3	CF	1E-03	1E-03	--	--	1E-03	1E-03	--	--	1E-03
Skin Surface Area	cm^2	SA	5,000	5,000	--	--	7,200	5,000	--	--	5,000
Permeability	cm/hour	K_p	chem-spec	chem-spec	--	--	chem-spec	chem-spec	--	--	chem-spec
Exposure Time	hours/day	ET	1	8	--	--	1	1	--	--	8
Exposure Frequency	days/year	EF	40	5	--	--	9	40	--	--	5
Exposure Duration	years	ED	5	5	--	--	6	9	--	--	5
Body Weight	kg	BW	70	70	--	--	15	70	--	--	70
Averaging Time, cancer	days	AT_c	25,550	25,550	--	--	25,550	25,550	--	--	25,550
Averaging Period, noncancer	months/yr	AP_{nc}	5	NA	--	--	3	5	--	--	NA
Averaging Time, noncancer (a)	days	AT_{nc}	760	25	--	--	548	1,369	--	--	25
Drinking Water Consumption											
Drinking Rate	L-water/day	DR	--	--	--	--	0.5	1.4	--	--	--
Exposure Frequency	days/year	EF	--	--	--	--	350	350	--	--	--
Exposure Duration	years	ED	--	--	--	--	6	9	--	--	--
Body Weight	kg	BW	--	--	--	--	15	70	--	--	--
Averaging Time, cancer	days	AT_c	--	--	--	--	25,550	25,550	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	--	--	--	--	12	12	--	--	--
Averaging Time, noncancer (a)	days	AT_{nc}	--	--	--	--	2,190	3,285	--	--	--
Bathing/Showering Dermal Contact									--	--	
Conversion Factor	L/cm^3	CF	1E-03	--	--	--	1E-03	1E-03	--	--	--
Skin Surface Area	cm^2	SA	20,000	--	--	--	7,200	20,000	--	--	--
Permeability	cm/hour	K_p	chem-spec	--	--	--	chem-spec	chem-spec	--	--	--
Exposure Time	hours/day	ET	0.17	--	--	--	0.33	0.17	--	--	--
Exposure Frequency	days/year	EF	219	--	--	--	150	350	--	--	--
Exposure Duration	years	ED	5	--	--	--	6	9	--	--	--
Body Weight	kg	BW	70	--	--	--	15	70	--	--	--
Averaging Time, cancer	days	AT_c	25,550	--	--	--	25,550	25,550	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	12				12	12			--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	--	--	--	2,190	3,285	--	--	--
Inhalation of Emissions from Indoor Water Use											
Exposure Time	hr/day	ET	0.25	--	--	--	0.33	0.17	--	--	--
Exposure Frequency	days/year	EF	219	--	--	--	350	350	--	--	--
Exposure Duration	years	ED	5	--	--	--	6	9	--	--	--
Conversion Factor	hr/day	CF	24				24	24			--
Averaging Time, cancer	days	AT_c	25,550	--	--	--	25,550	25,550	--	--	--
Averaging Period, noncancer	months/yr	AP_{nc}	12				12	12			--
Averaging Time, noncancer (a)	days	AT_{nc}	1,825	--	--	--	2,190	3,285	--	--	--

Notes:

chem-spec = Chemical Specific

(a) Averaging Time, noncancer = ED x AP/12 x 365 d/y, except for acute exposures where AP = NA and ATnc = EF x ED.

TAB

Toxicity Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	WT	CSFO (MG/KG/D)-1 VALUE	R	N	URFI (UG/M3)-1 VALUE	R	N	CRFDO MG/KG/D VALUE	R	N	CRFC MG/M3 VALUE	R	N	SRFDO MG/KG/D VALUE	R	N	SRFC MG/M3 VALUE	R	N	KP CM/HR VALUE	R	N
VOC	1,1,1-Trichloroethane	D							2.00E-01	68	54	1.00E+00	66		2.00E+00	67					1.70E-02	48	
VOC	1,1,2,2-Tetrachloroethane	C	2.00E-01	1		5.80E-05	1														9.00E-03	48	
VOC	1,1,2-Trichloroethane	C	5.70E-02	1		1.60E-05	1		4.00E-03	1					4.00E-02	2					8.40E-03	48	
VOC	1,1-Dichloroethane	C							1.00E-01	2		5.00E-01	2	3	1.00E+00	2		5.00E+00	2	3	8.90E-03	48	
VOC	1,1-Dichloroethene	C	6.00E-01	1		5.00E-05	1		9.00E-03	1					9.00E-03	2	2				1.60E-02	48	
VOC	1,2,4-Trimethylbenzene								5.00E-02	56													
VOC	1,2-Dichloroethane	B2	9.10E-02	1		2.60E-05	1														5.30E-03	48	
VOC	1,2-Dichloroethene (total)								9.00E-03	2					9.00E-03	2					1.00E-02	48	
VOC	1,2-Dichloropropane	B2	6.80E-02	2								4.00E-03	1					1.30E-02	2		1.00E-02	48	
VOC	1,3,5-Trimethylbenzene								5.00E-02	56													
VOC	2-Butanone	D							6.00E-01	1		1.00E+00	1		2.00E+00	2		1.00E+00	2	2	1.10E-03	48	
VOC	2-Hexanone								4.00E-02	40											4.45E-03		48
VOC	4-Methyl-2-pentanone								8.00E-02	2		8.00E-02	2	3	8.00E-01	2		8.00E-01	2	3	3.30E-03	48	
VOC	Acetone	D							1.00E-01	1					1.00E+00	2					5.69E-04		48
VOC	Benzene	A	2.90E-02	1		8.30E-06	1					6.00E-03	32					6.00E-02	23		2.10E-02	48	
VOC	Bromodichloromethane	B2	6.20E-02	1					2.00E-02	1					2.00E-02	2	2				5.80E-03	48	
VOC	Carbon Disulfide								1.00E-01	1		7.00E-01	1		1.00E-01	2	2	7.00E-01	2	2	2.40E-02	48	
VOC	Carbon Tetrachloride	B2	1.30E-01	1		1.50E-05	1		7.00E-04	1		2.00E-03	33		2.00E-03	17		6.00E-02	18		2.20E-02	48	
VOC	Chlorobenzene	D							2.00E-02	1		2.00E-02	2	3				2.00E-01	65		4.10E-02	48	
VOC	Chloroethane								4.00E-01	56		1.00E+01	1					1.00E+01	2	2	8.00E-03	48	
VOC	Chloroform	B2	6.10E-03	1		2.30E-05	1		1.00E-02	1					1.00E-02	2	2	4.00E-02	19		8.90E-03	48	
VOC	Chloromethane	C	1.30E-02	2		1.80E-06	2		4.00E-03	34								9.00E+00	20		4.20E-03	48	
VOC	cis-1,2-Dichloroethene	D							1.00E-02	2					1.00E-01	2					1.00E-02	48	
VOC	Ethyl Benzene	D							1.00E-01	1		1.00E+00	1		1.00E-01	22		1.00E+00	28	2	7.40E-02	48	
VOC	m,p-xylene	D							2.00E+00		38,42				4.00E-01		38,43				8.85E-02		48
VOC	Methylene Chloride	B2	7.50E-03	1		4.70E-07	1		6.00E-02	1		3.00E+00	2		6.00E-02	2	2	3.00E+00	2		4.50E-03	48	
VOC	ortho-xylene	D							2.00E+00	2					4.00E-01		38,43				8.85E-02		48
VOC	p-Cymene																						
VOC	Styrene								2.00E-01	1		1.00E+00	1					3.00E+00	2		5.50E-02	48	
VOC	Tetrachloroethene	C-B2	5.20E-02	51		5.80E-07	51		1.00E-02	1					1.00E-01	2					4.80E-02	48	
VOC	Tetrahydrofuran																						
VOC	Toluene	D							2.00E-01	1		4.00E-01	1		2.00E+00	2		1.00E+00	27		4.50E-02	48	
VOC	trans-1,2-Dichloroethene								2.00E-02	1					2.00E-01	2					1.07E-03		48
VOC	Trichloroethene	C-B2	1.10E-02	49		1.70E-06	49		6.00E-03	46											1.60E-02	48	
VOC	Vinyl Chloride	A	1.90E+00	2		8.40E-05	2														7.30E-03	48	
VOC	Xylenes (total)	D							2.00E+00	1					4.00E-01	64					8.85E-02		48
TIC	Acetaldehyde	B2				2.20E-06	1					9.00E-03	1								7.20E-04	48	
TIC	Acetophenone	D							1.00E-01	1					1.00E+00	1							
TIC	Azobenzene	B2	1.10E-01	1		3.10E-05	1																
TIC	Butanol, 1-	D							1.00E-01	1					1.00E+00	1					2.00E-03	48	

Toxicity Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	WT	CSFO (MG/KG/D)-1 VALUE	R	N	URFI (UG/M3)-1 VALUE	R	N	CRFDO MG/KG/D VALUE	R	N	CRFC MG/M3 VALUE	R	N	SRFDO MG/KG/D VALUE	R	N	SRFC MG/M3 VALUE	R	N	KP CM/HR VALUE	R	N
TIC	Caprolactam								5.00E-01	1					5.00E-01	2							
TIC	Chlorodifluoromethane											5.00E+01	1										
TIC	Cyclohexanone								5.00E+00	1													
TIC	Diethyl ether								2.00E-01	1					2.00E+00	2					2.00E-02	48	
TIC	Dioxane, 1,4-	B2	1.10E-02	1																	4.00E-04	48	
TIC	Ethanol, 2-(2-butoxyethoxy)-											2.00E-02	2					2.00E-01	2		4.40E-05	48	
TIC	Hexane, n-								6.00E-02	2		2.00E-01	1		6.00E-01	2		2.00E-01	2				
TIC	Phenol, 4,4'-(1-methylethyli								5.00E-02	1					6.00E-01	1							
TIC	Phthalic anhydride								2.00E+00	1		1.20E-01	2		2.00E+00	2		1.20E-01	2				
SVOC	1,2,4-Trichlorobenzene	D							1.00E-02	1		2.00E-01	2		1.00E-02	2		2.00E+00	2		1.00E-01	48	
SVOC	1,2-Dichlorobenzene	D							9.00E-02	1		2.00E-01	2	3				2.00E+00	2	3	6.10E-02	48	
SVOC	1,3-Dichlorobenzene	D																			8.70E-02	48	
SVOC	1,4-Dichlorobenzene	C	2.40E-02	2								8.00E-01	1					2.50E+00	2		6.20E-02	48	
SVOC	2,2'-oxybis(1-Chloropropane)	C	7.00E-02	2		1.00E-05	2														5.34E-03		48
SVOC	2,4,5-Trichlorophenol								1.00E-01	1					1.00E+00	2					5.21E-02		48
SVOC	2,4,6-Trichlorophenol	B2	1.10E-02	1		3.10E-06	1														5.00E-02	48	
SVOC	2,4-Dichlorophenol								3.00E-03	1					3.00E-03	2	2				2.30E-02	48	
SVOC	2,4-Dimethylphenol								2.00E-02	1					2.00E-01	2					1.50E-02	48	
SVOC	2,4-Dinitrotoluene	B2	6.80E-01	1	28				2.00E-03	1					2.00E-03	2	2				3.80E-03	48	
SVOC	2,6-Dinitrotoluene	B2	6.80E-01	1	28				1.00E-03	2					1.00E-02	2					2.50E-03	48	
SVOC	2-Chloronaphthalene								8.00E-02	1											1.63E-01		48
SVOC	2-Chlorophenol								5.00E-03	1					5.00E-02	2					1.10E-02	48	
SVOC	2-Methylnaphthalene	D																			1.42E-01		48
SVOC	2-Methylphenol	C							5.00E-02	1					5.00E-01	2					1.00E-02	48	
SVOC	2-Nitroaniline											2.00E-04	2					2.00E-03	2		5.45E-03		48
SVOC	3,3'-Dichlorobenzidine	B2	4.50E-01	1																	1.70E-02	48	
SVOC	4-Bromophenyl-phenylether	D																			6.30E-02		48
SVOC	4-Chloro-3-methylphenol														2.00E+00	2					4.09E-02		48
SVOC	4-Chlorophenyl-phenyl ether																				8.48E-02		48
SVOC	4-Methylphenol	C							5.00E-03	2					5.00E-03	2	2				1.00E-02	48	
SVOC	4-Nitrophenol																				6.10E-03	48	
SVOC	Acenaphthene								6.00E-02	1					6.00E-01	2					1.51E-01		48
SVOC	Acenaphthylene	D																			9.52E-02		48
SVOC	Anthracene	D							3.00E-01	1					3.00E+00	2					2.25E-01		48
SVOC	Benzo(a)anthracene	B2	7.30E-01	10	5																8.10E-01	48	
SVOC	Benzo(a)pyrene	B2	7.30E+00	1																	1.00E+00	48	53
SVOC	Benzo(b)fluoranthene	B2	7.30E-01	10	5																1.00E+00	48	53
SVOC	Benzo(g,h,i)perylene	D																			1.00E+00		48,53
SVOC	Benzo(k)fluoranthene	B2	7.30E-02	10	5																1.00E+00		48,53
SVOC	Benzoic Acid	D							4.00E+00	1					4.00E+00	2	2				7.30E-03	48	

Toxicity Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	WT	CSFO (MG/KG/D)-1 VALUE	R	N	URFI (UG/M3)-1 VALUE	R	N	CRFDO MG/KG/D VALUE	R	N	CRFC MG/M3 VALUE	R	N	SRFDO MG/KG/D VALUE	R	N	SRFC MG/M3 VALUE	R	N	KP CM/HR VALUE	R	N
SVOC	Benzyl Alcohol								3.00E-01	2					1.00E+00	2					6.00E-03	48	48
SVOC	bis(2-Chloroethoxy)methane	D																			1.32E-03		48
SVOC	bis(2-Chloroethyl) ether	B2	1.10E+00	1		3.30E-04	1														2.10E-03	48	
SVOC	bis(2-Ethylhexyl)phthalate	B2	1.40E-02	1					2.00E-02	1								2.00E-01	16		3.30E-02	48	
SVOC	Butylbenzylphthalate	C							2.00E-01	1					2.00E+00	2					5.86E-02		48
SVOC	Carbazole	B2	2.00E-02	2																			
SVOC	Chrysene	B2	7.30E-03	10	5																8.10E-01	48	
SVOC	Dibenz(a,h)anthracene	B2	7.30E+00	10	5																1.00E+00		48,53
SVOC	Dibenzofuran	D									50										1.51E-01		48
SVOC	Diethylphthalate	D							8.00E-01	1					8.00E+00	2					4.80E-03	48	
SVOC	Dimethylphthalate	D																			1.60E-03	48	
SVOC	Di-n-butylphthalate	D							1.00E-01	1					1.00E+00	2					3.30E-02	48	
SVOC	Di-n-octylphthalate								2.00E-02	2					2.00E-02	2					1.00E+00		48,53
SVOC	Fluoranthene	D							4.00E-02	1					4.00E-01	2					3.60E-01	48	
SVOC	Fluorene	D							4.00E-02	1					4.00E-01	2					1.77E-01		48
SVOC	Hexachlorobenzene	B2	1.60E+00	1		4.60E-04	1		8.00E-04	1											2.10E-01	48	
SVOC	Hexachlorobutadiene	C	7.80E-02	1		2.20E-05	1		2.00E-04	2					7.00E-04	26					1.20E-01	48	
SVOC	Indeno(1,2,3-cd)pyrene	B2	7.30E-01	10	5																1.90E+00	48	
SVOC	Isophorone	C	9.50E-04	1					2.00E-01	1					2.00E+00	2					4.40E-03	48	
SVOC	Naphthalene	D							4.00E-02	43					4.00E-02	43	2				6.90E-02	48	
SVOC	N-Nitroso-di-n-propylamine	B2	7.00E+00	1																	2.80E-03	48	
SVOC	N-Nitrosodiphenylamine	B2	4.90E-03	1																	2.00E-02	48	
SVOC	Pentachlorophenol	B2	1.20E-01	1					3.00E-02	1					3.00E-02	2					6.50E-01	48	
SVOC	Phenanthrene	D																			2.70E-01	48	
SVOC	Phenol	D							6.00E-01	1					6.00E-01	2	2				5.50E-03	48	
SVOC	Pyrene	D							3.00E-02	1					3.00E-01	2					3.24E-01		48
P/PCB	4,4'-DDD	B2	2.40E-01	1																	2.80E-01	48	
P/PCB	4,4'-DDE	B2	3.40E-01	1																	2.40E-01	48	
P/PCB	4,4'-DDT	B2	3.40E-01	1		9.70E-05	1		5.00E-04	1					5.00E-04	2	2				4.30E-01	48	
P/PCB	Aldrin	B2	1.70E+01	1		4.90E-03	1		3.00E-05	1					3.00E-05	2	2				1.60E-03	48	
P/PCB	alpha-BHC	B2	6.30E+00	1		1.80E-03	1														1.88E-02		48
P/PCB	alpha-Chlordane	B2	3.50E-01	1	12	1.00E-04	1	12	5.00E-04	1	12	7.00E-04	1	12							4.60E-02	48	8
P/PCB	Aroclor-1242 (High)	B2	2.00E+00	1	25, 32	5.70E-04	1	25, 32													7.10E-01	48	
P/PCB	Aroclor-1242 (Low)	B2	4.00E-01	1	25, 33	1.00E-04	1	25, 33															
P/PCB	Aroclor-1248 (High)	B2	2.00E+00	1	25, 32	5.70E-04	1	25, 32													7.10E-01	48	
P/PCB	Aroclor-1248 (Low)	B2	4.00E-01	1	25, 33	1.00E-04	1	25, 33															
P/PCB	Aroclor-1254 (High)	B2	2.00E+00	1	25, 32	5.70E-04	1	25, 32	2.00E-05	1					5.00E-05	2					7.10E-01	48	
P/PCB	Aroclor-1254 (Low)	B2	4.00E-01	1	25, 33	1.00E-04	1	25, 33															
P/PCB	Aroclor-1260 (High)	B2	2.00E+00	1	25, 32	5.70E-04	1	25, 32													7.10E-01	48	
P/PCB	Aroclor-1260 (Low)	B2	4.00E-01	1	25, 33	1.00E-04	1	25, 33															

Toxicity Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	WT	CSFO (MG/KG/D)-1 VALUE	R	N	URFI (UG/M3)-1 VALUE	R	N	CRFDO MG/KG/D VALUE	R	N	CRFC MG/M3 VALUE	R	N	SRFDO MG/KG/D VALUE	R	N	SRFC MG/M3 VALUE	R	N	KP CM/HR VALUE	R	N
P/PCB	beta-BHC	C	1.80E+00	1		5.30E-04	1														1.88E-02		48
P/PCB	Dieldrin	B2	1.60E+01	1		4.60E-03	1		5.00E-05	1					5.00E-05	2	2				1.60E-02	48	
P/PCB	Endosulfan I								6.00E-03	1	13				6.00E-03	2	13				2.08E-03		48
P/PCB	Endosulfan sulfate																						
P/PCB	Endrin	D							3.00E-04	1					3.00E-04	2	2				1.60E-02	48	
P/PCB	Endrin aldehyde	D																					
P/PCB	Endrin ketone	D																					
P/PCB	gamma-BHC	B2-C	1.30E+00	2					3.00E-04	1					3.00E-03	2					1.40E-02	48	
P/PCB	gamma-Chlordane	B2	3.50E-01	1	12	1.00E-04	1	12	5.00E-04	1	12	7.00E-04	1	12							4.60E-02	48	8
P/PCB	Heptachlor	B2	4.50E+00	1		1.30E-03	1		5.00E-04	1					5.00E-04	2	2				1.10E-02	48	
P/PCB	Heptachlor epoxide	B2	9.10E+00	1		2.60E-03	1		1.30E-05	1					1.30E-05	2	2				6.64E-04		48
P/PCB	Methoxychlor	D							5.00E-03	1					5.00E-03	2	2				3.12E-02		48
INORG	Antimony								4.00E-04	1					4.00E-04	2					1.00E-03	48	
INORG	Arsenic	A	1.50E+00	1		4.30E-03	1		3.00E-04	1					3.00E-04	2	2				1.00E-03	48	
INORG	Barium	D							7.00E-02	1			1	14	7.00E-02	2	2				1.00E-03	48	
INORG	Beryllium	B1				2.40E-03	1		2.00E-03	1		2.00E-05	1								1.00E-03	48	
INORG	Cadmium	B1				1.80E-03	1		1.00E-03	1	39										1.00E-03	48	
INORG	Cadmium (water pathway)	B1							5.00E-04	1	40												
INORG	Chromium III								1.00E+00	1					1.00E+00	2					1.00E-03	48	
INORG	Chromium VI	A				1.20E-02	1		5.00E-03	1					2.00E-02	2					1.00E-03	48	
INORG	Cobalt								6.00E-02	37		2.00E-05	36								1.00E-03	48	
INORG	Copper	D							4.00E-02	50	49										1.00E-03	48	
INORG	Cyanide (total)	D							2.00E-02	1					2.00E-02	2	2				1.00E-03	48	
INORG	Lead	B2																			4.00E-06	48	
INORG	Manganese	D							1.40E-01	1		5.00E-05	1								1.00E-03	48	
INORG	Mercury	D										3.00E-04	1					3.00E-04	2		1.00E-03	48	
INORG	Nickel	A				2.40E-04	1		2.00E-02	1					2.00E-02	2	2				1.00E-04	48	
INORG	Selenium	D							5.00E-03	1					5.00E-03	2	2				1.00E-03	48	
INORG	Silver	D							5.00E-03	1					5.00E-03	2	2				6.00E-04	48	
INORG	Thallium																				1.00E-03	48	
INORG	Vanadium								7.00E-03	2					7.00E-03	2					1.00E-03	48	
INORG	Zinc	D							3.00E-01	1					3.00E-01	2	2				6.00E-04	48	

TABLE 4-1 (continued)
Notes forToxicity Values
ACS NPL Site, Griffith, IN

NOTE	COMMENT
2	USEPA adopted chronic value as subchronic value.
3	HEAST Alternate Method.
5	Based on analogy to Benzo(a)pyrene [CASRN 50-32-8] using USEPA relative potency described in reference 10.
8	Based on Chlordane [CASRN 57-74-9].
12	ENVIRON used Chlordane [CASRN 57-74-9] value from IRIS (reference 1) or HEAST (reference 2) as a surrogate.
13	ENVIRON used Endosulfan [CASRN 115-29-7] value from IRIS (reference 1) or HEAST (reference 2) as a surrogate.
14	Data inadequate for quantitative risk assessment, according to IRIS.
25	USEPA used PCBs (total) [CASRN 1336-36-3] value as a surrogate.
28	USEPA used 2,4-,2,6-Dinitrotolunene mixture value from IRIS (reference 1) as a surrogate.
32	High risk & persistence tier.Use for: food chain exposure;sediment/soil ingestion;dust/aerosol inhalation;dermal exposure, if an absorption factor has been applied;presence of dioxin-like,tumor-promoting/persistent congeners;all early life exposures.
33	Low risk & persistence tier. Criteria for use: ingestion of water-soluble congeners;inhalation of evaporated congeners; dermal exposure, if no absorption factor has been applied.
38	ENVIRON used Xylenes (total) [CASRN 1330-20-7] value as a surrogate.
39	Based on NOAEL for food. Use for food, soil, and sediment ingestion.
40	Based on NOAEL for water. Use for water ingestion.
42	Surrogate value from Reference 2.
43	Surrogate value from Reference 64.
44	ENVIRON derived CRFC from CRDFI value presented in Reference 56, using standard USEPA methodology presented in HEAST.
48	ENVIRON used Equation (5.8) from Reference 43 to calculate the Kp.
49	ENVIRON derived CRFDO from adverse health effect level value presented in the indicated reference.
50	Personal communication with NCEA; indicated the supporting paper had been withdrawn.
53	ENVIRON limited Kp values greater than 1 to 1, based on USEPA guidance in reference 43.
54	EPA derived this value by the PBPK approach rather than traditional approach.

TABLE 4-1 (continued)
References forToxicity Values
ACS NPL Site, Griffith, IN

REF	REFERENCE
1	USEPA. Integrated Risk Information System (IRIS). On-line database.
2	USEPA. 1997. Health Effects Assessment Summary Tables (HEAST). FY-1997 Update. EPA 540/R-97-036. July.
10	USEPA. 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. EPA/600/2-93/089. July.
16	USEPA. NCEA. 1993. Provisional Subchronic RfC for Di(2-ethylhexyl)phthalate [CASRN 117-81-7]. August 25.
17	USEPA. NCEA. 1993. Derivation of a Provisional Subchronic Oral RfD for Carbon Tetrachloride [CASRN 56-23-5]. December 8.
18	USEPA. NCEA 1993. Risk Assessment Issue paper for: Derivation of a Provisional Subchronic RfC for Carbon Tetrachloride [CASRN 56-23-5]. August 25.
19	USEPA. NCEA. 1993. Risk Assessment Issue paper for: Derivation of a Provisional Subchronic Inhalation RfC for Chloroform [CASRN 67-66-3]. August 25.
20	USEPA. NCEA. 1993. Risk Assessment Issue paper for: Derivation of a Provisional Subchronic Inhalation RfC for Chloromethane [CASRN 74-87-3]. October 26.
22	USEPA. NCEA. 1993. Derivation of a Provisional Subchronic Oral RfD for Ethylbenzene [CASRN 100-41-4]. December 3.
23	USEPA. NCEA. 1994. Derivation of a Provisional Subchronic Inhalation RfC for Benzene [CASRN 71-43-2] March 14.
26	USEPA. NCEA. 1994. Derivation of a Provisional Subchronic Oral RfD for Hexachlorobutadiene [CASRN 87-68-3]. January 24.
27	USEPA. NCEA. 1994. Derivation of a Provisional Subchronic Inhalation RfC for Toluene [CASRN 108-88-3]. May 25.
28	USEPA. NCEA. 1994. Subchronic Toxicity Information for Benzene, Bromomethane, Ethylbenzene, Hexachlorobutadiene, Elemental Mercury Vapor and Toluene. Letter to K. Edelmann. June 10.
32	USEPA. NCEA. 1994. Risk Assessment Issue paper for: Derivation of a Provisional Chronic Inhalation RfC for Benzene [CASRN 71-43-2]. March 23.
33	USEPA. NCEA. 1994. Risk Assessment Issue paper for: Derivation of a Provisional Inhalation RfC for Carbon Tetrachloride [CASRN 56-23-5]. April 11.
34	USEPA. NCEA. 1994. Risk Assessment Issue paper for: Derivation of a Provisional RfD for Chloromethane [CASRN 74-87-3]. March 21.
36	USEPA. NCEA. 1994. Risk Assessment Issue paper for: Derivation of a Provisional RfC for Cobalt [CASRN 7440-48-4]. August 4.
37	USEPA. ECAO (now NCEA). 1992. Oral Toxicity Assessment for Cobalt. March 12.
40	USEPA. NCEA. 1993. Risk Assessment Issue paper for: Derivation of a Provisional RfD for 2-Hexanone (Methyl-n-butyl ketone) [CASRN 591-78-6]. June 24.
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TABLE 4-1 (continued)
References forToxicity Values
ACS NPL Site, Griffith, IN

REF	REFERENCE
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66	USEPA. NCEA. 1996. Risk Assessment Issue Paper for: Derivation of a Chronic RfC for 1,1,1-Trichloroethane [CASRN 71-55-6]. August 9.
67	USEPA. NCEA. 1996. Risk Assessment Issue Paper for a Subchronic RfD for 1,1,1-Trichloroethane [CASRN 71-55-6]. August 9.
68	USEPA. NCEA. 1996. Risk Assessment Issue Paper for: Derivation of a Chronic RfD for 1,1,1-Trichloroethane [CASRN 71-55-6]. August 9.

TABLE 5-1a
Central Tendency Cumulative Cancer Risks and Hazard Index Estimates for Current Potential Exposures
ACS NPL Site, Griffith, Indiana

Area	Receptor	Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Excavation	Incidental Ingestion of Surface Water	Dermal Contact with Surface Water	Incidental Ingestion of Ground Water - Outdoor	Dermal Contact with Ground Water - Outdoor	Ingestion of Drinking Water	Dermal Contact with Drinking Water	Inhalation of Vapors from Drinking Water	Total
						Cancer Risk							
1	Routine Worker	4.E-07	3.E-07	3.E-06	NA	1.E-10	1.E-08	NA	NA	NA	NA	NA	4E-06
4A	Trespasser	6.E-08	3.E-08	7.E-08	NA	5.E-09	5.E-09	NA	NA	NA	NA	NA	2E-07
4B	Trespasser	4.E-08	2.E-08	4.E-09	NA	6.E-08	3.E-08	NA	NA	NA	NA	NA	2E-07
5A	Resident, Adult	7.E-07	3.E-07	4.E-06	2.E-09	NA	NA	6.E-08	6.E-09	1.E-05	3.E-08	0.E+00 (a)	2E-05
5A	Resident, Child	4.E-06	1.E-06	3.E-06	1.E-09	NA	NA	4.E-08	6.E-09	2.E-05	3.E-08	0.E+00 (a)	2E-05
6	Resident, Adult	4.E-08	2.E-08	4.E-06	1.E-09	NA	NA	NA	NA	NA	NA	NA	4E-06
6	Resident, Child	6.E-06	2.E-06	3.E-06	7.E-10	NA	NA	NA	NA	NA	NA	NA	1E-05
						Hazard Indices							
1	Routine Worker	6.E-02	6.E-02	6.E-01	NA	9.E-06	3.E-06	NA	NA	NA	NA	NA	7E-01
4A	Trespasser	3.E-02	2.E-02	2.E-02	NA	3.E-04	3.E-05	NA	NA	NA	NA	NA	7E-02
4B	Trespasser	3.E-02	2.E-02	9.E-04	NA	1.E-04	1.E-04	NA	NA	NA	NA	NA	5E-02
5A	Resident, Adult	5.E-02	2.E-02	3.E-01	2.E-03	NA	NA	3.E-03	3.E-04	3.E-01	7.E-04	0.E+00 (a)	6E-01
5A	Resident, Child	5.E-01	1.E-01	3.E-01	2.E-03	NA	NA	5.E-03	7.E-04	5.E-01	1.E-03	0.E+00 (a)	**1E+00 (b)**
6	Resident, Adult	7.E-02	1.E-02	5.E-01	1.E-03	NA	NA	NA	NA	NA	NA	NA	6E-01
6	Resident, Child	1.E-01	2.E-02	5.E-01	1.E-03	NA	NA	NA	NA	NA	NA	NA	6E-01

Notes:

NA = Not applicable to receptor in specified area. See text for discussion.

(a) The cancer risk and hazard index for inhalation of vapors from drinking water is zero because there are no volatile organics in the private well with the highest overall cancer risk (PW-S). The highest cancer risk for inhalation from any private well would be 3e-09 (PW-K).

(b) = The HI in Area 5A is primarily driven by ingestion of antimony, PCBs, and arsenic in soil, and ingestion of arsenic and barium in private well water. These chemicals have different target organs; antimony affects blood chemistry, PCBs affect the immune system, arsenic affects the skin, and barium affects blood pressure. The HI for each of these target organs and effects is less than one.

TABLE 5-1b
High-End Cumulative Cancer Risks and Hazard Index Estimates for Current Potential Exposures
ACS NPL Site, Griffith, Indiana

Area	Receptor	Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Excavation	Incidental Ingestion of Surface Water	Dermal Contact with Surface Water	Incidental Ingestion of Ground Water - Outdoor	Dermal Contact with Ground Water - Outdoor	Ingestion of Drinking Water	Dermal Contact with Drinking Water	Inhalation of Vapors from Drinking Water	Total
						Cancer Risk							
1	Routine Worker	4.E-06	2.E-06	1.E-05	NA	2.E-09	2.E-07	NA	NA	NA	NA	NA	2E-05
4A	Trespasser	3.E-06	9.E-07	3.E-06	NA	2.E-07	3.E-07	NA	NA	NA	NA	NA	7E-06
4B	Trespasser	2.E-06	6.E-07	2.E-07	NA	3.E-06	2.E-06	NA	NA	NA	NA	NA	7E-06
5A	Resident, Adult	4.E-06	1.E-06	2.E-05	1.E-08	NA	NA	2.E-07	2.E-08	7.E-05	4.E-07	0.E+00 (a)	9E-05
5A	Resident, Child	2.E-05	2.E-06	4.E-06	2.E-09	NA	NA	5.E-07	8.E-08	3.E-05	1.E-07	0.E+00 (a)	5E-05
6	Resident, Adult	7.E-07	3.E-07	2.E-05	7.E-09	NA	NA	NA	NA	NA	NA	NA	2E-05
6	Resident, Child	3.E-05	4.E-06	4.E-06	1.E-09	NA	NA	NA	NA	NA	NA	NA	4E-05
						Hazard Indices							
1	Routine Worker	1.E-01	8.E-02	7.E-01	NA	4.E-05	1.E-05	NA	NA	NA	NA	NA	9E-01
4A	Trespasser	1.E-01	5.E-02	6.E-02	NA	1.E-03	1.E-04	NA	NA	NA	NA	NA	2E-01
4B	Trespasser	1.E-01	5.E-02	4.E-03	NA	4.E-04	7.E-04	NA	NA	NA	NA	NA	2E-01
5A	Resident, Adult	1.E-01	2.E-02	3.E-01	2.E-03	NA	NA	3.E-03	3.E-04	4.E-01	3.E-03	0.E+00 (a)	9E-01
5A	Resident, Child	**2.E+00**	1.E-01	3.E-01	2.E-03	NA	NA	6.E-02	1.E-02	1.E+00	4.E-03	0.E+00 (a)	**3E+00 (b)**
6	Resident, Adult	1.E-01	2.E-02	7.E-01	1.E-03	NA	NA	NA	NA	NA	NA	NA	8E-01
6	Resident, Child	7.E-01	3.E-02	7.E-01	1.E-03	NA	NA	NA	NA	NA	NA	NA	**1E+00 (c)**

Notes:

NA = Not applicable to receptor in specified area. See text for discussion.

(a) The cancer risk and hazard index for inhalation of vapors from drinking water is zero because there are no volatile organics in the private well with the highest overall cancer risk (PW-S). The highest cancer risk for inhalation from any private well would be 3e-09 (PW-K).

(b) The HI in Area 5A is primarily driven by ingestion of antimony, PCBs, and arsenic in soil, and ingestion of arsenic and barium in private well water. These chemicals have different target organs; antimony affects blood chemistry, PCBs affect the immune system, arsenic affects the skin, and barium affects blood pressure. The HI for each of these target organs and effects is less than one.

(c) The HI in Area 6 is primarily driven by ingestion of arsenic and antimony in sediment and inhalation of benzene vapor from the Site. These chemicals have different target organs: arsenic affects the skin, and antimony and benzene affect the blood. The HI for each of these target organs is less than one.

TABLE 5-2a
Central Tendency Cumulative Cancer Risks and Hazard Index Estimates for Future Potential Exposures
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Area	Receptor		Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Utility Maintenance	Inhalation of Vapors and Particulates during Construction	Incidental Ingestion of Surface Water - Outdoor	Dermal Contact with Surface Water Outdoor	Incidental Ingestion of Ground Water - Outdoor (a)	Dermal Contact with Ground Water Outdoor (a)	Ingestion of Water - Indoor (a)	Dermal Contact with Water - Indoor (a)	Inhalation of Vapors from Water - Indoor (a)	Total
							Cancer Risk								
1	Routine Worker	surface soil	4.E-07	3.E-07	3.E-06	NA	NA	1.E-10	1.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**2E-05**
1	Utility Maint. Worker	0-10'	4.E-07	2.E-07	NA	8.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**4E-05**
1	Trespasser	surface soil	1.E-08	7.E-09	6.E-09	NA	NA	8.E-11	4.E-09	NA	NA	NA	NA	NA	3E-08
2	Routine Worker	surface soil (c)	NA	NA	1.E-05	NA	NA	7.E-08	2.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**3E-05**
2	Utility Maint. Worker	0-10'	1.E-06	6.E-07	NA	5.E-07	NA	NA	NA	NA	NA	NA	NA	NA	3E-06
2	Construction Worker	0-10'	4.E-06	2.E-06	NA	NA	4.E-06	NA	NA	NA	NA	NA	NA	NA	9E-06
2	Construction Worker	0-4'	1.E-06	5.E-07	NA	NA	2.E-06	NA	NA	NA	NA	NA	NA	NA	4E-06
2	Trespasser	surface soil (c)	NA	NA	3.E-08	NA	NA	4.E-08	9.E-09	NA	NA	NA	NA	NA	7E-08
3	Routine Worker	surface soil	4.E-06	3.E-06	5.E-06	NA	NA	NA	NA	3.E-06	1.E-06	NA	5.E-06	6.E-06	**3E-05**
3	Utility Maint. Worker	0-10'	5.E-07	2.E-07	NA	9.E-07	NA	NA	NA	NA	NA	NA	NA	NA	2E-06
3	Construction Worker	0-10'	1.E-06	6.E-07	NA	NA	5.E-06	NA	NA	NA	NA	NA	NA	NA	7E-06
3	Construction Worker	0-4'	2.E-06	9.E-07	NA	NA	3.E-06	NA	NA	NA	NA	NA	NA	NA	6E-06
3	Trespasser	surface soil	1.E-07	6.E-08	9.E-09	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-07
4A	Trespasser	sediment	6.E-08	3.E-08	7.E-08	NA	NA	5.E-09	5.E-09	NA	NA	NA	NA	NA	2E-07
4B	Routine Worker	sediment	1.E-06	9.E-07	2.E-06	NA	NA	1.E-07	8.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**2E-05**
4B	Utility Maint. Worker	sediment	5.E-08	2.E-08	NA	6.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**4E-05**
4B	Trespasser	sediment	4.E-08	2.E-08	4.E-09	NA	NA	6.E-08	3.E-08	NA	NA	NA	NA	NA	2E-07
5A	Resident, Adult	surface soil	7.E-07	3.E-07	4.E-06	3.E-09	3.E-08	NA	NA	8.E-08	3.E-08	2.E-05	2.E-07	3.E-08	**3E-05**
5A	*Resident, Child*	*surface soil*	*4.E-06*	*1.E-06*	*3.E-06*	*2.E-09*	*3.E-08*	NA	NA	*6.E-08*	*3.E-08*	*2.E-05*	*2.E-07*	*4.E-08*	**3E-05**
5B	Utility Maint. Worker	NA	NA	NA	NA	5.E-07	NA	NA	NA	NA	3.E-06 (b)	NA	NA	NA	3E-06
6	Resident, Adult	sediment	4.E-08	2.E-08	4.E-06	1.E-09	9.E-09	NA	NA	NA	NA	NA	NA	NA	4E-06
6	Resident, Child	sediment	6.E-06	2.E-06	3.E-06	9.E-10	9.E-09	NA	NA	NA	NA	NA	NA	NA	**1E-05**
							Hazard Indices								
1	Routine Worker	surface soil	6.E-02	6.E-02	6.E-01	NA	NA	9.E-06	3.E-06	1.E-01	2.E-02	NA	4.E-02	2.E-01	**1E+00 (d)**
1	Utility Maint. Worker	0-10'	**1.E+00**	5.E-01	NA	**1.E+01**	NA	NA	NA	NA	**2.E+00 (b)**	NA	NA	NA	**2E+01**
1	Trespasser	surface soil	8.E-03	5.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-02
2	Routine Worker	surface soil (c)	NA	NA	8.E-01	NA	NA	4.E-03	4.E-04	1.E-01	3.E-02	NA	4.E-02	2.E-01	**1E+00 (d)**
2	Utility Maint. Worker	0-10'	**2.E+00**	7.E-01	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**3E+00**
2	Construction Worker	0-10'	**1.E+00**	5.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
2	Construction Worker	0-4'	4.E-01	9.E-02	NA	NA	2.E-01	NA	NA	NA	NA	NA	NA	NA	7E-01
2	Trespasser	surface soil (c)	NA	NA	4.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	4E-03
3	Routine Worker	surface soil	5.E-01	3.E-01	5.E-01	NA	NA	NA	NA	1.E-01	3.E-02	NA	4.E-02	2.E-01	**2E+00 (d)**
3	Utility Maint. Worker	0-10'	**1.E+00**	3.E-01	NA	8.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
3	Construction Worker	0-10'	8.E-01	2.E-01	NA	NA	6.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
3	Construction Worker	0-4'	7.E-01	2.E-01	NA	NA	2.E-01	NA	NA	NA	NA	NA	NA	NA	**1E+00 (d)**
3	Trespasser	surface soil	8.E-02	2.E-02	2.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E-01
4A	Trespasser	sediment	3.E-02	2.E-02	2.E-02	NA	NA	3.E-04	3.E-05	NA	NA	NA	NA	NA	7E-02
4B	Routine Worker	sediment	2.E-01	2.E-01	5.E-01	NA	NA	8.E-05	1.E-04	1.E-01	2.E-02	NA	4.E-02	2.E-01	**1E+00 (d)**
4B	Utility Maint. Worker	sediment	3.E-01	1.E-01	NA	**1.E+01**	NA	NA	NA	NA	9.E-01 (b)	NA	NA	NA	**1E+01**
4B	Trespasser	sediment	3.E-02	2.E-02	9.E-04	NA	NA	1.E-04	1.E-04	NA	NA	NA	NA	NA	5E-02
5A	Resident, Adult	surface soil	5.E-02	2.E-02	3.E-01	2.E-03	4.E-03	NA	NA	6.E-03	7.E-04	9.E-01	6.E-03	3.E-05	**1E+00 (d)**
5A	Resident, Child	surface soil	5.E-01	1.E-01	3.E-01	2.E-03	4.E-03	NA	NA	1.E-02	2.E-03	**1.E+00**	9.E-03	6.E-05	**2E+00 (d)**
5B	Utility Maint. Worker	NA	NA	NA	NA	1.E+00	NA	NA	NA	NA	3.E-02 (b)	NA	NA	NA	1E+00 (d)
6	Resident, Adult	sediment	7.E-02	2.E-04	5.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	6E-01
6	Resident, Child	sediment	1.E-01	2.E-02	5.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	6E-01

Notes:

NA = Not applicable to receptor in specified area. See text for discussion.

(a) Risks and hazard indices based on exposure to lower aquifer ground water unless otherwise noted.

(b) Based on exposure to upper aquifer ground water.

(c) Surface soil concentrations in Area 2 were not measured due to ongoing site investigation and remediation activities and the presence of a one-foot clay cap.

(d) Hazard index is less than or equal to one, when separated by target organ (see text).

TABLE 5-2b

High-End Cumulative Cancer Risks and Hazard Index Estimates for Future Potential Exposures

Approach 1: Surface Soil

ACS NPL Site, Griffith, Indiana

Area	Receptor		Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Utility Maintenance	Inhalation of Vapors and Particulates during Construction	Incidental Ingestion of Surface Water - Outdoor	Dermal Contact with Surface Water Outdoor	Incidental Ingestion of Ground Water - Outdoor (a)	Dermal Contact with Ground Water Outdoor (a)	Ingestion of Water - Indoor (a)	Dermal Contact with Water - Indoor (a)	Inhalation of Vapors from Water - Indoor (a)	Total
Cancer Risk															
1	Routine Worker	surface soil	4.E-06	2.E-06	1.E-05	NA	NA	2.E-09	2.E-07	2.E-05	1.E-05	NA	5.E-05	4.E-05	**1E-04**
1	Utility Maint. Worker	0-10'	1.E-05	2.E-06	NA	9.E-05	NA	NA	NA	NA	**3.E-04 (b)**	NA	NA	NA	**4E-04**
1	Trespasser	surface soil	5.E-07	2.E-07	3.E-07	NA	NA	4.E-09	2.E-07	NA	NA	NA	NA	NA	**1E-06**
2	Routine Worker	surface soil (c)	NA	NA	7.E-05	NA	NA	1.E-06	4.E-07	2.E-05	1.E-05	NA	5.E-05	4.E-05	**2E-04**
2	Utility Maint. Worker	0-10'	6.E-05	6.E-06	NA	5.E-06	NA	NA	NA	NA	NA	NA	NA	NA	**7E-05**
2	Construction Worker	0-10'	5.E-05	5.E-06	NA	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	**7E-05**
2	Construction Worker	0-4'	2.E-05	2.E-06	NA	NA	7.E-06	NA	NA	NA	NA	NA	NA	NA	**3E-05**
2	Trespasser	surface soil (c)	NA	NA	1.E-06	NA	NA	2.E-06	5.E-07	NA	NA	NA	NA	NA	**4E-06**
3	Routine Worker	surface soil	4.E-05	1.E-05	2.E-05	NA	NA	NA	NA	2.E-05	1.E-05	NA	5.E-05	4.E-05	**2E-04**
3	Utility Maint. Worker	0-10'	2.E-05	2.E-06	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	NA	**3E-05**
3	Construction Worker	0-10'	2.E-05	2.E-06	NA	NA	2.E-05	NA	NA	NA	NA	NA	NA	NA	**4E-05**
3	Construction Worker	0-4'	3.E-05	3.E-06	NA	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	**4E-05**
3	Trespasser	surface soil	5.E-06	2.E-06	4.E-07	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7E-06**
4A	Trespasser	sediment	3.E-06	9.E-07	3.E-06	NA	NA	2.E-07	3.E-07	NA	NA	NA	NA	NA	**7E-06**
4B	Routine Worker	sediment	1.E-05	5.E-06	1.E-05	NA	NA	2.E-06	2.E-06	2.E-05	1.E-05	NA	5.E-05	4.E-05	**2E-04**
4B	Utility Maint. Worker	sediment	2.E-06	2.E-07	NA	6.E-05	NA	NA	NA	NA	**3.E-04 (b)**	NA	NA	NA	**4E-04**
4B	Trespasser	sediment	2.E-06	6.E-07	2.E-07	NA	NA	3.E-06	2.E-06	NA	NA	NA	NA	NA	**7E-06**
5A	Resident, Adult	surface soil	4.E-06	1.E-06	2.E-05	2.E-08	9.E-08	NA	NA	3.E-07	1.E-07	1.E-04	3.E-06	3.E-07	**1E-04**
5A	Resident, Child	surface soil	2.E-05	2.E-06	4.E-06	4.E-09	9.E-08	NA	NA	7.E-07	5.E-07	4.E-05	8.E-07	9.E-08	**7E-05**
5B	Utility Maint. Worker	NA	NA	NA	NA	5.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**3E-05**
6	Resident, Adult	sediment	7.E-07	3.E-07	2.E-05	9.E-09	3.E-08	NA	NA	NA	NA	NA	NA	NA	**2E-05**
6	Resident, Child	sediment	3.E-05	4.E-06	4.E-06	2.E-09	3.E-08	NA	NA	NA	NA	NA	NA	NA	**4E-05**
Hazard Indices															
1	Routine Worker	surface soil	1.E-01	8.E-02	7.E-01	NA	NA	4.E-05	1.E-05	2.E-01	5.E-02	NA	1.E-01	2.E-01	**2E+00 (d)**
1	Utility Maint. Worker	0-10'	**5.E+00**	6.E-01	NA	**2.E+01**	NA	NA	NA	NA	**2.E+00 (b)**	NA	NA	NA	**3E+01**
1	Trespasser	surface soil	3.E-02	1.E-02	5.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	5E-02
2	Routine Worker	surface soil (c)	NA	NA	9.E-01	NA	NA	2.E-02	2.E-03	2.E-01	5.E-02	NA	1.E-01	2.E-01	**2E+00 (d)**
2	Utility Maint. Worker	0-10'	**8.E+00**	9.E-01	NA	5.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**9E+00**
2	Construction Worker	0-10'	**6.E+00**	6.E-01	NA	NA	4.E-01	NA	NA	NA	NA	NA	NA	NA	**7E+00**
2	Construction Worker	0-4'	**2.E+00**	1.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
2	Trespasser	surface soil (c)	NA	NA	1.E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E-02
3	Routine Worker	surface soil	**1.E+00**	4.E-01	6.E-01	NA	NA	NA	NA	2.E-01	5.E-02	NA	1.E-01	2.E-01	**3E+00 (d)**
3	Utility Maint. Worker	0-10'	**6.E+00**	3.E-01	NA	**1.E+00**	NA	NA	NA	NA	NA	NA	NA	NA	**7E+00**
3	Construction Worker	0-10'	**4.E+00**	2.E-01	NA	NA	9.E-01	NA	NA	NA	NA	NA	NA	NA	**5E+00**
3	Construction Worker	0-4'	**3.E+00**	2.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**4E+00 (d)**
3	Trespasser	surface soil	3.E-01	6.E-02	8.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	4E-01
4A	Trespasser	sediment	1.E-01	5.E-02	6.E-02	NA	NA	1.E-03	1.E-04	NA	NA	NA	NA	NA	2E-01
4B	Routine Worker	sediment	5.E-01	3.E-01	5.E-01	NA	NA	3.E-04	6.E-04	2.E-01	5.E-02	NA	1.E-01	2.E-01	**2E+00 (d)**
4B	Utility Maint. Worker	sediment	**1.E+00**	2.E-01	NA	**2.E+01**	NA	NA	NA	NA	**1.E+00 (b)**	NA	NA	NA	**2E+01**
4B	Trespasser	sediment	1.E-01	5.E-02	4.E-03	NA	NA	4.E-04	7.E-04	NA	NA	NA	NA	NA	2E-01
5A	Resident, Adult	surface soil	1.E-01	2.E-02	3.E-01	2.E-03	4.E-03	NA	NA	6.E-03	8.E-04	**1.E+00**	3.E-02	1.E-04	**2E+00 (d)**
5A	Resident, Child	surface soil	**2.E+00**	1.E-01	3.E-01	2.E-03	4.E-03	NA	NA	1.E-01	2.E-02	**3.E+00**	4.E-02	1.E-04	**6E+00 (d)**
5B	Utility Maint. Worker	NA	NA	NA	NA	**1.E+00**	NA	NA	NA	NA	3.E-02 (b)	NA	NA	NA	**1E+00 (d)**
6	Resident, Adult	sediment	1.E-01	2.E-02	7.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	8E-01
6	Resident, Child	sediment	7.E-01	3.E-02	7.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	**1E+00 (d)**

Notes:

NA = Not applicable to receptor in specified area. See text for discussion.

(a) Risks and hazard indices based on exposure to lower aquifer ground water unless otherwise noted.

(b) Based on exposure to upper aquifer ground water.

(c) Surface soil concentrations in Area 2 were not measured due to ongoing site investigation and remediation activities and the presence of a one-foot clay cap.

(d) Hazard index is less than or equal to one, when separated by target organ (see text).

TABLE 5-3a
Central Tendency Cumulative Cancer Risks and Hazard Index Estimates for Future Potential Exposures
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Area	Receptor		Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Utility Maintenance	Inhalation of Vapors and Particulates during Construction	Incidental Ingestion of Surface Water Outdoor	Dermal Contact with Surface Water Outdoor	Incidental Ingestion of Ground Water - Outdoor (a)	Dermal Contact with Ground Water Outdoor (a)	Ingestion of Water - Indoor (a)	Dermal Contact with Water - Indoor (a)	Inhalation of Vapors from Water Indoor (a)	Total
							Cancer Risk								
1	Routine Worker	subsurface soil	1.E-05	9.E-06	2.E-05	NA	NA	1.E-10	1.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**6E-05**
1	Utility Maint. Worker	0-10'	4.E-07	2.E-07	NA	8.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**4E-05**
1	Trespasser	subsurface soil	3.E-07	2.E-07	4.E-08	NA	NA	8.E-11	4.E-09	NA	NA	NA	NA	NA	5E-07
2	Routine Worker	subsurface soil	3.E-05	3.E-05	2.E-05	NA	NA	7.E-08	2.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**9E-05**
2	Utility Maint. Worker	0-10'	1.E-06	6.E-07	NA	5.E-07	NA	NA	NA	NA	NA	NA	NA	NA	**3E-06**
2	Construction Worker	0-10'	4.E-06	2.E-06	NA	NA	4.E-06	NA	NA	NA	NA	NA	NA	NA	**9E-06**
2	Construction Worker	0-4'	1.E-06	5.E-07	NA	NA	2.E-06	NA	NA	NA	NA	NA	NA	NA	**4E-06**
2	Trespasser	subsurface soil	1.E-06	6.E-07	3.E-08	NA	NA	4.E-08	9.E-09	NA	NA	NA	NA	NA	**2E-06**
3	Routine Worker	subsurface soil	1.E-05	1.E-05	2.E-05	NA	NA	NA	NA	3.E-06	1.E-06	NA	5.E-06	6.E-06	**6E-05**
3	Utility Maint. Worker	0-10'	5.E-07	2.E-07	NA	9.E-07	NA	NA	NA	NA	NA	NA	NA	NA	**2E-06**
3	Construction Worker	0-10'	1.E-06	6.E-07	NA	NA	5.E-06	NA	NA	NA	NA	NA	NA	NA	**7E-06**
3	Construction Worker	0-4'	2.E-06	9.E-07	NA	NA	3.E-06	NA	NA	NA	NA	NA	NA	NA	**6E-06**
3	Trespasser	subsurface soil	4.E-07	2.E-07	4.E-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	7E-07
4A	Trespasser	sediment	6.E-08	3.E-08	7.E-08	NA	NA	5.E-09	5.E-09	NA	NA	NA	NA	NA	2E-07
4B	Routine Worker	sediment	1.E-06	9.E-07	2.E-06	NA	NA	1.E-07	8.E-08	3.E-06	1.E-06	NA	5.E-06	6.E-06	**2E-05**
4B	Utility Maint. Worker	sediment	5.E-08	2.E-08	NA	6.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**4E-05**
4B	Trespasser	sediment	4.E-08	2.E-08	4.E-09	NA	NA	6.E-08	3.E-08	NA	NA	NA	NA	NA	2E-07
5A	Resident, Adult	surface soil (c)	7.E-07	3.E-07	8.E-06	3.E-09	3.E-08	NA	NA	8.E-08	3.E-08	2.E-05	2.E-07	3.E-08	**3E-05**
5A	Resident, Child	surface soil (c)	4.E-06	1.E-06	5.E-06	2.E-09	3.E-08	NA	NA	6.E-08	3.E-08	2.E-05	2.E-07	4.E-08	**3E-05**
5B	Utility Maint. Worker	NA	NA	NA	NA	5.E-07	NA	NA	NA	NA	3.E-06 (b)	NA	NA	NA	**3E-06**
6	Resident, Adult	sediment (c)	4.E-08	2.E-08	8.E-06	1.E-09	9.E-09	NA	NA	NA	NA	NA	NA	NA	**8E-06**
6	Resident, Child	sediment (c)	6.E-06	2.E-06	5.E-06	9.E-10	9.E-09	NA	NA	NA	NA	NA	NA	NA	**1E-05**
							Hazard Indices								
1	Routine Worker	subsurface soil	1.E+00	**1.E+00**	**2.E+00**	NA	NA	9.E-06	3.E-06	1.E-01	2.E-02	NA	4.E-02	2.E-01	**4E+00**
1	Utility Maint. Worker	0-10'	**1.E+00**	5.E-01	NA	**1.E+01**	NA	NA	NA	NA	**2.E+00 (b)**	NA	NA	NA	**2E+01**
1	Trespasser	subsurface soil	3.E-01	2.E-01	3.E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	6E-01
2	Routine Worker	subsurface soil	**1.E+00**	1.E+00	**1.E+00**	NA	NA	4.E-03	4.E-04	1.E-01	3.E-02	NA	4.E-02	2.E-01	**3E+00**
2	Utility Maint. Worker	0-10'	**2.E+00**	7.E-01	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**3E+00**
2	Construction Worker	0-10'	**1.E+00**	5.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
2	Construction Worker	0-4'	4.E-01	9.E-02	NA	NA	2.E-01	NA	NA	NA	NA	NA	NA	NA	7E-01
2	Trespasser	subsurface soil	2.E-01	1.E-01	4.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	3E-01
3	Routine Worker	subsurface soil	**1.E+00**	6.E-01	**3.E+00**	NA	NA	NA	NA	1.E-01	3.E-02	NA	4.E-02	2.E-01	**5E+00**
3	Utility Maint. Worker	0-10'	**1.E+00**	3.E-01	NA	8.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
3	Construction Worker	0-10'	8.E-01	2.E-01	NA	NA	6.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
3	Construction Worker	0-4'	7.E-01	2.E-01	NA	NA	2.E-01	NA	NA	NA	NA	NA	NA	NA	**1E+00 (d)**
3	Trespasser	subsurface soil	1.E-01	3.E-02	7.E-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-01
4A	Trespasser	sediment	3.E-02	2.E-02	2.E-02	NA	NA	3.E-04	3.E-05	NA	NA	NA	NA	NA	7E-02
4B	Routine Worker	sediment	2.E-01	2.E-01	5.E-01	NA	NA	8.E-05	1.E-04	1.E-01	2.E-02	NA	4.E-02	2.E-01	**1E+00 (d)**
4B	Utility Maint. Worker	sediment	3.E-01	1.E-01	NA	**1.E+01**	NA	NA	NA	NA	9.E-01 (b)	NA	NA	NA	**1E+01**
4B	Trespasser	sediment	NA	NA	9.E-04	NA	NA	1.E-04	1.E-04	NA	NA	NA	NA	NA	1E-03
5A	Resident, Adult	surface soil (c)	5.E-02	2.E-02	5.E-01	2.E-03	4.E-03	NA	NA	6.E-03	7.E-04	9.E-01	6.E-03	3.E-05	**1E+00 (d)**
5A	Resident, Child	surface soil (c)	5.E-01	1.E-01	5.E-01	2.E-03	4.E-03	NA	NA	1.E-02	2.E-03	**1.E+00**	9.E-03	6.E-05	**3E+00 (d)**
5B	Utility Maint. Worker	NA	NA	NA	NA	1.E+00	NA	NA	NA	NA	3.E-02 (b)	NA	NA	NA	1E+00 (d)
6	Resident, Adult	sediment (c)	7.E-02	2.E-04	5.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	5E-01
6	Resident, Child	sediment (c)	1.E-01	2.E-02	5.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	6E-01

Notes:
NA = Not applicable to receptor in specified area. See text for discussion.
(a) Risks and hazard indices based on exposure to lower aquifer ground water unless otherwise noted.
(b) Based on exposure to upper aquifer ground water.
(c) Direct soil or sediment contact for off-Site residents was estimated using surface soil or sediment concentrations from the off-Site area. Inhalation of ambient air from Site emissions were estimated using subsurface soil concentrations for on-Site areas.
(d) Hazard index is less than or equal to one, when separated by target organ (see text).

TABLE 5-3b
High-End Cumulative Cancer Risks and Hazard Index Estimates for Future Potential Exposures
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Area	Receptor		Ingestion of Soil	Dermal Contact with Soil	Inhalation of Vapors and Particulates	Inhalation of Vapors and Particulates during Utility Maintenance	Inhalation of Vapors and Particulates during Construction	Incidental Ingestion of Surface Water - Outdoor	Dermal Contact with Surface Water Outdoor	Incidental Ingestion of Ground Water - Outdoor (a)	Dermal Contact with Ground Water Outdoor (a)	Ingestion of Water - Indoor (a)	Dermal Contact with Water - Indoor (a)	Inhalation of Vapors from Water - Indoor (a)	Total
							Cancer Risk								
1	Routine Worker	subsurface soil	9.E-05	5.E-05	**1.E-04**	NA	NA	2.E-09	2.E-07	2.E-05	1.E-05	NA	5.E-05	4.E-05	**4E-04**
1	Utility Maint. Worker	0-10'	1.E-05	2.E-06	NA	9.E-05	NA	NA	NA	NA	**3.E-04 (b)**	NA	NA	NA	**4E-04**
1	Trespasser	subsurface soil	1.E-05	5.E-06	2.E-06	NA	NA	4.E-09	2.E-07	NA	NA	NA	NA	NA	**2E-05**
2	Routine Worker	subsurface soil	**3.E-04**	**1.E-04**	8.E-05	NA	NA	1.E-06	4.E-07	2.E-05	1.E-05	NA	5.E-05	4.E-05	**6E-04**
2	Utility Maint. Worker	0-10'	6.E-05	6.E-06	NA	5.E-06	NA	NA	NA	NA	NA	NA	NA	NA	**7E-05**
2	Construction Worker	0-10'	5.E-05	5.E-06	NA	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	**7E-05**
2	Construction Worker	0-4'	2.E-05	2.E-06	NA	NA	7.E-06	NA	NA	NA	NA	NA	NA	NA	**3E-05**
2	Trespasser	subsurface soil	4.E-05	2.E-05	1.E-06	NA	NA	2.E-06	5.E-07	NA	NA	NA	NA	NA	**6E-05**
3	Routine Worker	subsurface soil	**1.E-04**	6.E-05	**1.E-04**	NA	NA	NA	NA	2.E-05	1.E-05	NA	5.E-05	4.E-05	**4E-04**
3	Utility Maint. Worker	0-10'	2.E-05	2.E-06	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	NA	**3E-05**
3	Construction Worker	0-10'	2.E-05	2.E-06	NA	NA	2.E-05	NA	NA	NA	NA	NA	NA	NA	**4E-05**
3	Construction Worker	0-4'	3.E-05	3.E-06	NA	NA	1.E-05	NA	NA	NA	NA	NA	NA	NA	**4E-05**
3	Trespasser	subsurface soil	2.E-05	7.E-06	2.E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3E-05**
4A	Trespasser	sediment	3.E-06	9.E-07	3.E-06	NA	NA	2.E-07	3.E-07	NA	NA	NA	NA	NA	**7E-06**
4B	Routine Worker	sediment	1.E-05	5.E-06	1.E-05	NA	NA	2.E-06	2.E-06	2.E-05	1.E-05	NA	5.E-05	4.E-05	**2E-04**
4B	Utility Maint. Worker	sediment	2.E-06	2.E-07	NA	6.E-05	NA	NA	NA	NA	**3.E-04 (b)**	NA	NA	NA	**4E-04**
4B	Trespasser	sediment	2.E-06	6.E-07	2.E-07	NA	NA	3.E-06	2.E-06	NA	NA	NA	NA	NA	**7E-06**
5A	Resident, Adult	surface soil (c)	4.E-06	1.E-06	3.E-05	2.E-08	9.E-08	NA	NA	3.E-07	1.E-07	1.E-04	3.E-06	3.E-07	**1E-04**
5A	Resident, Child	surface soil (c)	2.E-05	2.E-06	7.E-06	4.E-09	9.E-08	NA	NA	7.E-07	5.E-07	4.E-05	8.E-07	9.E-08	**7E-05**
5B	Utility Maint. Worker	NA	NA	NA	NA	5.E-06	NA	NA	NA	NA	3.E-05 (b)	NA	NA	NA	**3E-05**
6	Resident, Adult	sediment (c)	7.E-07	3.E-07	3.E-05	9.E-09	3.E-08	NA	NA	NA	NA	NA	NA	NA	**4E-05**
6	Resident, Child	sediment (c)	3.E-05	4.E-06	7.E-06	2.E-09	3.E-08	NA	NA	NA	NA	NA	NA	NA	**5E-05**
							Hazard Indices								
1	Routine Worker	subsurface soil	**2.E+00**	**1.E+00**	**2.E+00**	NA	NA	4.E-05	1.E-05	2.E-01	5.E-02	NA	1.E-01	2.E-01	**6E+00**
1	Utility Maint. Worker	0-10'	**5.E+00**	6.E-01	NA	**2.E+01**	NA	NA	NA	NA	**2.E+00 (b)**	NA	NA	NA	**3E+01**
1	Trespasser	subsurface soil	5.E-01	2.E-01	3.E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	7E-01
2	Routine Worker	subsurface soil	**2.E+00**	**1.E+00**	**1.E+00**	NA	NA	2.E-02	2.E-03	2.E-01	5.E-02	NA	1.E-01	2.E-01	**6E+00**
2	Utility Maint. Worker	0-10'	**8.E+00**	9.E-01	NA	5.E-01	NA	NA	NA	NA	NA	NA	NA	NA	**9E+00**
2	Construction Worker	0-10'	**6.E+00**	6.E-01	NA	NA	4.E-01	NA	NA	NA	NA	NA	NA	NA	**7E+00**
2	Construction Worker	0-4'	**2.E+00**	1.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**2E+00 (d)**
2	Trespasser	subsurface soil	6.E-01	2.E-01	2.E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	9E-01
3	Routine Worker	subsurface soil	**3.E+00**	8.E-01	**3.E+00**	NA	NA	NA	NA	2.E-01	5.E-02	NA	1.E-01	2.E-01	**7E+00**
3	Utility Maint. Worker	0-10'	**6.E+00**	3.E-01	NA	**1.E+00**	NA	NA	NA	NA	NA	NA	NA	NA	**7E+00**
3	Construction Worker	0-10'	**4.E+00**	2.E-01	NA	NA	9.E-01	NA	NA	NA	NA	NA	NA	NA	**5E+00**
3	Construction Worker	0-4'	**3.E+00**	2.E-01	NA	NA	3.E-01	NA	NA	NA	NA	NA	NA	NA	**4E+00 (d)**
3	Trespasser	subsurface soil	4.E-01	8.E-02	3.E-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	5E-01
4A	Trespasser	sediment	1.E-01	5.E-02	6.E-02	NA	NA	1.E-03	1.E-04	NA	NA	NA	NA	NA	2E-01
4B	Routine Worker	sediment	5.E-01	3.E-01	5.E-01	NA	NA	3.E-04	6.E-04	2.E-01	5.E-02	NA	1.E-01	2.E-01	**2E+00 (d)**
4B	Utility Maint. Worker	sediment	**1.E+00**	2.E-01	NA	**2.E+01**	NA	NA	NA	NA	**1.E+00 (b)**	NA	NA	NA	**2E+01**
4B	Trespasser	sediment	1.E-01	5.E-02	4.E-03	NA	NA	4.E-04	7.E-04	NA	NA	NA	NA	NA	2E-01
5A	Resident, Adult	surface soil (c)	1.E-01	2.E-02	6.E-01	2.E-03	4.E-03	NA	NA	6.E-03	8.E-04	**1.E+00**	3.E-02	1.E-04	**2E+00 (d)**
5A	Resident, Child	surface soil (c)	**2.E+00**	1.E-01	6.E-01	2.E-03	4.E-03	NA	NA	1.E-01	2.E-02	**3.E+00**	4.E-02	1.E-04	**6E+00 (d)**
5B	Utility Maint. Worker	NA	NA	NA	NA	**1.E+00**	NA	NA	NA	NA	3.E-02 (b)	NA	NA	NA	**1E+00 (d)**
6	Resident, Adult	sediment (c)	1.E-01	2.E-02	6.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	8E-01
6	Resident, Child	sediment (c)	7.E-01	3.E-02	6.E-01	1.E-03	1.E-03	NA	NA	NA	NA	NA	NA	NA	**1E+00 (d)**

Notes:

NA = Not applicable to receptor in specified area. See text for discussion.

(a) Risks and hazard indices based on exposure to lower aquifer ground water unless otherwise noted.

(b) Based on exposure to upper aquifer ground water.

(c) Direct soil or sediment contact for off-Site residents was estimated using surface soil or sediment concentrations from the off-Site area. Inhalation of ambient air from Site emissions were estimated using subsurface soil concentrations for on-Site areas.

(d) Hazard index is less than or equal to one, when separated by target organ (see text).

TABLE 5-4
Blood Lead Levels and Probability of Screening Level Exceedance
ACS NPL Site, Griffith, Indiana

			Routine Workers (Men and Women)						
			Area 1		Area 2	Area 3	Area 3	Area 4B	No Site Related Contribution
			Surface Soil 0-2'	Subsurface Soil 2-10'	Subsurface Soil 2-10'	Surface Soil 0-2'	Subsurface Soil 2-10'	Surface Soil/ Sediment	
CENTRAL ESTIMATE OF BLOOD LEAD CONCENTRATIONS			current/ future scenario	future scenario	future scenario	future scenario	future scenario	future scenario	Sensitivity Analysis
Typical blood lead level	$PbB_{adult,0}$	ug-Pb/dL	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Soil lead concentration	**PbS**	**mg-Pb/kg-soil**	**84**	**404**	**1664**	**8255**	**3460**	**109**	**0**
Biokinetic slope factor	BKSF	ug-Pb/dL per ug-Pb/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Ingestion rate of soil	IR_s	g-soil/day	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Gastrointestinal absorption fraction	AF_s	unitless	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Exposure frequency	EF_s	days/year	219	219	219	219	219	219	219
Averaging time	AT	days/year	365	365	365	365	365	365	365
Central estimate of blood lead level in adults	**$PbB_{adult,central}$**	**ug-Pb/day**	**2.72**	**3.18**	**5.00**	**14.49**	**7.58**	**2.76**	**2.60**
DISTRIBUTIONAL BLOOD LEAD MODEL			Routine Workers (Men and Women)						
Geometric standard deviation	$GSD_{i,adult}$	unitless	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Constant of proportionality between fetal and maternal blood lead concentration	$R_{fetal/maternal}$	unitless	NA	NA	NA	NA	NA	NA	NA
Z value for 10 ug/dL	Z	unitless	NA	NA	NA	NA	NA	NA	NA
Z value for 30 ug/dL	Z	unitless	4.08	3.82	3.05	1.24	2.34	4.06	4.16
Z value for 40 ug/dL	Z	unitless	4.57	4.31	3.54	1.73	2.83	4.55	4.65
Probability of fetal PbB > 10 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA	NA	NA
Probability of worker PbB > 30 ug/dL		Percent of exposed population	0.002%	0.01%	0.1%	11%	1.0%	0.002%	0.002%
Probability of worker PbB > 40 ug/dL		Percent of exposed population	0.0002%	0.001%	0.02%	4%	0.2%	0.0003%	0.0002%

TABLE 5-4 (continued)
Blood Lead Levels and Probability of Screening Level Exceedance
ACS NPL Site, Griffith, Indiana
Construction Workers (Men and Women)

			Area 2	Area 2	Area 3	Area 3	No Site Related Contribution
			Surface Soil 0-4'	Subsurface Soil 0-10'	Surface Soil 0-4'	Subsurface Soil 0-10'	
CENTRAL ESTIMATE OF BLOOD LEAD CONCENTRATIONS			future scenario	future scenario	future scenario	future scenario	Sensitivity Analysis
Typical blood lead level	$PbB_{adult,0}$	ug-Pb/dL	2.6	2.6	2.6	2.6	2.6
Soil lead concentration	**PbS**	**mg-Pb/kg-soil**	**2569**	**1845**	**6144**	**4419**	**0**
Biokinetic slope factor	BKSF	ug-Pb/dL per ug-Pb/day	0.4	0.4	0.4	0.4	0.4
Ingestion rate of soil	IR_s	g-soil/day	0.1	0.1	0.1	0.1	0.1
Gastrointestinal absorption fraction	AF_s	unitless	0.12	0.12	0.12	0.12	0.12
Exposure frequency	EF_s	days/year	65	65	65	65	65
Averaging time	AT	days/year	91	91	91	91	91
Central estimate of blood lead level in adults	**$PbB_{adult,central}$**	**ug-Pb/day**	**11.38**	**8.91**	**23.61**	**17.71**	**2.60**
DISTRIBUTIONAL BLOOD LEAD MODEL			**Construction Workers (Men and Women)**				
Geometric standard deviation	$GSD_{i,adult}$	unitless	1.8	1.8	1.8	1.8	1.8
Constant of proportionality between fetal and maternal blood lead concentration	$R_{fetal/maternal}$	unitless	NA	NA	NA	NA	NA
Z value for 10 ug/dL	Z	unitless	NA	NA	NA	NA	NA
Z value for 30 ug/dL	Z	unitless	1.65	2.07	0.41	0.90	4.16
Z value for 40 ug/dL	Z	unitless	2.14	2.56	0.90	1.39	4.65
Probability of fetal PbB > 10 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA
Probability of worker PbB > 30 ug/dL		Percent of exposed population	5.0%	2%	34%	18%	0.002%
Probability of worker PbB > 40 ug/dL		Percent of exposed population	1.6%	1%	18%	8%	0.0002%

TABLE 5-4 (continued)
Blood Lead Levels and Probability of Screening Level Exceedance
ACS NPL Site, Griffith, Indiana

			Female Routine Workers Of Child-Bearing Age						
			Area 1		Area 2	Area 3	Area 3	Area 4B	No Site Related Contribution
			Surface Soil 0-2'	Subsurface Soil 2-10'	Subsurface Soil 2-10'	Surface Soil 0-2'	Subsurface Soil 2-10'	Surface Soil/ Sediment	
CENTRAL ESTIMATE OF BLOOD LEAD CONCENTRATIONS			current/ future scenario	future scenario	future scenario	future scenario	future scenario	future scenario	Sensitivity Analysis
Typical blood lead level	$PbB_{adult,0}$	ug-Pb/dL	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Soil lead concentration	**PbS**	**mg-Pb/kg-soil**	**84**	**404**	**1664**	**8255**	**3460**	**109**	**0**
Biokinetic slope factor	BKSF	ug-Pb/dL per ug-Pb/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Ingestion rate of soil	IR_s	g-soil/day	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Gastrointestinal absorption fraction	AF_s	unitless	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Exposure frequency	EF_s	days/year	219	219	219	219	219	219	219
Averaging time	AT	days/year	365	365	365	365	365	365	365
Central estimate of blood lead level in adults	**$PbB_{adult,central}$**	**ug-Pb/day**	**1.82**	**2.28**	**4.10**	**13.59**	**6.68**	**1.86**	**1.70**
DISTRIBUTIONAL BLOOD LEAD MODEL			Fetuses of Female Routine Workers Of Child-Bearing Age						
Geometric standard deviation	$GSD_{i,adult}$	unitless	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Constant of proportionality between fetal and maternal blood lead concentration	$R_{fetal/maternal}$	unitless	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Z value for 10 ug/dL	Z	unitless	3.08	2.69	1.70	-0.34	0.86	3.04	3.19
Z value for 30 ug/dL	Z	unitless	NA	NA	NA	NA	NA	NA	NA
Z value for 40 ug/dL	Z	unitless	NA	NA	NA	NA	NA	NA	NA
Probability of fetal PbB > 10 ug/dL		Percent of exposed population	0.1%	0.4%	4%	63%	19%	0.1%	0.1%
Probability of worker PbB > 30 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA	NA	NA
Probability of worker PbB > 40 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA	NA	NA

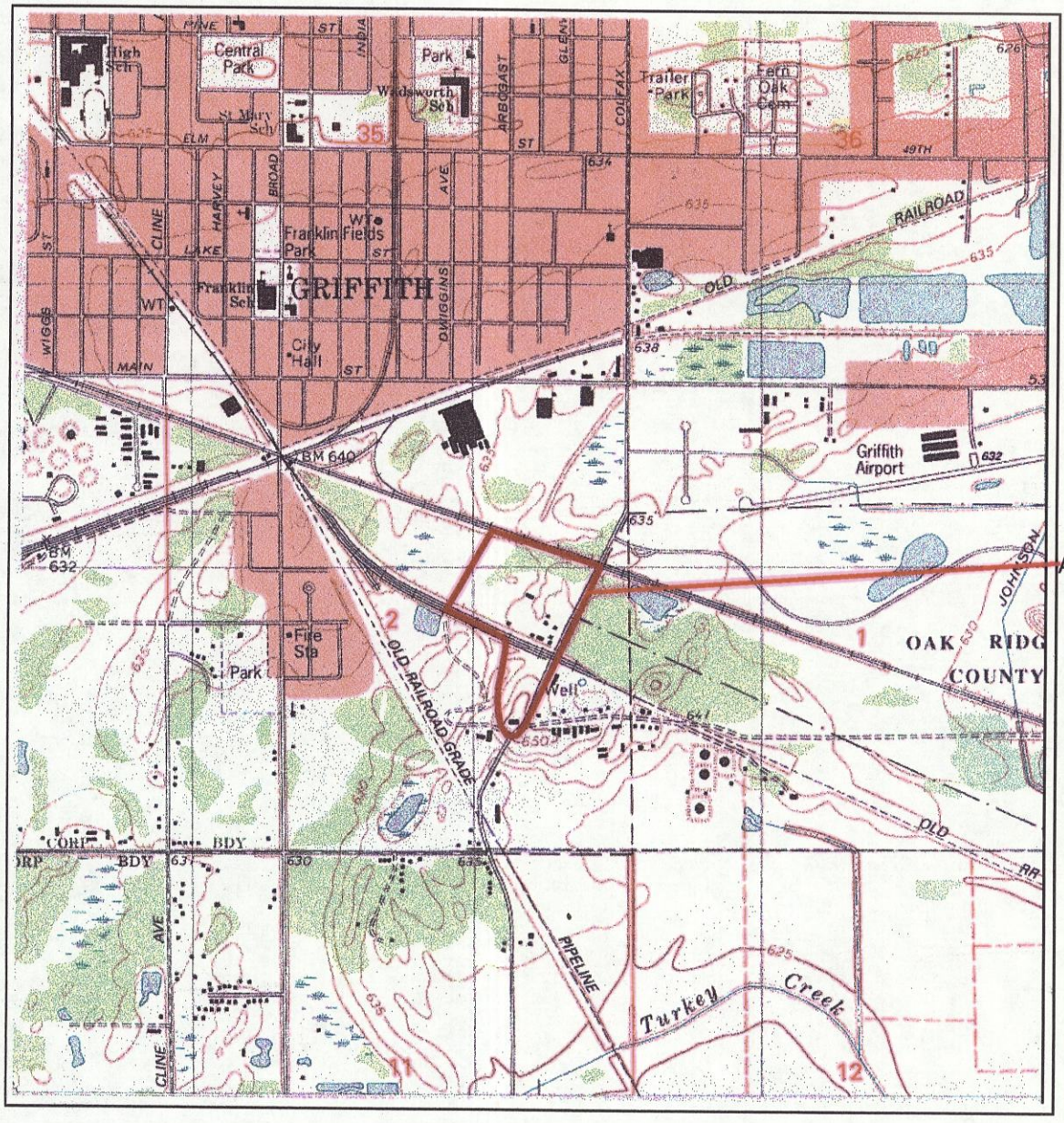
TABLE 5-4 (continued)
Blood Lead Levels and Probability of Screening Level Exceedance
ACS NPL Site, Griffith, Indiana
Female Construction Workers Of Child-Bearing Age

			Area 2	Area 2	Area 3	Area 3	No Site Related Contribution
			Surface Soil 0-4'	Subsurface Soil 0-10'	Surface Soil 0-4'	Subsurface Soil 0-10'	
CENTRAL ESTIMATE OF BLOOD LEAD CONCENTRATIONS			future scenario	future scenario	future scenario	future scenario	Sensitivity Analysis
Typical blood lead level	$PbB_{adult,0}$	ug-Pb/dL	1.7	1.7	1.7	1.7	1.7
Soil lead concentration	**PbS**	**mg-Pb/kg-soil**	**2569**	**1845**	**6144**	**4419**	**0**
Biokinetic slope factor	BKSF	ug-Pb/dL per ug-Pb/day	0.4	0.4	0.4	0.4	0.4
Ingestion rate of soil	IR_s	g-soil/day	0.1	0.1	0.1	0.1	0.1
Gastrointestinal absorption fraction	AF_s	unitless	0.12	0.12	0.12	0.12	0.12
Exposure frequency	EF_s	days/year	65	65	65	65	65
Averaging time	AT	days/year	91	91	91	91	91
Central estimate of blood lead level in adults	**$PbB_{adult,central}$**	**ug-Pb/day**	**10.48**	**8.01**	**22.71**	**16.81**	**1.70**
DISTRIBUTIONAL BLOOD LEAD MODEL			**Fetuses of Female Construction Workers Of Child-Bearing Age**				
Geometric standard deviation	$GSD_{i,adult}$	unitless	1.8	1.8	1.8	1.8	1.8
Constant of proportionality between fetal and maternal blood lead concentration	$R_{fetal/maternal}$	unitless	0.9	0.9	0.9	0.9	0.9
Z value for 10 ug/dL	Z	unitless	0.10	0.56	-1.22	-0.70	3.19
Z value for 30 ug/dL	Z	unitless	NA	NA	NA	NA	NA
Z value for 40 ug/dL	Z	unitless	NA	NA	NA	NA	NA
Probability of fetal PbB > 10 ug/dL		Percent of exposed population	46%	29%	89%	76%	0.1%
Probability of worker PbB > 30 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA
Probability of worker PbB > 40 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA

TABLE 5-4 (continued)
Blood Lead Levels and Probability of Screening Level Exceedance
ACS NPL Site, Griffith, Indiana

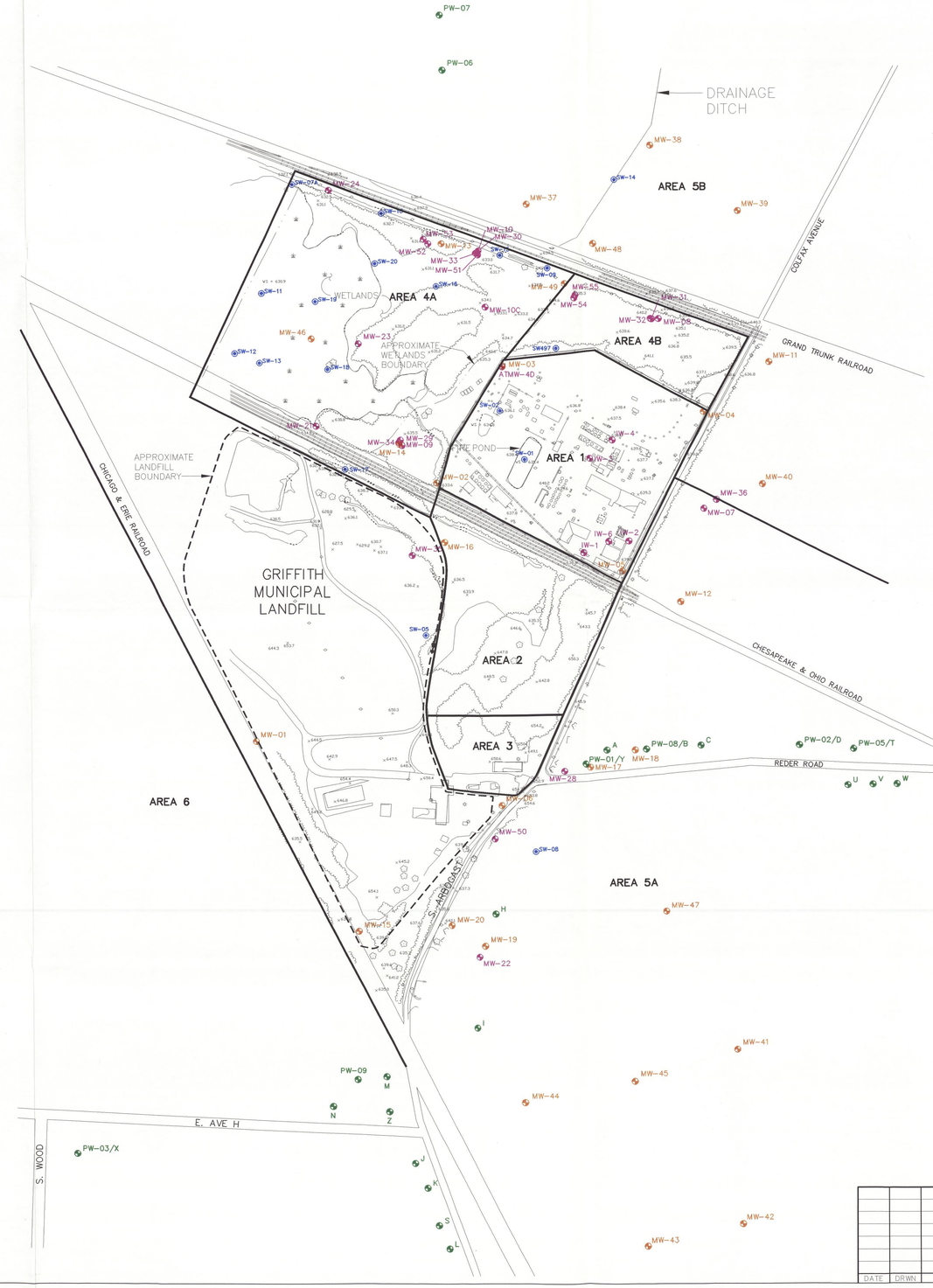
			Trespassers (Age 9 to 18)							
			Area 1		Area 2	Area 3	Area 3	Area 4A	Area 4B	No Site Related Contribution
			Surface Soil 0-2'	Subsurface Soil 2-10'	Subsurface Soil 2-10'	Surface Soil 0-2'	Subsurface Soil 2-10'	Sediment	Surface Soil/ Sediment	
CENTRAL ESTIMATE OF BLOOD LEAD CONCENTRATIONS			future scenario	future scenario	future scenario	future scenario	future scenario	current/ future scenario	current/ future scenario	Sensitivity Analysis
Typical blood lead level	$PbB_{adult,0}$	ug-Pb/dL	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Soil lead concentration	**PbS**	**mg-Pb/kg-soil**	**84**	**404**	**1664**	**8255**	**3460**	**97**	**109**	**0.0**
Biokinetic slope factor	BKSF	ug-Pb/dL per ug-Pb/day	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Ingestion rate of soil	IR_s	g-soil/day	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Gastrointestinal absorption fraction	AF_s	unitless	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Exposure frequency	EF_s	days/year	12	12	12	12	12	12	12	12
Averaging time	AT	days/year	91	91	91	91	91	91	91	91
Central estimate of blood lead level in adults	**$PbB_{adult,central}$**	**ug-Pb/day**	**1.73**	**1.83**	**2.23**	**4.31**	**2.79**	**1.73**	**1.73**	**1.70**
DISTRIBUTIONAL BLOOD LEAD MODEL			Fetuses of Female Trespassers (Age 9 to 18)							
Geometric standard deviation	$GSD_{i,adult}$	unitless	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Constant of proportionality between fetal and maternal blood lead concentration	$R_{fetal/maternal}$	unitless	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Z value for 10 ug/dL	Z	unitless	3.17	3.07	2.74	1.61	2.35	3.16	3.16	3.19
Z value for 30 ug/dL	Z	unitless	NA	NA	NA	NA	NA	NA	NA	NA
Z value for 40 ug/dL	Z	unitless	NA	NA	NA	NA	NA	NA	NA	NA
Probability of fetal PbB > 10 ug/dL		Percent of exposed population	0.1%	0.1%	0.3%	5%	0.9%	0.1%	0.1%	0.07%
Probability of worker PbB > 30 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA	NA	NA	NA
Probability of worker PbB > 40 ug/dL		Percent of exposed population	NA	NA	NA	NA	NA	NA	NA	NA

FIGURES



SOURCE: USGS TOPOGRAPHIC; HIGHLAND QUADRANGLE, I NDIANA, 1991

ENVIRON	SITE LOCATION MAP ACS NPL SITE GRIFFITH, INDIANA	Figure 3 - 1
Drafted By: HFZ Date: 6/24/97		5543BJ01



250 0 250 500 750

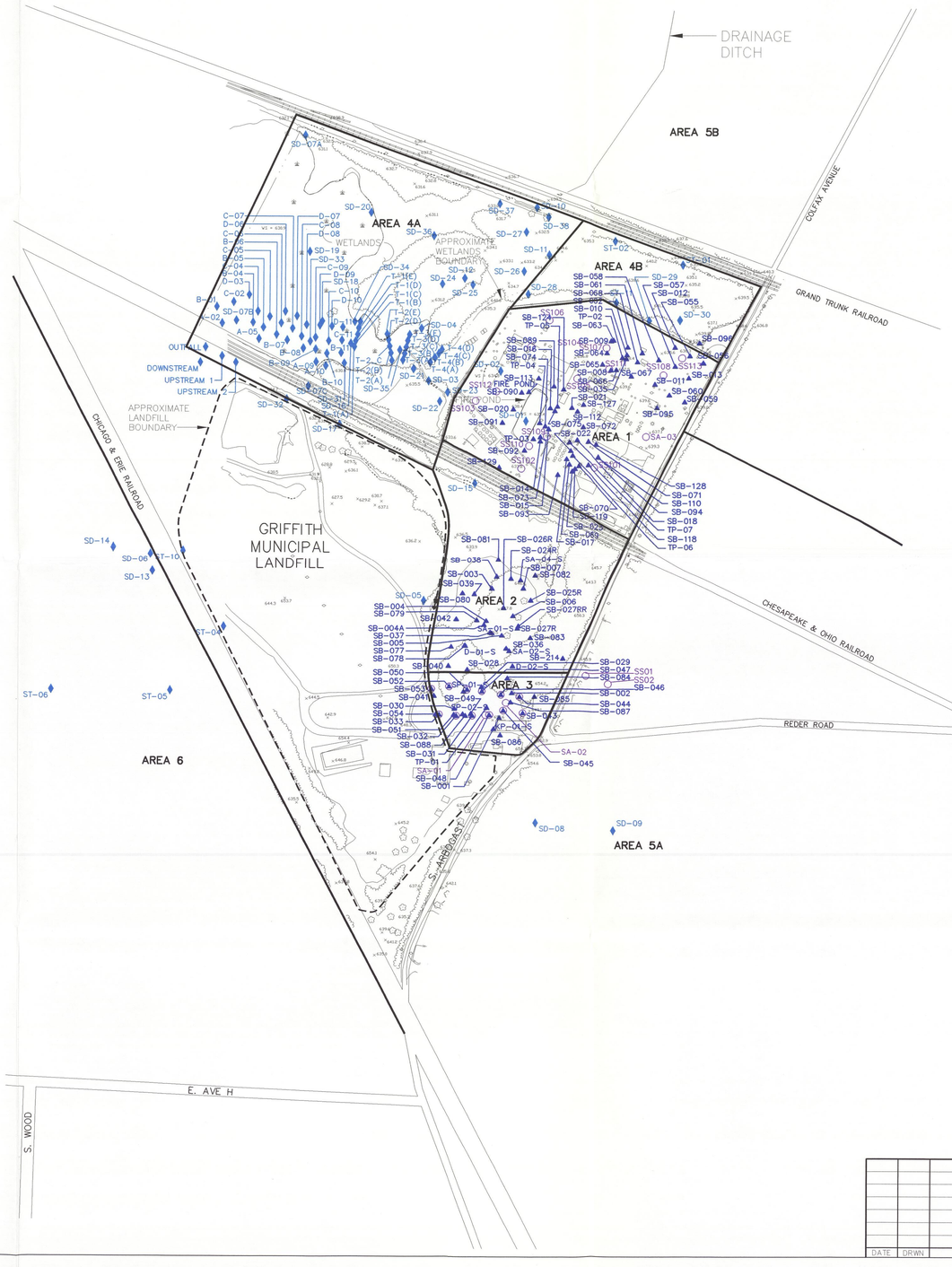
Scale In Feet

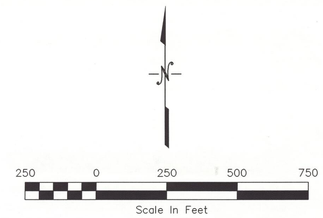
LEGEND

- APPROXIMATE PRIVATE WELL SAMPLE LOCATION
- UPPER AQUIFER WELL SAMPLE LOCATION
- LOWER AQUIFER WELL SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION

3-5 PLATE	GROUND WATER AND SURFACE WATER SAMPLE LOCATION MAP	ENVIRON 214 CARNEGIE CENTER, PRINCETON, NJ 08540 ARLINGTON,VA • EMERYVILLE,CA • IRVINE,CA • HOUSTON,TX	
	ACS NPL SITE GRIFFITH, INDIANA	8/28/98 DATE	1"=250' SCALE
		5543AB2B CADD FILE	9/10/98 PLOT DATE
		DESIGNED BY	HFZ DRAFTED BY
			APPROVED BY

DATE	DRWN	REVISIONS



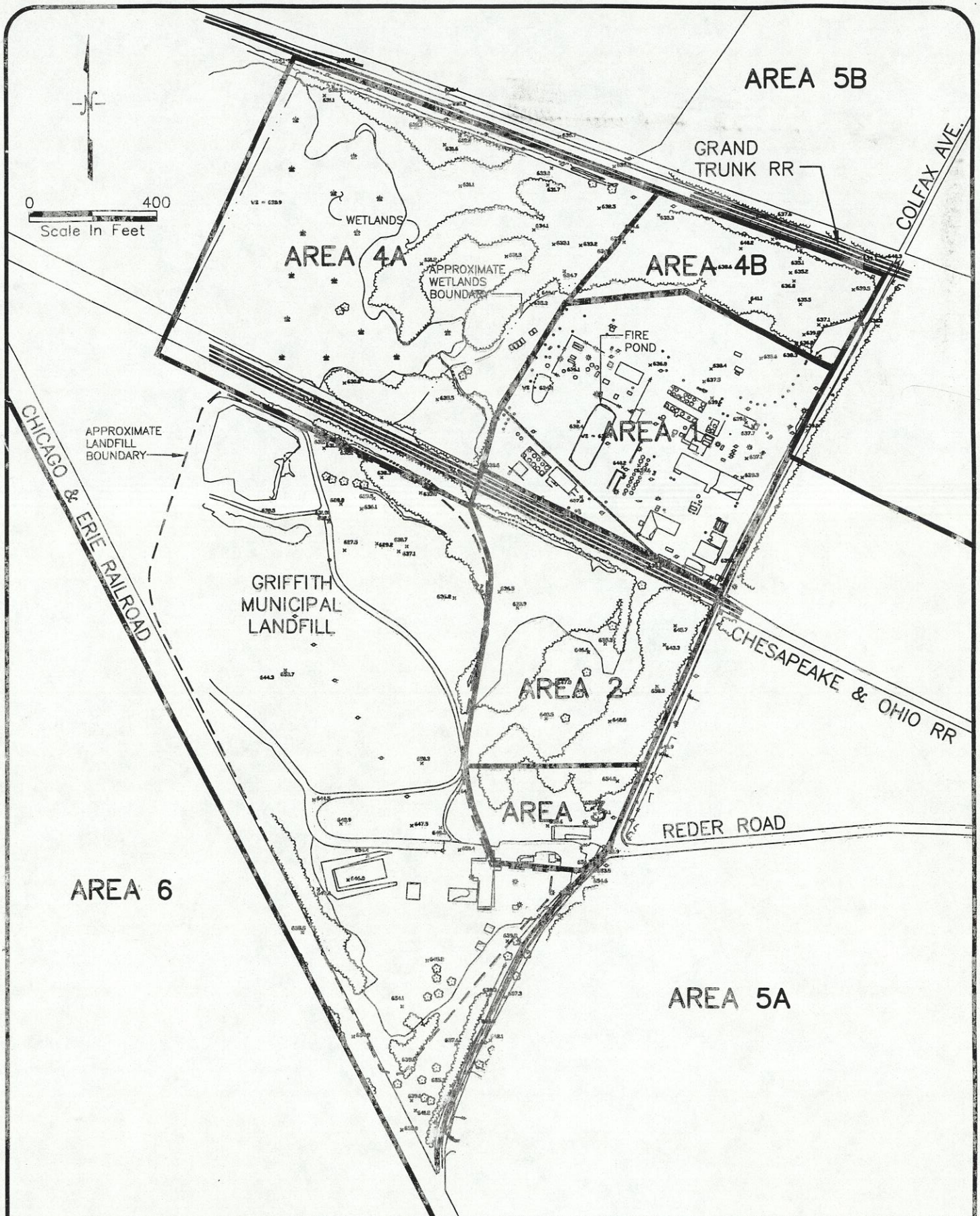


LEGEND

- ♦ SEDIMENT SAMPLE LOCATION
- ○ SURFACE SOIL SAMPLE LOCATION
- ▲ SUBSURFACE SOIL SAMPLE LOCATION

3-4 PLATE	SOIL AND SEDIMENT SAMPLE LOCATION MAP	ENVIRON 214 CARNEGIE CENTER, PRINCETON, NJ 08540 ARLINGTON,VA • EMERYVILLE,CA • IRVINE,CA • HOUSTON,TX
	ACS NPL SITE GRIFFITH, INDIANA	8/28/98 DATE; 1"=250' SCALE; 5543AB2A CADD FILE; 9/10/98 PLOT DATE
		DESIGNED BY; HFZ DRAFTED BY; APPROVED BY

DATE	DRWN	REVISIONS

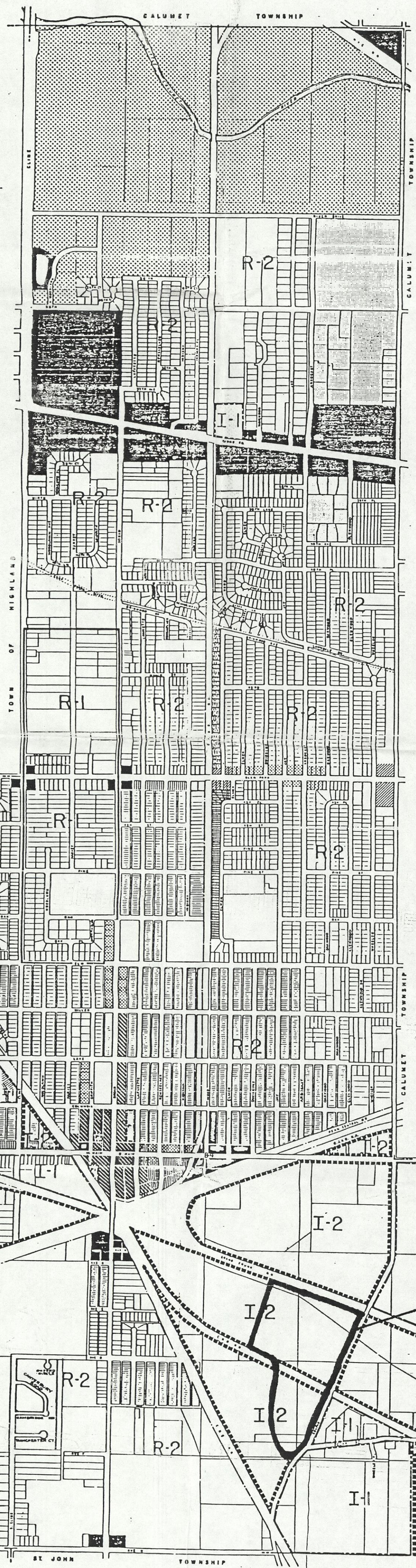


ENVIRON	POTENTIAL EXPOSURE AREAS ACS NPL SITE GRIFFITH, INDIANA	FIGURE 3-3
DRAFTED BY: KPM/TJF | DATE: 4/29/98		5543AB01(V=A)

FIGURE 3 - 2

ZONING DISTRICT MAP

TOWN OF GRIFFITH, INDIANA



—1996—

TOWN COUNCIL

WAYNE GOVERT
1st Ward

RICHARD C. KONOPASEK
2nd Ward

DAVID BLOUNT
3rd Ward

PATRICIA G. SCHAADT
4th Ward

STANLEY E. DOBOSZ
5th Ward

CLERK - TREASURER

RICHARD J. SZAFARCZYK

DIRECTOR OF PUBLIC WORKS

RON COOPER

TOWN ATTORNEY

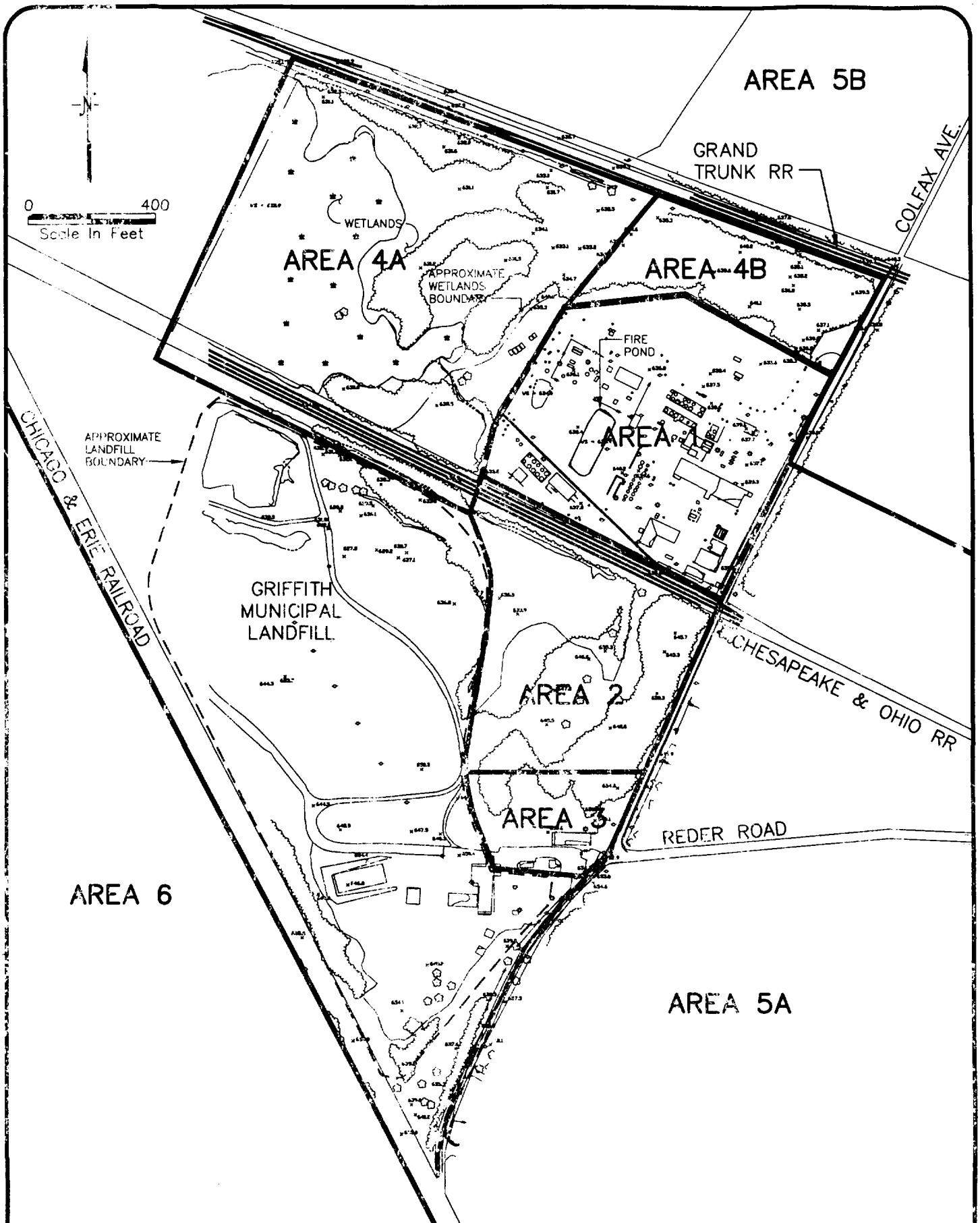
JOHN F. HILBRICH

RESIDENTIAL DISTRICTS

- R-1 R-1 ONE-FAMILY
- R-2 R-2 ONE-FAMILY
- R T TWO-FAMILY
- RM-1 MULTIPLE-FAMILY
- RM-2 MEDIUM DENSITY MULTI-FAMILY

NON-RESIDENTIAL DISTRICTS

- OS-1 OFFICE SERVICE
- B-1 LOCAL BUSINESS
- B-2 CENTRAL BUSINESS
- B-3 GENERAL BUSINESS
- RO RESEARCH OFFICE
- I-1 I-1 LIGHT INDUSTRIAL
- I-2 I-2 GENERAL INDUSTRIAL
- P-1 VEHICULAR PARKING
- B-4 COMMERCIAL DISTRICT



ENVIRON	POTENTIAL EXPOSURE AREAS ACS NPL SITE GRIFFITH, INDIANA	FIGURE 3-3
DRAFTED BY: KPM/TJF DATE: 4/29/98		5543AB01(V=A)

Figure 5-1: Probability Curve for Child Residents in Area 5A
Drinking water Concentration of 12.3 µg/L from Private Well
ACS NPL Site, Griffith, Indiana

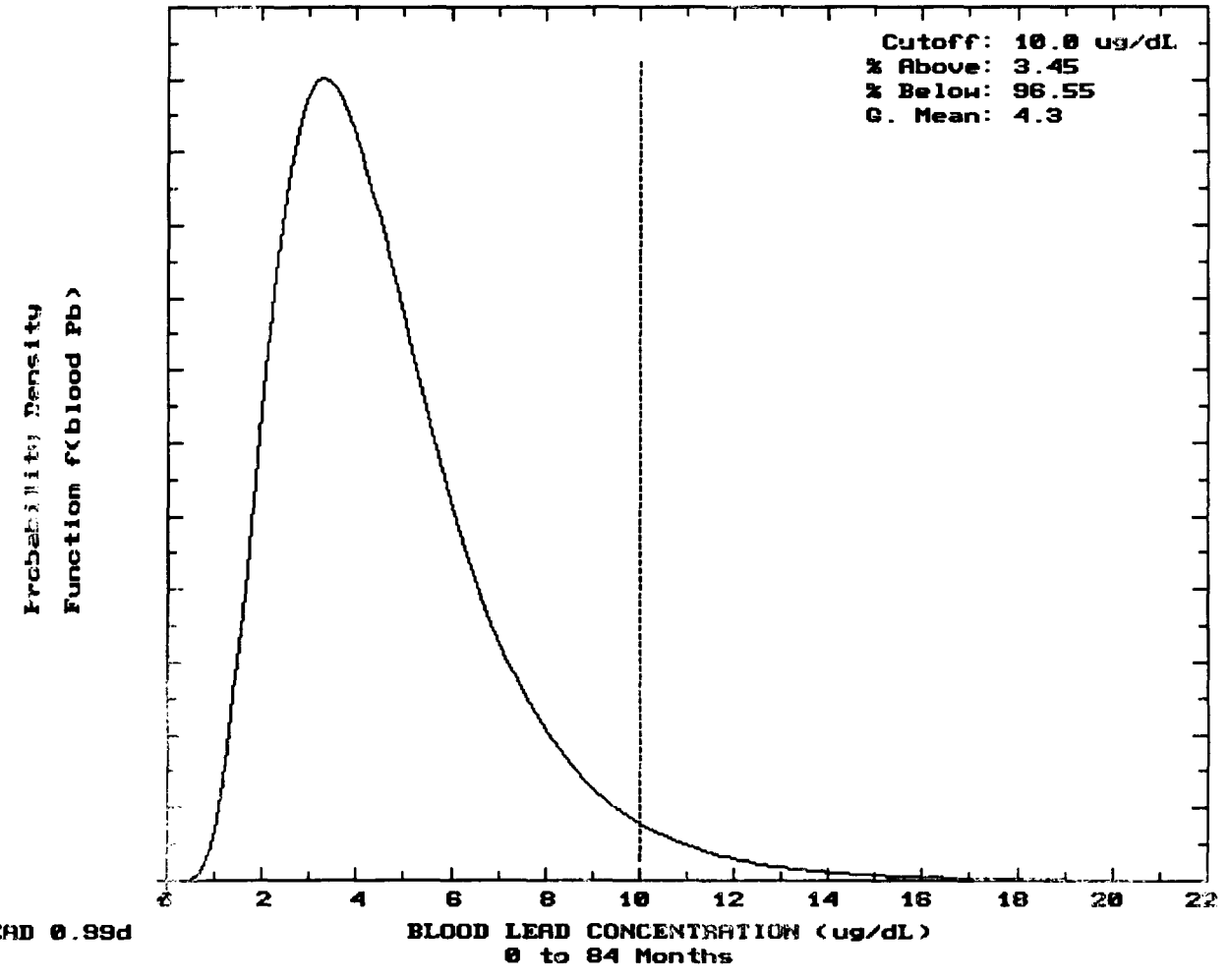
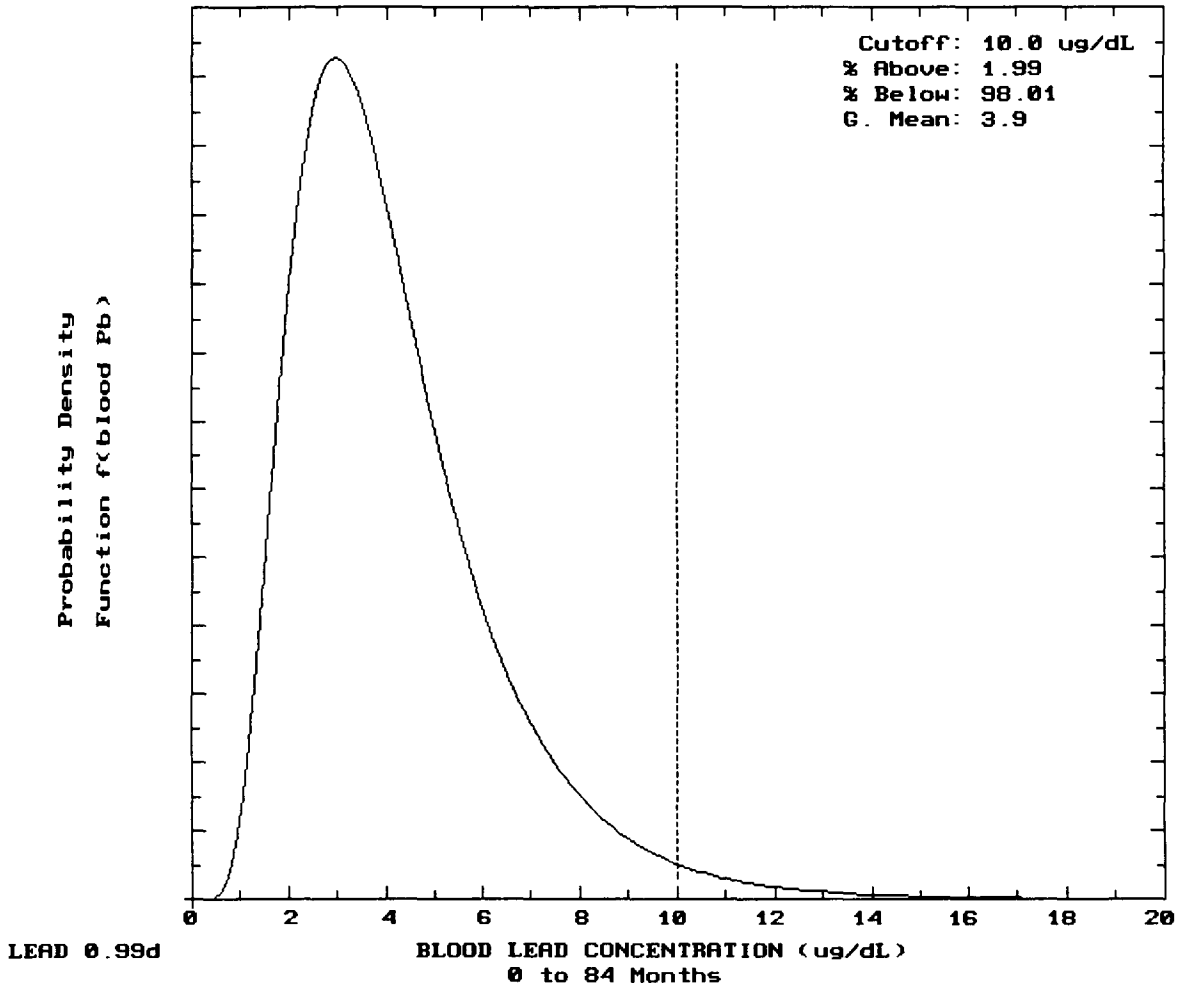


Figure 5-2: Probability Curve for Child Residents in Area 5A
Drinking Water Concentration of 6.2 μg/L from Lower Aquifer
ACS NPL Site, Griffith, Indiana



APPENDIX A

Reasonably Anticipated Future Land Use at the
ACS NPL Site, Griffith, Indiana

CONTENTS

Page

1.0 INTRODUCTION A-1

2.0 EVALUATION OF REASONABLY ANTICIPATED FUTURE LAND USE A-2

2.1 Historical and Current Land Use A-3
2.2 Zoning and Future Land Use Plans A-5
2.3 Likelihood of Future Residential Use A-6
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3.0 CONCLUSION A-13

4.0 REFERENCES A-15

ATTACHMENTS

Attachment 1: Deed Restrictions on the Properties of the ACS NPL Site

1.0 INTRODUCTION

ENVIRON has been retained to perform a baseline human health risk assessment for the American Chemical Services (ACS) NPL Site ("the Site") in the Town of Griffith, Lake County, Indiana. A chemical manufacturing plant has been operating continuously at the Site for over 40 years, and intends to continue operating at the Site in the future. There are no plans to use the property for any non-industrial purposes.

An evaluation of reasonably anticipated future land use is one of the first steps in a baseline risk assessment. Land use assumptions affect the exposure pathways that are evaluated in the baseline risk assessment. In many cases, residential use is the least restricted land use, with the greatest potential for human exposure. However, according to USEPA (55 FR 8666, March 8, 1990, p. 8710), "the assumption of future residential land use is not a requirement" and "may not be justifiable if the probability that the Site will support residential use in the future is small." In such circumstances, assumptions in a baseline assessment should conform with expected future conditions, such as industrial or commercial land use, based on Site-specific conditions.

In 1995, the USEPA Office of Solid Waste and Emergency Response (OSWER) issued OSWER Directive No. 9355.7-04, entitled "Land Use in the CERCLA Remedy Selection Process" (USEPA 1995). This guidance presents a framework and specific factors to be used in determining the reasonably anticipated land use for the purpose of estimating potential future risks. Based on USEPA (1995), a comprehensive review of information pertinent to future land use patterns on and around the Site has been conducted to confirm the assumption of continued industrial land use at the Site.

2.0 EVALUATION OF REASONABLY ANTICIPATED FUTURE LAND USE

Historical and current land use at the Site are described in Section 2.1 of this report. This information is combined with consideration of local land use development patterns, visual inspection of the Site, and a review of the sources and types of information identified in USEPA guidance (USEPA 1995) to establish reasonably anticipated future land use at the Site. Sources of Site-specific information consulted include the following:

- Master Plan for Future Land Use, Griffith, Indiana;
- Official Zoning Map for Town of Griffith (see Figure 3-2 in the main text of the risk assessment);
- Personal communications with the Building Commissioner of Griffith;
- Information from the Northwestern Indiana Regional Planning Commission (NIRPC)[1];
- U.S. Census data;
- U.S. topographic, wetland inventory, and flood plain maps;
- Declarations of Land Use Restriction of Real Property (See Attachment 1); and
- Information from the Historic Landmarks Foundation of Indiana.

The Master Plan for Griffith (Vilizan-Leman 1975) is used by the Town government to determine zoning and development in Griffith.

The specific factors identified in USEPA (1995) for evaluating reasonably anticipated future land use are discussed in the following sections:

2.1 Historical and Current Land Use

- Current land use;
- Zoning maps;
- Historical and recent development patterns; and

[1] NIRPC is a multi-purpose area wide planning agency representing local governments within Lake, Porter, and LaPorte Counties; at least two-thirds of the Commission must be local officials.

- Site location in relation to urban, residential, commercial, industrial, agricultural, and recreational areas.

2.2 Zoning and Future Land Use Plans

- Zoning laws; and
- Comprehensive community master plans.

2.3 Likelihood of Future Residential Use

- Population growth patterns and projections;
- Accessibility of Site to existing infrastructure; and
- Institutional controls currently in place.

2.4 Other Information Potentially Related to Land Use

- Federal/State land use designation;
- Cultural factors;
- Natural resources information;
- Location of Wellhead Protection areas/Potential vulnerability of groundwater;
- Environmental justice issues;
- Location of on-Site or nearby wetlands;
- Proximity of Site to a floodplain;
- Proximity of Site to critical habitats of endangered or threatened species; and
- Geologic and hydrogeologic information.

2.1 Historical and Current Land Use

The Site, which covers approximately 21 acres, is located at 420 South Colfax Avenue, in an area of the Town of Griffith that historically has been developed primarily for industrial and commercial uses. The part of Griffith in which the Site is located is referred to as the "eastern portion of the Town" in the Master Plan for the Town of Griffith, Indiana (i.e., including all lands east of Broad Street between the Penn Central and C & E Railroads). The entire "eastern portion of the Town", including the Site, is zoned for industrial use. Maps showing the location, features, and zoning of the Site are provided in the main text of the risk assessment (Figures 3-1, 3-2, and 3-3).

ACS owns or leases approximately 19 acres of the Site and began operations at the Site as a solvent recovery facility in May 1955. Through the nearly 42 years of continuous operation, ACS has modernized, modified, and expanded operations at the Site. For example, in the 1960's ACS added facilities to manufacture small batches of specialty chemicals and in the 1970's built an epoxidation plant to produce a plasticizer. It currently employs over 40 full-time workers. As a result, ACS has established a strong and consistent presence in the Town of Griffith. ACS intends to continue specialty chemical manufacturing and epoxidation operations at the Site "in full force" (see Attachment 1).

In addition to the ACS property, the Site includes 2 acres that also have a history of industrial use. These 2 acres are located south of the ACS facility and adjacent to the Griffith Municipal Landfill (labeled Area 3 on Figure 3-3). Kapica Drum, Inc. began drum reconditioning operations on this portion of the Site in 1951. Pazmey Corporation bought the property in February 1980 and sold it in March 1987 to Darija Djurovic who used the property for automobile storage and repair.

Land surrounding the Site is zoned for industrial use and development, but historically has been used for a combination of industrial, residential, and recreational purposes. The Elsie Wadsworth elementary school, the Franklin elementary school, and St. Mary's school are the schools located closest to the Site. These schools as well as Playhouse Day Care Home lie approximately one mile from the Site. According to the Griffith police department, there are no nursing homes or schools located within a one mile radius of the Site. In the following paragraphs, current land uses in the vicinity of the Site are described in a clockwise fashion, beginning at the northeast corner.[2]

Northeast of the Site, the land east of Colfax and south of Main Street is zoned I-1, for industrial use. The I-1 zoning is a transition zoning between wholesale and manufacturing types of operations. This area now contains an industrial park that has approximately 20% of the lots sold. The Griffith Airport, a lumber planing mill and approximately 10 residences also occupy this area.

Just south of this area and northeast of the Site is Oak Ridge Prairie Park. It is owned and operated by the Lake County Park System as a nature preserve and activity area. Fishing, snow tubing, cross country skiing, and hiking are some the activities available at the park.

East of the Site is vacant land presently owned by the CSX Corporation. The land is currently zoned I-2. This zoning classification is the Town of Griffith's least restrictive

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[2] Note that the land surrounding the Site is shown in Figure 3-1, and the roads and railroads immediately surrounding the Site are labeled in Figure 3-3. Zoning areas are provided in Figure 3-2 (where I-1 and I-2 indicate areas targeted for industrial use, while R-1 and R-2 indicate areas zoned for residential use).

industrial zone. This zoning district is designed for manufacturing, assembling, fabricating, and processing. 86-296 shows permitted use within the I-2 district.

Southeast of the Site is an area zoned I-1. This area has several businesses ranging from auto repair to machine shops. The area has approximately 15 residences, including a residence that is approximately 150 feet from the edge of the Site near the intersection of Colfax and Reder Road. As these residences are all older homes and farms, the Town has grand fathered these residences as conforming uses in this area per 86-359. Turkey Creek is located approximately one mile south of the Site. No fishing, boating, or similar recreational activities occur in this intermittent creek, but wading is possible when water is present.

Directly south and southwest of the Site is the Town of Griffith Municipal Landfill. This property is no longer active as a landfill and is in the closure process.

South, southwest and west of the ACS Site, land beyond the Chesapeake and Ohio Railroad right-of-way is zoned R-2, single family residential.

Adjacent to and west of the ACS facility is vacant land presently zoned I-2, and classified as wetlands. An unnamed, intermittent creek is located along the southern edge of the wetland. No fishing, boating, or similar recreational activities occur in this intermittent creek, but wading is possible when water is present.

The land use directly north of the ACS Site and south of Main Street is zoned I-2. Immediately north of the Grand Trunk Railroad right-of-way, along the northern boundary of the Site, the land is vacant and classified as wetlands. Further to the north, along Main Street, the area is presently occupied by an industrial park with a variety of small businesses: a steel bar coating plant, a heating and plumbing contractor, scaffold storage and sales, and a trucking company.

The Town of Griffith presently uses a Master Plan developed in 1975 by Vilican-Leman & Associates. The Town of Griffith uses this at the Plan Commission level for development of land and at the Town Council level when considering zoning change requests. The master plan has set that the areas around the Site are zoned as industrial areas. The area southeast of the Site contains the largest area of vacant land in the town. This area is presently used as farms, but as the current owners are into retirement age, the future of the land is uncertain. This portion of land is presently I-2.

2.2 Zoning and Future Land Use Plans

The Town of Griffith adopted the Master Plan as a guide for long-range, future land use planning. According to the Building Commissioner of Griffith (personal communication, June 18, 1997), the land use goals established in the Master Plan are followed to establish

zoning and applied when new developments are proposed. At the time the Master Plan was prepared, 8%, or about 390 acres, of the total land area in Griffith was under industrial use, and approximately 46%, or 2,160 acres, was zoned for industrial use. Overall, the Master Plan reduced the total area zoned for industry from 2,160 acres to approximately 1,500 acres. Specifically, the classification of areas in the northern and western portions of Griffith were changed to "research office" or residential. However, it is significant that the Master Plan called for no reductions in industrial zoned land in the eastern portion of the Town where the Site is located, and classified the area as light and heavy industrial "to reflect current development patterns and reflective of potential industrial need for certain industry types. For instance, light industrial represents a more logical development pattern for areas near airports..." (Master Plan, p. 54).

The Site itself is zoned general industrial; the areas adjacent to the Site are zoned either general industrial or light industrial. A residential development is located east and southeast of the Site and the closest resident resides within 150 feet of the Site. The closest area zoned for residential development is located west and southwest of the Site, beyond the Griffith Municipal Landfill and the C & E Railroad right-of-way. Development west and southwest of the Site is currently in the construction stage. According to Town of Griffith officials, no zoning changes are planned for the Site area.

For the eastern portion of town, where the Site is located, the Master Plan aims to maintain existing industries and businesses while expanding commercial/industrial development to promote new business growth, especially around the Griffith Airport. Consistent with the goals for the eastern portion of town, the Master Plan for Griffith envisions no expansion of residential land use in the area of the Site. Potential residential growth in Griffith is planned for "the western portion of town", to the west of the C & E Railroad right-of-way and the Griffith Municipal Landfill. The Master Plan estimated that this area, in combination with other areas zoned for residential use, would meet the needs of a capacity population of approximately 29,000 individuals in Griffith (see section below regarding historical and predicted population trends for Griffith).

2.3 Likelihood of Future Residential Use

- **Importance of the Facility to the Local Economy**

  The facility on the Site is not only an important part of ACS's operations but also represents a part of the Town of Griffith's job base. ACS is listed as one of eight major industries in Griffith (NIPSC 1992). ACS plans to continue operations at the facility and remain an important part of the business community in the Town of Griffith and the surrounding area. However, in the unlikely event that ACS should cease operations at this location, continued industrial use is consistent with the Town of Griffith Plan's goal for industrial growth in the eastern portion of town and with maintaining a similar job base for skilled workers at this location.

- **Suitability for Residential Development**

  There are several structures or features on or near the Site that may make potential residential development undesirable, in the unlikely event that the ACS facility were to cease operations. First, the Site is located adjacent to the Griffith Municipal Landfill which would render the location unattractive for potential new residential development. Second, the Site borders two major active east/west railroad lines, which would also tend to hinder potential residential development because of potential concerns with noise and safety. (Conversely, the Site's proximity to the railroad lines makes its location ideal for commerce and continued industrial use.) Third, the Site is in the flight path of the Griffith Airport, located approximately 2,000 feet from the northeast corner of the Site, which would likewise be expected to inhibit potential new residential development. On the other hand, several features near the Site may be acceptable. Some residents may find residing near Oak Ridge Prairie Park or wetlands as desirable.

- **Historical and Predicted Population Trends**

  As mentioned previously, the Master Plan for Griffith zoned areas for residential or industrial development based on an estimated capacity population of 29,092 for the Town. Thus, current zoning patterns should be adequate for populations below 29,000 individuals. Between 1970 and 1990, the population decreased slightly from 18,168 to 17,916 persons in Griffith, and from 546,253 to 475,594 in Lake County (US Census Bureau 1996, NIPSC 1992). Migration patterns for Lake County also indicate that the probability of future residential development at the Site is small. For people five years of age and older who moved between 1985 and 1990, 50,696 people moved into Lake County but 72,389 moved out of Lake County (IUSB 1997).

Projected population growth rates in the area are similarly low. In fact, the population is predicted to remain virtually unchanged, with a projected increase of only 0.6% in Lake County between 1990 and 2010 (i.e., from 475,594 persons in 1990 to 478,500 persons in 2010) (IUSB 1996). Residential growth in Griffith, should it occur, is planned for areas zoned for residential use to the south and southwest of the Site, rather than for the area where the Site is located. However, the Town Commissioner acknowledged that some residential housing is under development in the area, and the future of some of the land around the Site is unknown.

- **Institutional Controls Currently In Place**

Declarations of Land Use Restriction of Real Property are currently in place for the Site, including the ACS property (signed January 14, 1994), the Djurovic property (signed December 4, 1996), and the CSX property that is leased to ACS (signed March 4, 1994). Copies of these deed restrictions are provided in Attachment 1. These restrictions prohibit the use of the property for residential purposes, prohibit use of ground water as drinking water, and prohibit disturbance of components of the remedial action. These deed restrictions "run with the land and remain in full force and effect in perpetuity...irrespective of any sale, conveyance, alienation or other transfer of any interest or estate in that property...". These deed restrictions include termination clauses for future residential use that require written concurrence by EPA and/or IDEM before deed restriction termination. Additional deed restrictions may need to be imposed once the risk assessment is completed and a final remedy approved.

The deed restrictions are enforceable under Indiana's well-established property law. In *Moseley v. Bishop*, 470 N.E. 2nd 773 (Ind. App. 1984), the court found that covenants intended to run with the land, which concern the use or enjoyment of the land and for which there is notice to subsequent transferees, were enforceable. All of these preconditions for enforceability exist with respect to the recorded deed restrictions at the ACS Site. The recorded covenants all state that they run with the land and apply to successor transferees. All of the recorded deed restrictions relate to the use or enjoyment of the ACS properties; each restricting that use in some way. Finally, in each case there is notice to subsequent transferees through the recording of each restriction in each property's chain of title.

The covenants are viewed as contractual obligations of the original parties as well, *Cunningham v. Hiles*, 182 In. App. 511, 395 N.E. 2d 851 (1973). Therefore, the Committee is in a direct position to enforce the deed restrictions should the need arise. See also *Noblesville Redevelopment Commission v. Noblesville Associates*, et al., 646 N.E. 2d 364 (Ind. App. 1995), *Adult Group Properties v. Imler*, 505 N.E. 2d 459 (Ind. App. 1987), *Conduit v. Ross*, 102 Ind. 166, 26 N.E. 198 (1885) and *Wiley v. Baumgardner* 97 Ind. 66 (1884).

EPA expects that institutional controls supplement active responses, to ensure that the remedy is protective where wastes remain on-Site above levels that allow for unrestricted use. Deed restrictions are enforced in State courts and EPA generally uses agreements such as consent decrees or agreed orders to render deed restrictions enforceable at the Federal level. The five year review also may be used to ensure that the restrictions are being adhered to. EPA may reconsider the remedy as provided in CERCLA.

2.4 Other Information Potentially Related to Land Use

According to USEPA (1995), the following sources and types of information may also be pertinent to the determination of anticipated future land use at the Site:

- **Federal/State Land Use Designation**

  The Site is not located on or near land owned by the Federal or State government. The closest land with designated Federal/State control is Hoosier Prairie, a National Natural Landmark that is owned and managed by the Indiana Department of Natural Resources as part of the Indiana Dunes National Lakeshore. Hoosier Prairie is located approximately 1.5 miles west of the Site.

  Wetlands are located at several locations on and near the ACS facility including: west of the ACS facility between the Grand Trunk and Chicago & Erie Railroad right-of-ways, just north of the Grand Trunk Railroad right-of-way, to the east between the Grand Trunk Railroad and the Chesapeake & Ohio Railroad, and to the southwest between the Chesapeake & Ohio Railroad and the Chicago & Erie Railroad. Other small to very large wetland complexes are also located within one-half to one mile of the Site to the northwest, the southwest and to the east. These areas are unlikely to be developed in any way due to Federal Clean Water Act prohibitions on wetland development (42 U.S.C. 1311 and 1344).

- **Cultural Factors**

  Based on a review of historic Sites in Griffith, no historical Sites or structures have been identified on or near the Site (Historic Landmarks Foundation of Indiana, 1996).

- **Natural Resources Information**

  Section 101 of CERCLA defines natural resources as "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States"..."any State or local government, or any foreign government;". No Federal, State, Indian Tribe, or local government owned or controlled property exists adjacent to or on the ACS Site.

  Oak Ridge Prairie County Park, which may be considered a natural resource, is located to the northeast of the Site across Colfax Avenue and occupies over 340 acres of the area zoned for industrial use in Griffith. According to NIRPC (personal communication with NIRPC Data Services Coordinator, June 17, 1997), the park is unlikely to be developed for industrial use, and it is more likely that other properties already developed for industrial use (e.g., the airport, the ACS property) will be retained for industrial use.

- **Location of Wellhead Protection Areas/Potential Vulnerability of Ground Water**

  According to the Wellhead Protection Hydrogeologist with the Indiana Department of Environmental Management (IDEM) (personal communication, June 23, 1997), the Site is not currently located within a Wellhead Protection Zone. IDEM is currently defining Wellhead Protection Zones in the area for public water supply systems (i.e., systems that serve over 25 people or have at least 15 connections). Since the municipal water supply in Griffith draws on water from Lake Michigan rather than ground water, it is unlikely that Wellhead Protection Zones will be established near the Site.

  Ground water is being directly impacted by the Site, and the baseline risk assessment evaluates the potential health effects that impact on humans under current and future use scenarios. Ground water contamination has been detected in the area of the Site, and a barrier wall and ground water collection trench and treatment system have been installed to prevent further migration of constituents from the Site in the shallow aquifer. The facility at the Site and the majority of residents in Griffith rely on municipal water which is drawn from Lake Michigan, as mentioned above.

However, nearby residents rely on ground water for residential purposes such as drinking, bathing, and landscaping.

A thorough survey of private wells in the area was performed by Warzyn (now Montgomery Watson) during the Remedial Investigation (Warzyn, 1991). Well records that were collected during this survey indicate that all private wells in the vicinity of the Site (on Reder Rd., Colfax Ave., and Arbogast St.) are screened in the lower aquifer, at depths ranging from 45 to 65 feet below ground surface. Appendix L of the RI provides the private well logs of these and other wells in Griffith.

- **Environmental Justice Issues**

  The fraction of the 1990 population in Griffith categorized as "white" by the US Bureau of Census represents approximately 95% of the total population. For comparison, the US Bureau of Census categorized 75% of the total population in Lake County as "white". The percentage of individuals below the poverty level was approximately 4% for the Town of Griffith. For comparison, approximately 14% of individuals in Lake County were below the poverty level. The Census data do not provide information on the geographic distribution of minority or low-income communities within the Town of Griffith.

- **Location of On-Site or Nearby Wetlands**

  Wetland areas are located to the west of the Site, between the Grand Trunk and C&E Railroad right-of-ways. According to U.S. Department of Interior Fish and Wildlife Service Wetlands Inventory Maps (dated November, 1981), the wetlands are classified as Palustrine Emergent Seasonally Flooded and Permanently Flooded. Wetlands are also located at several locations near the ACS Site including: (1) just north of the Grand Trunk Railroad right-of-way; (2) to the east between the Grand Trunk Railroad and the Chesapeake & Ohio Railroad, and (3) to the southwest between the Chesapeake & Ohio Railroad and the Chicago & Erie Railroad. Other small to very large wetland complexes are also located within one-half to one mile of the Site to the northwest, the southwest and to the east. These areas are unlikely to be developed in any way due to Federal Clean Water Act prohibitions on wetland development (42 U.S.C. 1311 and 1344).

- **Proximity of Site to a Floodplain**
  Based on a review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for the Town of Griffith, the Site is not located in or near a floodplain.

- **Proximity of Site to Critical Habitats of Endangered or Threatened Species**
  The Natural History Database indicates the following records:

Section 6, T35N, R8W	-	Forest - Floodplain Wet-Mesic
(State Significant areas)	-	Forest - Upland Dry
	-	Wetland - Swamp Shrub
Section 2, T35N, R9W	-	Prairie - Sand Wet
(State Significant areas)	-	Savanna - Sand Dry-Mesic
Section 3, T35N, R9W	-	Karner Blue Butterfly
(State/Federal Endangered)		

To the northeast of the Site, the Oak Ridge Prairie County Park has been identified as a "high quality natural community and natural area" by the Indiana Department of Natural Resources. Numerous plant species on State Watch, Rare, Threatened or Endangered lists have been recorded at the Oak Ridge Prairie in the last 10 years. There are approximately 100 records of significant, endangered, threatened, rare or of special concern fauna or flora in the database in areas within one-half to one mile from the ACS Site. Few are located directly on the Site but are in surrounding areas. Mobile species and those in areas with pathways for contaminant release could be impacted by the Site.

As indicated above, wetland areas are located on and near the Site. It is highly unlikely that these areas will be developed for either residential or industrial purposes.

- **Geologic and Hydrogeologic Information**
  A detailed description of the geology and hydrogeology at and surrounding the Site is provided in Section 4 of the RI report. This understanding has been updated during recent Site characterization activities, such as documented in the Upper Aquifer

Technical Memorandum (Montgomery Watson 1997d) and the Lower Aquifer Technical Memorandum (Montgomery Watson 1997e). There are no known geologic features (e.g., seismic features) at or near the Site that would be pertinent to the determination of anticipated future land use at the Site.

3.0 CONCLUSION

A comprehensive review of information pertinent to reasonably anticipated future land use patterns confirms that continued industrial land use at the ACS Site represents a reasonable and appropriate assumption for use in the Baseline Risk Assessment. Factors supporting this conclusion include the following:

- A chemical manufacturing plant has been operating continuously at the Site for over 40 years, and intends to continue operating at the Site in the future.

- The Site is zoned industrial, and is slated for continued industrial use in the Master Plan for the Town of Griffith.

- An existing deed restriction for the Site does not allow for future residential development at the Site.

- Although residences can be found adjacent to and near the Site, all property adjacent to the Site is zoned industrial. The Griffith Municipal Landfill, the Town of Griffith Municipal Garage, and two active railroad lines are located immediately adjacent to the Site. In addition, an active airport is located nearby, with a flight path directly over the Site. Based on the history of the Site, and the immediate surrounding area, a reasonable assumption is that the land would not be used for residential purposes and that any use other than industrial/commercial would be unlikely.

- Vacant land zoned for residential use is located in the western portion of the Town of Griffith. The area of this land should be sufficient to meet projections of residential growth in the town.

- There are no other factors listed in EPA's land use guidance that could suggest anything other than industrial development at the Site.

Thus, the ACS NPL Site fits the description provided in USEPA (1995): "future industrial land use is likely to be a reasonable assumption where a Site is currently used for industrial purposes, is located in an area where the surroundings are zoned for industrial purposes, and the comprehensive plan predicts the Site will continue to be used for industrial purposes." (p. 6). Based upon the history of the Site, present zoning and master plan, and deed restrictions, a reasonable assumption that the land would be used as anything other than industrial/commercial would be unlikely. If the landowner/PRPs would like to redevelop the Site with a higher land use later, EPA would expect them to pay for the necessary additional cleanup. This decision does not affect the future of the surrounding area to continue to be used for residential and industrial purposes.

4.0 REFERENCES

Communication with Bill Greco, Griffith Building Commissioner.

Federal Emergency Management Agency. 1982. Flood Insurance Rate Map: Town of Griffith, Indiana (Community-Panel Number 185175). October.

Historic Landmarks Foundation of Indiana. 1996. Indiana Historic Site and Structures Inventory: Lake County Interim Report. May.

Indiana University School of Business (IUSB). 1997. Indiana County Profiles: Status of Indiana families Profile 1996 - Lake County. http://www.iupui.edu/it/ibrc/profiles/sift/page1/co45.pg1.pdf.

Northern Indiana Public Service Company (NIPSC). 1992. Community Analysis for Griffith, Indiana. May.

Sargent, C.A. 1997. EC-208: Answers to Your Questions About Planning and Zoning in Indiana. Cooperative Extension Service, Purdue University.

Torrenga Engineering. 1992. Zoning District Map: Town of Griffith, Indiana. Adopted by the Board of Trustees of the Town of Griffith, Indiana, April 3, 1979; revised February 7, 1992.

United States Department of the Interior, Fish and Wildlife Service. 1981. National Wetlands Inventory Maps for Highland and St. John Quadrangles. November. (Provided by the Lake County Soil and Water Conservation District, June 6, 1997.)

United States Department of the Interior, Geological Survey. 1991. Topographic Map: Highland Quadrangle, Indiana - Lake Co.

United States Environmental Protection Agency (USEPA). 1995. Land Use in the CERCLA Remedy Selection Process. OSWER Directive No. 9355.7-04. Office of Solid Waste and Emergency Response. May 25.

Vilizan-Leman & Assoc. 1975. Master Plan for Future Land Use, Griffith, Indiana. Sponsored by the Griffith Planning Commission. May.

ATTACHMENT 1

Deed Restrictions on the Properties of the ACS NPL Site

94004751

DECLARATION OF LAND USE RESTRICTION OF REAL PROPERTY

American Chemical Services, Inc., an Indiana corporation, owner in fee simple of the real estate described below, hereby imposes restrictions on the described real estate located at or about 420 South Colfax Road, Griffith, Indiana more particularly described in attached Exhibit A.

WHEREAS, American Chemical Services, Inc. ("ACS") is the owner of certain real property described in Exhibit A which comprise the largest portion of the American Chemical Service Superfund Site ("ACS Site").

WHEREAS, the United States Environmental Protection Agency ("U.S. EPA") has determined that there has been an actual or threatened release of hazardous substances as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §9601(14) (1991) ("CERCLA")) from the ACS Site.

WHEREAS, a Remedial Investigation ("RI") has been conducted at the ACS Site to determine the nature and the extent of any release or threatened release of hazardous substances, pollutants or contaminants and a Feasibility Study ("FS") performed to identify and to evaluate alternatives for the appropriate remedial action necessary to prevent or to mitigate the migration or the release or threatened release of hazardous substances, pollutants or contaminants at or from the ACS Site.

WHEREAS, the U.S. EPA has issued a Record of Decision ("ROD") to address actual and threatened releases of hazardous substances to and from the ACS Site.

JAN 27 1994

WHEREAS, ACS desires to restrict the use of the ACS Site so as to reduce the potential of any harm whatsoever arising from the actual and threatened releases of hazardous substances from the ACS Site, to protect public health and the environment and to prevent interference with remedial action and maintenance work at its property.

NOW, THEREFORE, by this instrument there is created, declared and established for the ACS Site the following land use restriction which shall run with the land and remain in full force and effect in perpetuity from the date hereof, irrespective of any sale, conveyance, alienation or other transfer of any interest or estate in the ACS Site.

I. LAND USE RESTRICTION

A. ACS covenants and encumbers the property described in Exhibit A shall be occupied exclusively for industrial and/or commercial purposes and that no residential use whatsoever of the ACS Site shall be permitted.

B. ACS intends that the Declaration of the Land Use Restriction be established for its own benefit and ACS intends to continue the operations of ACS in full force.

II. NOTICE AND RECORDATION OF THE LAND USE RESTRICTION

This Declaration shall be recorded in the Office of the Recorder, Lake County, Indiana in the chain of title of the ACS property, and by so doing shall constitute notice to the public and to all heirs, successors and assigns of the ACS property.

III. TERMINATION

The Declaration of Land Use Restriction shall be construed as a covenant running with the land and binding upon all parties having any right, title or interest in the ACS Site or any part thereof, and on their heirs, successors and assigns or persons acting under their direction or control. The Declaration of Land Use Restriction shall be terminated only upon the occurrence of one of the following:

A. The United States Environmental Protection Agency or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the ACS Site in writing that an environmental cleanup has been completed to its satisfaction rendering the ACS Site suitable for all uses whatsoever or until such time as the U.S. EPA determines that the ACS Site poses no unacceptable risk for residential use.

B. The Indiana Department of Environmental Management, or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the ACS Site in writing that an environmental cleanup has been completed to its satisfaction rendering the ACS Site suitable for all uses whatsoever or until such time as the IDEM determines that the ACS Site poses no unacceptable risk for residential use.

C. The procedure for clearing the title of this encumbrance, upon the occurrence of the above event shall be that the

owner(s) of the encumbered property may record an affidavit terminating this restrictive covenant and shall attach thereto the written determination or notification described herein as the pre-requisite for termination.

IV. SEVERABILITY

If any provision of this Declaration of Land Use Restriction is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions. All such other provisions shall continue unimpaired in full force and effect.

V. CERTIFICATION

The undersigned persons executing the Declaration of Land Use Restriction on behalf of ACS represent and certify that they are duly authorized and have been fully empowered to execute and to deliver this Land Use Restriction.

IN WITNESS THEREOF, the said owner(s) of record of the real property subject to this Declaration of Land Use Restriction, ACS, acting through its duly authorized representatives, have caused the Declaration of Land Use Restriction to be executed this 14th day of January, 1998.

AMERICAN CHEMICAL SERVICES, INC.

By: _____
Title: Pres. & A.O.S.

By: _____
Title: Sec.

STATE OF INDIANA)
)
COUNTY OF LAKE)

The foregoing instrument was acknowledged before me this 14th day of January 1997 by James Murphy and James Tapo as duly authorized representatives of the American Chemical Services, Inc.

Laura R. DiSanto
Notary Public
Laura R. DiSanto
Printed Name
Lake
County of Residence
My Commission Expires 2/9/97

This instrument was prepared by:

Andrew H. Perellis
E. Lynn Grayson
Seyfarth, Shaw, Fairweather & Geraldson
55 East Monroe Street
42nd Floor
Chicago, Illinois 60603
312/346-8000

SMACS043

EXHIBIT A

Property owned by American Chemical Service, Inc. for which the proceeding deed restrictions apply:

1. Knott Brothers Addition, Part of Lots 19 thru 24.
   Unit 15, Key number 26 0093 0068

2. Knott Brothers Addition, Southwesterly part of Lots 78 thru 82 and all of Lot 83
   Unit 15, Key number 26 0093 0066

3. 420 S. Colfax, Griffith, IN 46319
   Colfax Chemical Sub.
   (8.74 acres) Lot 1, except North 160 ft. of West 272 ft.
   Unit 15, Key number 26 0341 0001

4. Pt. 100 ft. R/W N.W.¼, S.W.¼
   S. 1 T. 35 R.9
   0.093 acre
   Unit 39, Key number 51 0001 0070

5. Knott Brothers Addition, Southwesterly part of lots 84 & 85
   Unit 15, Key Number 26 0093 0065

6. 420 S. Colfax, Griffith, IN 46319
   Pt. N.½, S.E. Westerly of Colfax Ave.
   Northeasterly of C & ERR S. 2, T. 35, R.9
   Cont'g 6 Acre M/L
   Unit 15,. Key Number 26 0003 0026

7. Approx. 421 Avenue D, Griffith, IN 46319
   Pt. S½, SW½, NE¼
   S.2, T.35, R.9
   1.6 Acre
   Unit 15, Key Number 26 0001 0089

8. 420 S. Colfax, Griffith, IN 46319
   Colfax Chemical Sub
   N 160 Ft. of W. 272ft.
   S.2, T.35 R.9
   Unit 15, Key Number 26.0341 0002

smacs042

Kara Gonis + White
4H N. Orleans
Suite 810
Chicago Ill
60610

DECLARATION OF LAND USE RESTRICTION OF REAL PROPERTY

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79938D

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Zarija and Nadzda Djurovic, owners in fee simple of the real estate described below, hereby imposes restrictions on the described real estate located along Colfax Avenue in Griffith, Indiana described in attached Exhibit A.

WHEREAS, Zarija and Nadzda Djurovic ("Djurovics") are the owners of certain real property described in Exhibit A which comprises a portion of the U.S.EPA defined American Chemical Service, Inc. Superfund Site.

WHEREAS, the U.S. EPA has determined that there have been actual or threatened releases of hazardous substances as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. Section 9601 (14) (1991) (CERCLA) from the American Chemical Service, Inc. Site.

97010456

WHEREAS, a Remedial Investigation (RI) has been conducted at the American Chemical Service Site to determine the nature and the extent of any release or threatened release of hazardous substances, pollutants, or contaminants and a Feasibility Study (FS) has been performed to identify and evaluate alternatives for the appropriate remedial action necessary to prevent to mitigate the migration or the release or threatened release of hazardous substances, pollutants or contaminants at or from the American Chemical Service Site.

STATE OF INDIANA
LAKE COUNTY
FILED FOR RECORD
97 FEB 20 AM 11:29
MORRIS W. CARTER
RECORDER

WHEREAS, The U.S. EPA has issued a Record of Decision ("ROD") to address the actual and threatened releases of hazardous substances to and from the American Chemical Service Site.

FILED

FEB 20 1997

SAM ORLICH
AUDITOR LAKE COUNTY

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19.00 Su
CS

WHEREAS, the Djurovics desire to restrict the use of their property within the American Chemical Service Site so as to reduce the potential of any harm whatsoever arising from any actual or threatened releases of hazardous substances from the American Chemical Service Site, to protect public health and the environment and to prevent interference with remedial action and maintenance work at their property.

NOW, THEREFORE, by this instrument there is created, declared and established for the Djurovic property within the American Chemical Service Site described on Exhibit A the following land use restriction, which shall run with the land and remain in full force and effect in perpetuity from the date hereof, irrespective of any sale, conveyance, alienation or other transfer of any interest or estate in that property as described in Exhibit A.

I. LAND USE RESTRICTION

A. The Djurovics hereby covenant and encumber their property described in Exhibit A that no use of the ground water in the shallow aquifer beneath the property as a drinking water source or for other domestic uses shall be made or allowed.

B. The Djurovics hereby further covenant and encumber their property described in Exhibit A that such property shall be occupied exclusively for non-residential purposes.

C. The Djurovics hereby further covenant and encumber their property described in Exhibit A uses of such property shall not interfere with or be detrimental to any remedial components on that property.

II. NOTICE AND RECORDATION OF THE LAND USE RESTRICTION

This Declaration shall be recorded in the Office of the Recorder, Lake County, Indiana in the chain of title of the Djurovic property described in Exhibit A, and by so doing shall constitute notice to the public and to all heirs, successors and assigns of that property.

III. TERMINATION

The Declaration of Land Use Restriction shall be construed as a covenant running with the land and binding upon all parties having any right, title or interest in the Djurovic property described in Exhibit A or any part thereof, and on their heirs, successors and assigns or persons acting under their direction or control. The Declaration of Land Use Restriction shall be terminated only upon the occurrence of the following:

A. The U.S. EPA or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the Djurovic property described in Exhibit A in writing that an environmental cleanup has been completed to its satisfaction rendering the American Chemical Service Site suitable for all uses whatsoever or until such time as the U.S.EPA determines that the American Chemical Service Site poses no unacceptable risk for residential use.

B. The Indiana Department of Environmental Management or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the property described in Exhibit A that an environmental cleanup has been

completed to its satisfaction rendering the property suitable for all uses whatsoever or until such time as the Department of Environmental Management determines that the American Chemical Service Site poses no unacceptable risk for residential use.

c. The procedure for clearing the title of this encumbrance, upon the occurrence of the above event shall be that the owner(s) of the encumbered property may record an affidavit terminating this restrictive covenant and shall attach thereto the written determination or notification described herein as the pre-requisite for termination.

IV. SEVERABILITY

If any provision of this Declaration of Land Use Restriction is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions. All such other provisions shall continue unimpaired in full force and effect.

V. CERTIFICATION

The undersigned persons executing the Declaration of Land Use Restriction on behalf of the Djurovics represent and certify that they are duly authorized and have been fully empowered to execute and to deliver this Land Use Restriction.

IN WITNESS THEREOF, the said owner(s) of record of the real property subject to this Declaration of Land Use Restriction, the Djurovics, acting through its duly authorized representatives, have caused the Declaration of Land Use Restriction to be executed this 4 day of Dec, 1996.

The Djurovics

By: _____
Title: _____

By: Nadezda Djurovic
Title: HD

STATE OF INDIANA)
)
COUNTY OF LAKE)

The foregoing instrument was acknowledged before me this 4 day of December, 1996 by _____ and _____ as duly authorized representatives of the Djurovics.

Joyce A. Furto
Notary Public
Joyce A. Furto
Printed Name
Lake
County of Residence

SMACS049

THE GRANTOR Parmey Associates, Ltd., an Indiana limited partnership

for and in consideration of

DOLLARS, and other good and valuable considerations in hand paid, CONVEY(S) and WARRANT(S) to

Zarija Djurovic of Griffith, Indiana

(The Above Space For Recorder's Use Only)

(NAME AND ADDRESS OF GRANTEE)

the following described Real Estate situated in the County of Lake in the

Part of the Northwest quarter of the Southeast quarter and Part of the Northeast quarter of the Southeast quarter of Section 2, Township 35 North, Range 9 West of 2nd Principal Meridian, described as follows: Beginning at a point on the East line of said Northwest quarter of the Southeast quarter, 805.01 feet North of the Southeast corner of said Northwest quarter of the Southeast quarter, thence West on a line 205 feet North of and parallel to the South line thereof 703.11 feet, thence North parallel to the East line of said Northwest quarter of the Southeast quarter, 100.01 feet; thence East on a line 305 feet North of and parallel to the South line thereof 703.11 feet to the East line of said Northwest quarter of the Southeast quarter, thence East on a line 305 feet North of and parallel to the South line of the Northeast quarter of the Southeast quarter, 216.34 feet to the centerline of Calfax Avenue; thence Southerly on said centerline 107.71 feet; thence West on a line 205 feet North of and parallel to the South line of the Northeast quarter of the Southeast quarter 175.29 feet to the place of beginning; all in the Town of Griffith, Lake County, Indiana.

hereby releasing and waiving all rights under and by virtue of the Homestead Exemption Laws of the State of Illinois

Permanent Real Estate Index Number(s) 01 596 0005 [illegible]

Address(es) of Real Estate 600 Arbogast, Griffith, Indiana

DATED this 9th day of March 19 87

PLEASE PRINT OR TYPE NAME(S) BELOW SIGNATURE(S)

(SEAL) Parmey Associates, Ltd. (SEAL)
By Parmey Corporation
General Partner

(SEAL) by (SEAL)
Corporate Secretary President

State of Illinois, County of Cook ss. I, the undersigned, a Notary Public in and for said County, in the State aforesaid, DO HEREBY CERTIFY that Robert Pazdro

personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument as his free and voluntary act, for the uses and purposes therein set forth, including the release and waiver of the right of homestead.

Given under my hand and official seal, this 9th day of March 19 87

Commission expires December 22 19 89

Notary Public L. M. Saterous

This instrument was prepared by Christopher M. Saterous 102 N. Emerson Arlington Hts. IL 60005
(Name and Address)

MAIL TO (Name, Address, City, State and Zip)

SEND SUBSEQUENT TAX BILLS TO (Name, Address, City, State and Zip)

RECORDER'S OFFICE BOX NO.

EXHIBIT A

DECLARATION OF LAND USE RESTRICTION OF REAL PROPERTY

This Declaration is made by CSX Transportation, Inc. ("CSXT"), a Virginia corporation, as owner in fee simple of real estate containing 4.03 acres of land, more or less, described in Exhibit A ("CSXT Property"), forming a part of the real estate commonly known by street address as 420 South Colfax Road, Griffith, Indiana, which comprises a portion of the American Chemical Service Superfund Site ("ACS Site"); and

WHEREAS, the United States Environmental Protection Agency ("U.S. EPA") has determined that there has been an actual or threatened release of hazardous substances as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601(14) (1991) ("CERCLA")) from the ACS Site; and

WHEREAS, a Remedial Investigation ("RI") has been conducted at the ACS Site for the purpose of determining the nature and the extent of any release or threatened release of hazardous substances, pollutants or contaminants, and a Feasibility Study ("FS") has been performed for the purpose of identifying and evaluating alternatives for remedial action regarding the prevention or mitigation of the migration, if any, or the release or threatened release of hazardous substances, pollutants or contaminants, if any, at or from the ACS Site; and

WHEREAS, the U.S. EPA has issued a Record of Decision ("ROD") to address actual and threatened releases of hazardous substances to and from the ACS Site; and

MAR 11 1994

WHEREAS, CSXT intends to restrict the use of the CSXT Property so as to reduce the potential for harm arising from alleged actual or threatened releases of hazardous substances from the ACS Site, and to protect public health and the environment;

NOW, THEREFORE, by this instrument there is created, declared and established for the CSXT Property the following land use restriction which shall run with the land and remain in full force and effect in perpetuity from the date hereof, unless the restriction is terminated in accordance with the termination provisions hereof, irrespective of any sale, conveyance, alienation or other transfer of any interest or estate in the CSXT Property.

I. LAND USE RESTRICTION

A. CSXT covenants and declares that the use and occupancy of the CSXT Property hereafter shall be restricted to industrial and commercial purposes and that hereafter the CSXT Property, including groundwater thereunder, shall not be used for residential purposes, until and unless this declaration is terminated in accordance with the provisions for termination set forth below.

B. This declaration is not intended and shall not be construed to be an acknowledgement or admission by CSXT (i) of any release or threatened release of any substance to or from said CSXT Property, or (ii) of an imminent and substantial endangerment to the public health or welfare or the environment,

or (iii) of liability or responsibility for any purpose or in any respect whatsoever.

C. This declaration is made for the benefit of CSXT and nothing herein contained is intended to modify or affect CSXT's rights as lessor under the current lease of the CSXT Property under which American Chemical Services, Inc. is lessee, provided that CSXT hereby further declares that said lease is not for residential use purposes, but only for industrial and/or commercial use purposes.

II. NOTICE AND RECORDATION OF THE LAND USE RESTRICTION

This Declaration of Land Use Restriction shall be recorded in the Office of the Recorder, Lake County, Indiana in the chain of title of the CSXT Property, and by so doing shall constitute notice to the public, anyone hereafter having the right to occupy the CSXT Property and to all successors and assigns of the CSXT Property.

III. TERMINATION

This Declaration shall be construed as a covenant running with the land and binding on all parties having any right, title or interest in the CSXT Property or any part thereof, and on their employees, agents, successors and assigns or persons acting under their direction or control. This Declaration of Land Use Restriction shall be terminated only upon the occurrence of one of the following:

A. The U.S. EPA or its successor agency or assigns with jurisdiction over such matters, (i) confirms in writing

that an environmental cleanup on the ACS Site has been completed, in compliance with current regulatory standards, rendering the CSXT Property suitable for residential use, or (ii) determines that the CSXT Property poses no unacceptable risk for residential use; or

B. The Indiana Department of Environmental Management ("IDEM"), or its successor agency or assigns with jurisdiction over such matters, (i) confirms in writing that an environmental cleanup on the ACS Site has been completed, in compliance with current regulatory standards, rendering the CSXT Property suitable for residential use, or (ii) determines that the CSXT Property poses no unacceptable risk for residential use.

The procedure for clearing the title of this restriction, upon the occurrence of any one of the above events, shall be that the owner(s) of the restricted use property may record an affidavit terminating this restrictive covenant and shall attach thereto the written confirmation or determination described herein as the pre-requisite for termination.

IV. SEVERABILITY

If any provision of this Declaration is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of other provisions hereof; and all such other provisions shall continue in force and effect.

V. CERTIFICATION

The undersigned persons executing this Declaration on behalf of CSXT represent and certify that they are duly authorized and are fully empowered to execute and to deliver this Declaration of Land Use Restriction.

IN WITNESS WHEREOF, CSXT, as the owner of record of the real estate subject to this Declaration of Land Use Restriction, acting through its duly authorized representatives, have caused this instrument to be executed this 4th day of March, 1994.

CSX TRANSPORTATION, INC.

By: Gerald L. Nichols

Name: Gerald L. Nichols

Title: Sr. Vice President

ATTEST: SEAL

By: Joyce A. Dolan

Name: Joyce A. Dolan

Title: Assistant/Corporate Secretary

STATE OF FLORIDA)
) SS.
COUNTY OF DUVAL)

I, Robert L. Wheaton, a Notary Public of the State of Florida and the County of Duval, do certify that, on the date below, before me in said County came Gerald L. Nichols, (✓ to me know personally or ( ) satisfactorily proven to me by current evidence (_____) to be the person whose name is subscribed to the above Declaration of Land Use Restriction of Real Property, who, being by me first duly sworn, did make oath, acknowledge and say that: s/he resides in Jacksonville, Duval County, Florida; s/he is Sr. Vice President of CSX Transportation, Inc., the corporation described in and which executed said instrument; s/he is fully informed of the contents of the instrument; s/he knows the seal of said corporation; the seal affixed to said instrument is such seal; it was so affixed by authority of the Board of Directors of said corporation; s/he signed his/her name thereto for said corporation pursuant to such authority; said instrument is the free act and deed of said corporation; and the conveyance herein is not part of a transaction, sale, lease, exchange or other transfer or conveyance of all or substantially all of the property and/or assets of the Grantor.

IN WITNESS WHEREOF, I hereunto set my hand and official seal, this 4th day of March, 1994.

My commission expires on:

Robert L. Wheaton
Notary Public, State of Florida
Commission No. CC 338168
My Commission Expires 12/07/97
Bonded Through Fla. Notary Service & Bonding Co.

Robert L. Wheaton (SEAL)
Notary Public

This instrument was prepared by:

Marvin F. Metge
Gorham, Metge, Bowman & Hourigan
300 West Washington, Suite 1500
Chicago, Illinois 60606
(312) 236-2713

EXHIBIT A

Description of property at: Griffith, Indiana

All that certain land situate in Section 2, Township 35 North, Range 9 West, Lake County, Indiana, more fully described as follows:

BEGINNING at the point of intersection of the west line of Colfax Avenue with the south line of Parcel 'C' as described in exchange deed dated February 19, 1925, between the Chesapeake and Ohio Railway Company and the Grand Trunk Western Railway Company, recorded in Deed Book 354, Page 381; thence in a westerly direction along the south line of Parcel 'C' a distance of 362 ft., more or less, to a corner of Parcel 'C'; thence continuing along the south line of Parcel 'C' in a northwesterly direction a distance of 404 ft., more or less, to the point of intersection of the south line of Parcel 'C' with a line perpedicular to the centerline of the former Chesapeake and Ohio Railway Company's main line track at Valuation Station 7952+17.36; thence South 25° 06' 30" West along said perpendicular line a distance of 333 ft., more or less, to the northwest corner of lands conveyed by the Chesapeake and Ohio Railway Company to American Chemical Service, Inc., dated October 10, 1967; thence with the north line of the American Chemical lands, South 64° 53' 30" East a distance of 761.36 ft. to the west line of Colfax Avenue; thence with the west line of Colfax Avenue, North 25° 06' 30" East a distance of 300 ft., more or less, to the **POINT OF BEGINNING.**

STATE OF INDIANA
LAKE COUNTY
FILED FOR RECORD

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DECLARATION OF LAND USE RESTRICTION OF REAL PROPERTY

American Chemical Services, Inc., an Indiana Corporation, owner in fee simple of the real estate described below, hereby imposes restrictions on the described real estate located at or about 420 South Colfax Avenue in Griffith, Indiana more particularly described in attached Exhibit A.

WHEREAS, American Chemical Service, Inc. ("ACS") is the owner of certain real property described in Exhibit A which comprises a portion of the U.S.EPA defined American Chemical Service, Inc. Superfund Site ("ACS Site").

WHEREAS, the U.S. EPA has determined that there have been actual or threatened releases of hazardous substances as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. Section 9601 (14) (1991) (CERCLA) from the ACS Site.

WHEREAS, a Remedial Investigation (RI) has been conducted at the ACS Site to determine the nature and the extent of any release or threatened release of hazardous substances, pollutants, or contaminants and a Feasibility Study (FS) has been performed to identify and to evaluate alternatives for the appropriate remedial action necessary to prevent or to mitigate the migration or the release or threatened release of hazardous substances, pollutants or contaminants at or from the ACS Site.

WHEREAS, The U.S. EPA has issued a Record of Decision ("ROD") to address the actual and threatened releases of hazardous substances to and from the ACS Site.

WHEREAS, the American Chemical Service, Inc. desires to restrict the use of the property within the ACS Site so as to reduce the potential of any harm whatsoever arising

FILED
DEC 17 1997
SAM ORLICH
AUDITOR LAKE COUNTY

1014

from any actual or threatened releases of hazardous substances from the ACS Site, to protect public health and the environment and to prevent interference with remedial action and maintenance work at their property.

NOW, THEREFORE, by this instrument there is created, declared and established for the American Chemical Service, Inc. property within the ACS Site described on Exhibit A the following land use restriction, which shall run with the land and remain in full force and effect in perpetuity from the date hereof, irrespective of any sale, conveyance, alienation or other transfer of any interest or estate in that property as described in Exhibit A.

I. LAND USE RESTRICTION

A. American Chemical Service, Inc. hereby covenants and encumbers its property described in Exhibit A so that no use of the ground water from beneath the property as a drinking water source or for other domestic uses shall be made or allowed.

B. American Chemical Service, Inc. further hereby covenants and encumbers its property described in Exhibit A so that no use of the ground water from beneath that property for irrigation shall be made or allowed.

II. NOTICE AND RECORDATION OF THE LAND USE RESTRICTION

This Declaration shall be recorded in the Office of the Recorder, Lake County, Indiana in the chain of title of the American Chemical Service, Inc. property described in Exhibit A, and by so doing shall constitute notice to the public and to all heirs, successors and assigns of that property.

III. TERMINATION

The Declaration of Land Use Restriction shall be construed as a covenant running with the land and binding upon all parties having any right, title or interest in the American Chemical Service, Inc. property described in Exhibit A or any part thereof, and on their heirs, successors and assigns or persons acting under their direction or control. The Declaration of Land Use Restriction shall be terminated only upon the occurrence of the following:

A. The U.S. EPA or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the American Chemical Service, Inc. property described in Exhibit A in writing that an environmental cleanup has been completed to its satisfaction rendering the ACS Site suitable for all uses whatsoever or until such time as the U.S.EPA determines that the ACS Site poses no unacceptable risk for residential use.

B. The Indiana Department of Environmental Management or its successor agency or assigns with jurisdiction over such matters, notifies the owner(s) of the property described in Exhibit A that an environmental cleanup has been completed to its satisfaction rendering the property suitable for all uses whatsoever or until such

time as the Department of Environmental Management determines that the ACS Site poses no unacceptable risk for residential use.

c. The procedure for clearing the title of this encumbrance, upon the occurrence of the above event shall be that the owner(s) of the encumbered property may record an affidavit terminating this restrictive covenant and shall attach thereto the written determination or notification described herein as the pre-requisite for termination.

IV. SEVERABILITY

If any provision of this Declaration of Land Use Restriction is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions. All such other provisions shall continue unimpaired in full force and effect.

V. CERTIFICATION

The undersigned persons executing the Declaration of Land Use Restriction on behalf of American Chemical Service, Inc. represent and certify that they are duly authorized and have been fully empowered to execute and to deliver this Land Use Restriction.

IN WITNESS THEREOF, the said owner(s) of record of the real property subject to this Declaration of Land Use Restriction, American Chemical Service, Inc., acting through its duly authorized representatives, have caused the Declaration of Land Use Restriction to be executed this 2 day of DECEMBER, 1997.

American Chemical Service, Inc.

By: James Carpo
Title: President

By: James T Murphy
Title: VP

STATE OF INDIANA)
)
COUNTY OF LAKE)

The foregoing instrument was acknowledged before me this 2 day of DEC, 1997 by JAMES CARPO and JAMES MURPHY as duly authorized representatives of American Chemical Service, Inc.

Notary Public
MICHAEL O. BIRGO
Printed Name
LAKE
County of Residence

smacs306.doc

EXHIBIT A

Property owned by American Chemical Service, Inc. for which the proceeding deed restrictions apply:

1. Knott Brothers Addition, Part of Lots 19 thru 24.
   Unit 15, Key number 26 0093 0068

2. Knott Brothers Addition, Southwesterly part of Lots 78 thru 82 and all of Lot 83
   Unit 15, Key number 26 0093 0066

3. 420 S. Colfax, Griffith, IN 46319
   Colfax Chemical Sub.
   (8.74 acres) Lot 1, except North 160 ft. of West 272 ft.
   Unit 15, Key number 26 0341 0001

4. Pt. 100 ft. R/W N.W.¼, S.W.¼
   S. 1 T. 35 R.9
   0.093 acre
   Unit 39, Key number 51 0001 0070

5. Knott Brothers Addition, Southwesterly part of lots 84 & 85
   Unit 15, Key Number 26 0093 0065

6. 420 S. Colfax, Griffith, IN 46319
   Pt. N.½, S.E. Westerly of Colfax Ave.
   Northeasterly of C & ERR S. 2, T. 35, R.9
   Conl'g 6 Acre M/L
   Unit 15,. Key Number 26 0003 0026

7. Approx. 421 Avenue D, Griffith, IN 46319
   Pt. S½, SW½, NE¼
   S.2, T.35, R.9
   1.6 Acre
   Unit 15, Key Number 26 0001 0089

8. 420 S. Colfax, Griffith, IN 46319
   Colfax Chemical Sub
   N 160 Ft. of W. 272ft.
   S.2, T.35 R.9
   Unit 15, Key Number 26 0341 0002

FORM PRESCRIBED BY STATE BOARD OF ACCOUNTS

GENERAL FOR

RECEIPT

№ 2258

Recorder

Name of Unit, Agency, Board or Department

#9708623 Fund

, Ind. 12-17 , 1997

Received From Eichhorn & Eichhorn $ 200

The Sum of Twenty 00 D

on Account of

Payment Type / / #62509

Cash Check MO

Authorized Signature

APPENDIX B

Human Health Risk Assessment
Estimation of Air Emission and Dispersion

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1.0 ESTIMATION OF AIR EMISSION AND DISPERSION B-1

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Table B-2: Vapor Flux from Soil to Ambient Air
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Table B-11: Modeled Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Maximum 8-Hour Average, 100 Feet from Source
Table B-12: Comparison of Monitored Air Concentrations to Modeled Air Concentrations

FIGURE

Figure B-1: Wind Rose for South Bend, Indiana

ATTACHMENTS

Attachment 1: ISCST3 Model Output File for Emissions Under Routine Conditions
Attachment 2: ISCST3 Model Output File for Emissions During Underground Utility Maintenance Excavation
Attachment 3: ISCST3 Model Output File for Emissions During Construction

Attachment 4: ISCST3 Model Output File for Emissions During Pretreatment/Materials Handling Study (Focus 1997)

1.0 ESTIMATION OF AIR EMISSION AND DISPERSION

1.1 Vapor Emission from Unsaturated Soil

The annual average vapor flux from unsaturated soil is conservatively estimated using an unsteady-state model derived by Jury et al. (1983, 1990). This approach assumes that volatile substances are present in the soil to a finite depth and is provided in USEPA's *Soil Screening Guidance* (USEPA 1996). The *Soil Screening Guidance* also recognizes that more refined models are available that account for the presence of a cover. The Jury model is given by:

$$J_v = C_{s,0}\sqrt{\frac{D_E}{\pi T}}\cdot[1-\exp(-d_s^2/4D_E T)]\cdot\frac{kg}{10^3 g}\cdot\frac{10^4 cm^2}{m^2}$$

$$D_E = \frac{D_G H + D_L}{\rho_b K_d + \theta_w + \theta_a H}$$

$$D_G = D_{air}\cdot\frac{\theta_a^{10/3}}{n^2}$$

$$D_L = D_{water}\cdot\frac{\theta_w^{10/3}}{n^2}$$

where:

J_v	=	average vapor flux over period T (mg-chemical/m^2-s)
$C_{s,0}$	=	initial chemical concentration in soil (mg-chemical/kg-soil)
ρ_b	=	soil bulk density (g-soil/cm^3-soil)
D_E	=	effective diffusion coefficient (cm^2/s)
T	=	exposure interval (s)
d_s	=	depth of soil contamination at t=0 (cm)
D_G	=	effective gas-phase diffusion coefficient (cm^2/s)
D_L	=	effective liquid-phase diffusion coefficient (cm^2/s)
H	=	Henry's law constant (unitless)
K_d	=	soil-to-water partition coefficient (L-water/kg-soil)

D_{air} = diffusion coefficient in air (cm^2/s)
D_{water} = diffusion coefficient in water (cm^2/s)
θ_a = air-filled soil porosity (L-air/L-soil)
θ_w = water-filled soil porosity (L-water/L-soil)
n = soil porosity (L-pore/L-soil)

The values proposed by USEPA (USEPA 1996) for chemical-specific parameters and soil-specific parameters are used as default values in calculating J_v unless Site-specific data are available (see Tables B-1 through B-6).

USEPA guidance (1996) recommends the use of this volatilization model where the soil concentration of a substance is at or below the soil saturation concentration of the substance (C_{sat}). The soil saturation concentration is defined as the concentration at which the adsorptive limits of the soil particles and the solubility limits of the available soil moisture have been reached. C_{sat} is given by:

$$C_{sat} = K_d\, s + \left(s\theta_w + sH\theta_a \right)/\rho_b$$

where:

K_d = soil-to-water partition coefficient (L-water/kg-soil)
s = solubility of a substance in water (mg-chemical/L-water)
θ_w = soil water content (L-water/L-soil)
H = Henry's law constant (unitless)
θ_a = air-filled soil porosity (L-air/L-soil)
ρ_b = soil bulk density (kg-soil/L-soil)

For soil concentrations greater than C_{sat}, the model is expected to overestimate vapor flux (USEPA 1996).

1.2 Vapor Emission from Surface Water and Exposed Ground Water

The steady-state emission of chemical from ground water pooled on soil surface is estimated using an overall mass transfer coefficient that accounts for mass transfer of the chemical

through the water-air interfacial films. The flux of chemical through the water-air interface is given by:

$$J_L = K_L \cdot C_{gw} \cdot \frac{L}{10^3\ cm^3} \cdot \frac{10^4\ cm^2}{m^2}$$

$$\frac{1}{K_L} = \frac{1}{k_L} + \frac{1}{k_G H}$$

where:

J_L	=	steady-state vapor flux (mg-chemical/m^2-s)
K_L	=	overall mass transfer coefficient (cm/s)
C_{gw}	=	chemical concentration in ground water (mg-chemical/L-water)
k_L	=	liquid-phase mass transfer coefficient (cm/s)
k_G	=	gas-phase mass transfer coefficient (cm/s)
H	=	Henry's law constant (unitless)

The method for estimating the liquid-phase and gas-phase mass transfer coefficients is from USEPA (1992), as follows:

$$k_{Li} = \left(\frac{MW_{O_2}}{MW_i}\right)^{0.5} \left(\frac{T}{298}\right) \left(k_{L,O_2}\right)$$

$$k_{Gi} = \left(\frac{MW_{H_2O}}{MW_i}\right)^{0.335} \left(\frac{T}{298}\right)^{1.005} \left(k_{G,H_2O}\right)$$

where:

k_{Li}	=	liquid-phase mass transfer coefficient for chemical i (cm/s)
k_{Gi}	=	gas-phase mass transfer coefficient for chemical i (cm/s)
MW_{O2}	=	molecular weight of oxygen (32 g/mole)
MW_{H2O}	=	molecular weight of water (18 g/mole)
MW_i	=	molecular weight of chemical i (g/mole)
T	=	absolute temperature (°K)
$k_{L,O2}$	=	liquid-phase mass transfer coefficient for oxygen (0.002 cm/s)

$k_{G,H2O}$ = gas-phase mass transfer coefficient for water vapor at 25°C (0.833 cm/s)

1.3 Vapor Emission from Covered Ground Water

A one-dimensional steady-state diffusion model using Fick's Law was employed for estimating the theoretical vapor flux from substances in ground water below a layer of cover soil. The vapor flux is obtained from the concentration gradient through a capillary fringe and unsaturated soil:

$$J = \frac{1}{\frac{L_{cf}}{D_{L'}} + \frac{L_a}{H \cdot D_G}} \cdot \left(C_w \cdot \frac{1000\ L}{m^3} - C_a\right) \cdot \frac{m^2}{10^4\ cm^2}$$

$$D_G = D_{air} \cdot \frac{\theta_a^{10/3}}{n^2}$$

$$D_{L'} = D_{water} \cdot \frac{n^{10/3}}{n^2}$$

where:

- J = steady-state vapor flux (mg-chemical/m^2-s)
- C_w = initial chemical concentration in water (mg-chemical/L-water *1000 L/m^3)
- C_a = initial chemical concentration in air at ground surface (mg-chemical/m^3-air)
- D_G = effective gas-phase diffusion coefficient (cm^2/s)
- $D_{L'}$ = effective liquid-phase diffusion coefficient (cm^2/s)
- H = Henry's law constant (unitless)
- L_{cf} = thickness of capillary fringe (m)
- L_a = thickness of unsaturated soil above capillary fringe (m)
- D_{air} = diffusion coefficient in air (cm^2/s)
- D_{water} = diffusion coefficient in water (cm^2/s)
- θ_a = air-filled soil porosity (L-air/L-soil)
- n = total soil porosity (L-pore/L-soil)

1.4 Soil Particulate Emission

The particulate emission model for predicting emissions from undisturbed surface soil is based on the suspension of surface soil by wind erosion. Particulate emission from wind erosion is estimated using the "unlimited reservoir" wind erosion model (USEPA 1996, 1992), which is given by:

$$J_{10} = 0.036\ (1-G)\left(\frac{U_m}{U_t}\right)^3 F(x)\cdot\frac{kg}{10^3 g}\cdot\frac{hour}{3600\ sec}$$

where:

J_{10}	=	annual average flux of respirable soil particles (kg-soil/m^2-s)
0.036	=	correlation coefficient for the respirable fraction
G	=	fraction of soil surface covered; e.g., by vegetation, pavement (unitless)
U_m	=	mean annual wind speed (m/s)
U_t	=	threshold value of wind speed at 7 meters (m/s)
F(x)	=	function dependent on (U_m/U_t), USEPA (1992)

This equation calculates the emission flux of respirable soil particles, which are 10 μm in diameter and smaller (i.e., PM_{10}). For this analysis, it is assumed that the concentration of a substance in respirable soil particles is the same as that in the bulk surface soil. The values recommended by USEPA (1996) for soil-specific parameters are used in the calculation.

Particulate emission resulting from potential on-facility excavation activities is conservatively estimated using empirical data compiled by USEPA (1995a) which pertain to dust emission from "heavy construction operations". The data indicate that dust emission from "heavy construction operations" is 1.2 tons per acre of construction per month of activity (or 1 x 10^{-7} kg-soil/m^2-sec) and consists of particles that are 30 μm in diameter and smaller.

1.5 Atmospheric Dispersion

Except under excavation conditions, air dispersion from the exposure areas is estimated using USEPA's Industrial Source Complex (ISCST3) model (USEPA 1995a). ISCST3 is an advanced steady-state Gaussian plume model that calculates chemical concentrations at specific downwind locations as a function of wind speed, atmospheric stability, temperature gradient, mixing height and downwind distance. Using ISCST3, the output is a dispersion factor, which is an annual average air concentration in milligrams per cubic meter (mg/m^3) for a unit emission flux (i.e., 1 g/m^2-s). These dispersion factors can be converted to units of kg/m^3 per

kg/m^2-s by multiplying by a factor of 10^{-3} g/mg. The air concentration of a chemical in air is calculated by multiplying the dispersion factor given by ISCST3 and the flux of the chemical from soil (or from water).

ISCST3 utilizes hourly meteorological data records to define the conditions for dispersion. To generate the required input meteorological data files, surface meteorological and upper air data files were downloaded from USEPA's SCRAM electronic bulletin board. Surface meteorological data for the Michiana airport in South Bend, Indiana were used. For upper air data, the closest station for which the appropriate data are available is the Bishop airport in Flint, Michigan. A wind rose plot for the South Bend surface air data (NCDC 1997) is shown in Figure B-1. As shown on this plot, the direction of the wind across the Site is towards the residents in Area 5A approximately 29% of the time and towards Area 6 approximately 21% of the time.

Other major assumptions used in the ISCST3 modeling are:

- The emission source is represented as a non-buoyant, zero-momentum area source;
- Suspended particles from the source remain suspended before reaching the receptor (i.e., there is negligible deposition and resuspension); and
- The physical setting of the facility and its immediate surroundings can be modeled as a rural environment with no significant obstructions (e.g., tall buildings, abrupt topography).

For each area source, dispersion factors were developed using ISCST3 for discrete on-facility and off-facility receptor locations. The ISCST3 output files for the dispersion factors used in the revised Baseline Risk Assessment are provided in Attachments 1 through 3. Off-facility receptors are assumed to be located near the intersection of Colfax Avenue and Reder Road for Area 5A, along the Grand Trunk Railroad right-of-way, and along the Chicago & Erie Railroad right-of-way for Area 6. For Areas 1, 2, 3, 4A, and 4B, between six and nine discrete receptor locations were evenly distributed throughout each of the areas. The on-facility workers in each area are assumed to move freely throughout the area, and the applicable area-wide dispersion factor is estimated from the average of the dispersion factors developed for each receptor location within the area.

To evaluate atmospheric dispersion during underground utility maintenance and construction activities, a simple "box" model was used for evaluating exposures of on-Site excavation workers, and USEPA's ISCST3 model was used for off-Site residents as described

above. The "box" model allows for a screening level calculation of air concentrations at the location of the excavation worker, based on the following relationship:

$$CA = \frac{(F)\,(L)}{(V)\,(H)}$$

where:

CA = Chemical concentration in air (ug/m^3)
F = Chemical vapor flux ($ug/(m^2\text{-}s)$)
L = Length of excavation zone (m)
V = Wind speed (m/s)
H = Height of box (m)

In this analysis, L is set at 5 meters for utility maintenance and 30 meters for construction excavation; V is set at 4.5 m/s, and H is set at the height of a typical receptor, 2 m.

1.6 Estimated Ambient Air Concentrations

Ambient air concentrations for each receptor in the revised Baseline Risk Assessment were calculated by combining the emission estimates for each source area with the dispersion values specific to each source area/receptor area combination. For each of the following source areas, emissions were estimated from the media identified in Section 3.2:

- Area 1: particulate and vapors from soil during routine operations; vapors from exposed ground water and soil during excavation for utility maintenance;
- Area 2: particulate and vapors from soil during routine operations and excavation for utility maintenance and construction;
- Area 3: particulate and vapors from soil during routine operations and excavation for utility maintenance and construction;
- Area 4A: vapors from surface water in the wetlands;
- Area 4B: vapors from covered ground water during routine operations; vapors from exposed ground water during excavation; and
- Area 5B: vapors exposed ground water during excavation for utility maintenance.

Ambient air concentrations for long term exposures (i.e., routine workers, trespassers, and residents) were calculated by combining the emissions from each source area and medium with the dispersion to each receptor location. Ambient air concentrations for long-term exposures used in the baseline risk assessment were based on the total contribution from all areas.

For short-term activities involving excavation (i.e., utility maintenance, construction), ambient air concentrations from the excavation were estimated for the worker involved in the excavation and for off-Site residents. These receptors are expected to have higher exposures during excavation than routine workers or trespassers.

1.7 Comparison of Modeled Concentrations to Air Monitoring

Results of air emission and dispersion modeling were compared to ambient air monitoring conducted at the Site during the Pretreatment/Materials Handling Study conducted in July 1997 (Focus 1997). During the study, daily eight-hour ambient air samples were collected in Area 2, approximately 100 feet upwind and 100 feet downwind of the material handling activities (i.e., on-Site excavation, trenching, and screening). As described in Focus (1997), sampling was conducted with Summa canisters set to intake a constant sample flow rate for eight hours of sampling time; the sample collected was therefore a compoSite sample of air for the eight hour span. Samples were analyzed using EPA Method TO14.

Modeling was conducted consistent with the data and approaches used in the revised Baseline Risk Assessment, and approximating the conditions that existed during the study. Thus, vapor emissions from Area 2 were estimated using the model for emissions from unsaturated soil. All subsurface (i.e., two to ten feet below ground surface) soil concentration data available for Area 2 were used to estimate emissions. Two summary statistics for soil concentration were applied in the air emission calculations: (1) maximum soil concentrations in Area 2, and (2) the lower of the maximum and 95% UCL soil concentrations in Area 2. The risk assessment generally used the lower of the maximum and 95% UCL soil concentrations to estimate emissions, but used the maximum soil concentrations to calculate the bounding estimates discussed in Section 5.3 (Uncertainty Analysis). For comparison to the Focus results, dispersion was estimated with the ISCST3 model assuming a source area size of 20 meters by 30 meters, for eight receptors located approximately 100 feet from the source in all directions of the compass. The ISCST3 model used surface and upper air data described in previous sections for the Michiana airport in South Bend, Indiana, and the Bishop airport in Flint, Michigan, respectively. The ISCST3 output file is provided in Attachment 4.

For each chemical detected in air samples from the Focus (1997) study, the maximum monitored air concentration was compared to the highest eight-hour average modeled ambient

air concentrations. Modeled ambient air concentrations based on maximum Area 2 soil concentrations ranged from approximately 5 to 200 times the maximum measured ambient air concentrations. Modeled ambient air concentrations based on the lower of the maximum or 95% UCL soil concentrations ranged from 0.9 to 28 times the maximum measured ambient air concentrations. Thus, ambient air concentrations estimated in the risk assessment with ISCST3 are likely to be conservative estimates of potential concentrations.

2.0 REFERENCES

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TABLES

Physical/Chemical Parameter Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	KOC L/KG VALUE	R	N	KD L/KG VALUE	R	N	HENRY UNITLESS VALUE	R	N	DIFFAIR CM2/SEC VALUE	R	N	DIFFWATER CM2/SEC VALUE	R	N	MW G/MOL VALUE	R	N	SOL MG/L VALUE	R	N	VP MM/HG VALUE	R	N
VOC	1,1,1-Trichloroethane	1.10E+02	44					7.05E-01	44		0.078	44		8.80E-06	44		1.33E+02	1		1.33E+03	44		1.23E+02	2	
VOC	1,1,2,2-Tetrachloroethane	9.33E+01	44					1.41E-02	44		0.071	44		7.90E-06	44		1.68E+02	1		2.97E+03	44		5.00E+00	2	
VOC	1,1,2-Trichloroethane	5.01E+01	44					3.74E-02	44		0.078	44		8.80E-06	44		1.33E+02	1		4.42E+03	44		3.00E+01	2	
VOC	1,1-Dichloroethane	3.16E+01	44					2.30E-01	44		0.0742	44		1.05E-05	44		9.90E+01	1		5.06E+03	44		1.82E+02	2	
VOC	1,1-Dichloroethene	5.89E+01	44					1.07E+00	44		0.09	44		1.04E-05	44		9.69E+01	1		2.25E+03	44		6.00E+02	2	
VOC	1,2,4-Trimethylbenzene							2.31E-01	1											5.70E+01	1		1.00E+00	1	
VOC	1,2-Dichloroethane	1.74E+01	44					4.01E-02	44		0.104	44		9.90E-06	44		9.90E+01	1		8.52E+03	44		6.40E+01	2	
VOC	1,2-Dichloroethene (total)	5.00E+01		28				2.30E-01		28	0.0707		28	9.18E-06		50	9.69E+01		52	8.03E+03		28	3.26E+02	3	
VOC	1,2-Dichloropropane	4.37E+01	44					1.15E-01	44		0.0782	44		8.73E-06	44		1.13E+02	1		2.80E+03	44		4.20E+01	1	
VOC	1,3,5-Trimethylbenzene																			2.00E+01	1	55	1.00E+00	1	
VOC	2-Butanone							1.90E-03	1		0.084616		50	9.18E-06		50	7.21E+01	1					7.75E+01	2	
VOC	2-Hexanone							7.15E-02	1		0.084616		50	9.18E-06		50	1.00E+02	1		3.50E+04	1		2.00E+00	1	
VOC	4-Methyl-2-pentanone							6.09E-04	1		0.084616		50	9.18E-06		50	1.00E+02	1		1.91E+04	1		2.00E+01	4	
VOC	Acetone	5.75E-01	44					1.59E-03	44		0.124	44		1.14E-05	44		5.81E+01	1		1.00E+06	44		2.70E+02	2	
VOC	Benzene	5.89E+01	44					2.28E-01	44		0.088	44		9.80E-06	44		7.81E+01	1		1.75E+03	44		9.52E+01	2	
VOC	Bromodichloromethane	5.50E+01	44					6.56E-02	44		0.0298	44		1.06E-05	44		1.64E+02	1		6.74E+03	44		5.00E+01	1	
VOC	Carbon Disulfide	4.57E+01	44					1.24E+00	44		0.104	44		1.00E-05	44		7.61E+01	1		1.19E+03	44		3.60E+02	2	
VOC	Carbon Tetrachloride	1.74E+02	44					1.25E+00	44		0.078	44		8.80E-06	44		1.54E+02	1		7.93E+02	44		9.00E+01	2	
VOC	Chlorobenzene	2.19E+02	44					1.52E-01	44		0.073	44		8.70E-06	44		1.13E+02	1		4.72E+02	44		1.17E+01	2	
VOC	Chloroethane							2.83E-01	1		0.084616		50	9.18E-06		50	6.45E+01	1		5.74E+03	1		1.01E+03	1	
VOC	Chloroform	3.98E+01	44					1.50E-01	44		0.104	44		1.00E-05	44		1.19E+02	1		7.92E+03	44		1.51E+02	2	
VOC	Chloromethane										0.084616		50	9.18E-06		50	5.05E+01	1					4.31E+03	2	
VOC	cis-1,2-Dichloroethene	3.55E+01	44					1.67E-01	44		0.0736	44		1.13E-05	44		9.69E+01	1		3.50E+03	44		2.08E+02	2	
VOC	Ethyl Benzene	3.63E+02	44					3.23E-01	44		0.075	44		7.80E-06	44		1.06E+02	1		1.69E+02	44		7.00E+00	2	
VOC	m,p-xylene	3.98E+02		49				3.08E-01		49	0.07345		49	8.12E-06		49	1.06E+02		51	1.73E+02		49	1.00E+01		51, 65
VOC	Methylene Chloride	1.17E+01	44					8.98E-02	44		0.101	44		1.17E-05	44		8.49E+01	1		1.30E+04	44		3.62E+02	2	
VOC	ortho-xylene	3.63E+02	44					2.13E-01	44		0.087	44		1.00E-05	44		1.06E+02		51	1.78E+02	44		1.00E+01		51, 65
VOC	p-Cymene																			3.40E+02	1	55	1.00E+00	1	
VOC	Styrene	7.76E+02	44					1.13E-01	44		0.071	44		8.00E-06	44		1.04E+02	1		3.10E+02	44		5.00E+00	1	
VOC	Tetrachloroethene	1.55E+02	44					7.54E-01	44		0.072	44		8.20E-06	44		1.66E+02	1		2.00E+02	44		1.78E+01	2	
VOC	Tetrahydrofuran										0.084616		50	9.18E-06		50									
VOC	Toluene	1.82E+02	44					2.72E-01	44		0.087	44		8.60E-06	44		9.21E+01	1		5.26E+02	44		2.81E+01	2	
VOC	trans-1,2-Dichloroethene	5.25E+01	44					3.85E-01	44		0.0707	44		1.19E-05	44		9.69E+01	1		6.30E+03	44		3.24E+02	2	
VOC	Trichloroethene	1.66E+02	44					4.22E-01	44		0.079	44		9.10E-06	44		1.31E+02	1		1.10E+03	44		5.79E+01	2	
VOC	Vinyl Chloride	1.86E+01	44					1.11E+00	44		0.106	44		1.23E-06	44		6.25E+01	1		2.76E+03	44		2.66E+03	2	
VOC	Xylenes (total)	3.86E+02		47				2.76E-01		47	0.078		47	8.75E-06		47	1.06E+02	1		1.75E+02		47	1.00E+01	1	65
TIC	Acetaldehyde																4.41E+01	46							
TIC	Acetophenone																1.20E+02	46		5.50E+03	1		1.00E+00	1	
TIC	Azobenzene																1.82E+02	46							
TIC	Butanol, 1-	6.92E+00	44					3.61E-04	44		0.08	44		9.30E-06	44		7.41E+01	46		7.40E+04	44				

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Chem Group	Paramname	KOC L/KG VALUE	R	N	KD L/KG VALUE	R	N	HENRY UNITLESS VALUE	R	N	DIFFAIR CM2/SEC VALUE	R	N	DIFFWATER CM2/SEC VALUE	R	N	MW G/MOL VALUE	R	N	SOL MG/L VALUE	R	N	VP MM/HG VALUE	R	N
TIC	Caprolactam																1.13E+02	46							
TIC	Chlorodifluoromethane																8.65E+01	46							
TIC	Cyclohexanone																9.82E+01	46							
TIC	Diethyl ether																7.41E+01	46							
TIC	Dioxane, 1,4-																8.81E+01	46					3.70E+01	1	
TIC	Ethanol, 2-(2-butoxyethoxy)-																1.62E+02	46							
TIC	Hexane, n-																8.62E+01	46							
TIC	Phenol, 4,4'-(1-methylethyli																2.28E+02	46							
TIC	Phthalic anhydride																1.48E+02	46							
SVOC	1,2,4-Trichlorobenzene	1.78E+03	44					5.82E-02	44		0.03	44		8.23E-06	44		1.81E+02	1		3.00E+02	44		2.90E-01	2	
SVOC	1,2-Dichlorobenzene	6.17E+02	44					7.79E-02	44		0.069	44		7.90E-06	44		1.47E+02	1		1.56E+02	44		1.00E+00	2	
SVOC	1,3-Dichlorobenzene							1.32E-01	1		4.68E-02		50	7.04E-06		50	1.47E+02	1					2.28E+00	2	
SVOC	1,4-Dichlorobenzene	6.17E+02	44					9.96E-02	44		0.069	44		7.90E-06	44		1.47E+02	1		7.38E+01	44		1.18E+00	2	
SVOC	2,2'-oxybis(1-Chloropropane)							4.50E-03	1		0.0602	11		7.04E-06		50	1.71E+02	1		1.70E+03	1		8.50E-01	2	
SVOC	2,4,5-Trichlorophenol	1.60E+03	44	43				1.78E-04	44		0.0291	44		7.03E-06	44		1.97E+02	1		1.20E+03	44		1.00E+00	2	
SVOC	2,4,6-Trichlorophenol	3.81E+02	44					3.19E-04	44		0.0318	44		6.25E-06	44		1.97E+02	1		8.00E+02	44		1.20E-02	2	
SVOC	2,4-Dichlorophenol	1.47E+02	44					1.30E-04	44		0.0346	44		8.77E-06	44		1.63E+02	1		4.50E+03	44		5.90E-02	2	
SVOC	2,4-Dimethylphenol	2.09E+02	44					8.20E-05	44		0.0584	44		8.69E-06	44		1.22E+02	1		7.87E+03	44		6.20E-02	3	
SVOC	2,4-Dinitrotoluene	9.55E+01	44					3.80E-06	44		0.203	44		7.06E-06	44		1.82E+02	1		2.70E+02	44		5.10E-03	2	
SVOC	2,6-Dinitrotoluene	6.92E+01	44					3.06E-05	44		0.0327	44		7.26E-06	44		1.82E+02	1		1.82E+02	44		1.80E-02	2	
SVOC	2-Chloronaphthalene							2.50E-02	1		4.68E-02		50	7.04E-06		50	1.63E+02	1		6.74E+00	1		1.70E-02	1	
SVOC	2-Chlorophenol	3.88E+02	44					1.60E-02	44		0.0501	44		9.46E-06	44		1.29E+02	1		2.20E+04	44		4.00E+01	1	
SVOC	2-Methylnaphthalene							2.04E-02	1		4.68E-02		50	7.04E-06		50	1.42E+02	1		2.60E+01	1				
SVOC	2-Methylphenol	9.12E+01	44					4.92E-05	44		0.074	44		8.30E-06	44		1.08E+02	1		2.60E+04	44		2.40E-01	1	
SVOC	2-Nitroaniline							3.97E-03	1		0.073	11		7.04E-06		50	1.38E+02	1		1.26E+03	1				
SVOC	3,3'-Dichlorobenzidine	7.24E+02	44					1.64E-07	44		0.0194	44		6.74E-06	44		2.53E+02	1		3.11E+00	44		1.00E-05	2	
SVOC	4-Bromophenyl-phenylether							4.09E-03	1		4.68E-02		50	7.04E-06		50	2.49E+02	1					1.50E-03	1	
SVOC	4-Chloro-3-methylphenol							1.02E-04	1		4.68E-02		50	7.04E-06		50	1.43E+02	1		3.85E+03	1		5.00E-02	1	
SVOC	4-Chlorophenyl-phenyl ether							8.99E-03	1		4.68E-02		50	7.04E-06		50	2.05E+02	1		3.30E+00	1		2.70E-03	1	
SVOC	4-Methylphenol							1.60E-05	1		4.68E-02		50	7.04E-06		50	1.08E+02	1		2.40E+04	1		1.10E-01	1	
SVOC	4-Nitrophenol							1.23E-03	1		4.68E-02		50	7.04E-06		50	1.39E+02	1		1.50E+04	1		2.20E+00	1	
SVOC	Acenaphthene	7.08E+03	44					6.36E-03	44		0.0421	44		7.69E-06	44		1.54E+02	1		4.24E+00	44		1.55E-03	2	
SVOC	Acenaphthylene	1.00E+04	44	46				4.66E-03	1		4.68E-02		50	7.04E-06		50	1.52E+02	1		3.93E+00	1		2.90E-02	1	
SVOC	Anthracene	2.95E+04	44					2.67E-03	44		0.0324	44		7.74E-06	44		1.78E+02	1		4.34E-02	44		1.95E-04	1	
SVOC	Benzo(a)anthracene	3.98E+05	44					1.37E-04	44		0.051	44		9.00E-06	44		2.28E+02	1		9.40E-03	44		2.20E-08	2	
SVOC	Benzo(a)pyrene	1.02E+06	44					4.63E-05	44		0.043	44		9.00E-06	44		2.52E+02	1		1.62E-03	44		5.60E-09	2	
SVOC	Benzo(b)fluoranthene	1.23E+06	44					4.55E-03	44		0.0226	44		5.56E-06	44		2.52E+02	1		1.50E-03	44		5.00E-07	1	
SVOC	Benzo(g,h,i)perylene							5.72E-06	1		4.68E-02		50	7.04E-06		50	2.76E+02	1					1.03E-10	2	
SVOC	Benzo(k)fluoranthene	1.23E+06	44					3.40E-05	44		0.0226	44		5.56E-06	44		2.52E+02	1		8.00E-04	44		5.10E-07	2	
SVOC	Benzoic Acid	6.00E-01	44					6.31E-05	44		0.0536	44		7.97E-06	44		1.22E+02	46		3.50E+03	44				

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SVOC	Benzyl Alcohol										4.68E-02		50	7.04E-06		50	1.08E+02	1					1.06E-01	40	
SVOC	bis(2-Chloroethoxy)methane							1.55E-05	1		4.68E-02		50	7.04E-06		50	1.73E+02	1		8.10E+04	1		1.00E-01	1	
SVOC	bis(2-Chloroethyl) ether	1.55E+01	44					7.38E-04	44		0.0692	44		7.53E-06	44		1.43E+02	1		1.72E+04	44		7.10E-01	2	
SVOC	bis(2-Ethylhexyl)phthalate	1.51E+07	44					4.18E-06	44		0.0351	44		3.66E-06	44		3.91E+02	1		3.40E-01	44		1.20E+00	1	
SVOC	Butylbenzylphthalate	5.75E+04	44					5.17E-05	44		0.0174	44		4.83E-06	44		3.12E+02	1		2.69E+00	44		8.60E-06	1	
SVOC	Carbazole	3.39E+03	44					6.26E-07	44		0.039	44		7.03E-06	44		1.67E+02	46		7.48E+00	44				
SVOC	Chrysene	3.98E+05	44					3.88E-03	44		0.0248	44		6.21E-06	44		2.28E+02	1		1.60E-03	44		6.30E-09	1	
SVOC	Dibenz(a,h)anthracene	3.80E+06	44					6.03E-07	44		0.0202	44		5.18E-06	44		2.78E+02	1		2.49E-03	44		1.00E-10	1	
SVOC	Dibenzofuran										4.68E-02		50	7.04E-06		50	1.68E+02	1		1.00E+01	1				
SVOC	Diethylphthalate	2.88E+02	44					1.85E-05	44		0.0256	44		6.35E-06	44		2.22E+02	1		1.08E+03	44		3.50E-03	2	
SVOC	Dimethylphthalate										4.68E-02		50	7.04E-06		50	1.94E+02	1					1.00E-02	1	
SVOC	Di-n-butylphthalate	3.39E+04	44					3.85E-08	44		0.0438	44		7.86E-06	44		2.78E+02	1		1.12E+01	44		1.00E-05	2	
SVOC	Di-n-octylphthalate	8.32E+07	44					2.74E-03	44		0.0151	44		3.58E-06	44		3.91E+02	1		2.00E-02	44		1.40E-04	3	
SVOC	Fluoranthene	1.07E+05	44					6.60E-04	44		0.0302	44		6.35E-06	44		2.02E+02	1		2.06E-01	44		5.00E-06	1	
SVOC	Fluorene	1.38E+04	44					2.61E-03	44		0.0363	44		7.88E-06	44		1.66E+02	1		1.98E+00	44		7.10E-04	2	
SVOC	Hexachlorobenzene	5.50E+04	44					5.41E-02	44		0.0542	44		5.91E-06	44		2.85E+02	1		6.20E+00	44		1.09E-05	2	
SVOC	Hexachlorobutadiene	5.37E+04	44					3.34E-01	44		0.0561	44		6.16E-06	44		2.61E+02	1		3.23E+00	44		2.00E+00	2	
SVOC	Indeno(1,2,3-cd)pyrene	3.47E+06	44					6.56E-05	44		0.019	44		5.66E-06	44		2.76E+02	1		2.20E-05	44		1.00E-10	1	
SVOC	Isophorone	4.68E+01	44					2.72E-04	44		0.0623	44		6.76E-06	44		1.38E+02	1		1.20E+04	44		3.80E-01	1	
SVOC	Naphthalene	2.00E+03	44					1.98E-02	44		0.059	44		7.50E-06	44		1.28E+02	1		3.10E+01	44		8.20E-02	1	
SVOC	N-Nitroso-di-n-propylamine	2.40E+01	44					9.23E-05	44		0.0545	44		8.17E-06	44		1.30E+02	1		9.89E+03	44		4.00E-01	2	
SVOC	N-Nitrosodiphenylamine	1.29E+03	44					2.05E-04	44		0.0312	44		6.35E-06	44		1.98E+02	1		3.51E+01	44		1.00E-01	1	
SVOC	Pentachlorophenol	5.92E+02	44					1.00E-06	44		0.056	44		6.10E-06	44		2.66E+02	1		1.95E+03	44		1.10E-04	1	
SVOC	Phenanthrene							1.61E-03	1		4.68E-02		50	7.04E-06		50	1.78E+02	1					6.80E-04	2	
SVOC	Phenol	2.88E+01	44					1.63E-05	44		0.082	44		9.10E-06	44		9.41E+01	1		8.28E+04	44		3.41E-01	2	
SVOC	Pyrene	1.05E+05	44					4.51E-04	44		0.0272	44		7.24E-06	44		2.02E+02	1		1.35E-01	44		2.50E-06	2	
P/PCB	4,4'-DDD	1.00E+06	44					1.64E-04	44		0.0169	44		4.76E-06	44		3.20E+02	1		9.00E-02	44		1.89E-06	2	
P/PCB	4,4'-DDE	4.47E+06	44					8.61E-04	44		0.0144	44		5.87E-06	44		3.19E+02	1		1.20E-01	44		6.50E-06	1	
P/PCB	4,4'-DDT	2.63E+06	44					3.32E-04	44		0.0137	44		4.95E-06	44		3.54E+02	1		2.50E-02	44		5.50E-06	2	
P/PCB	Aldrin	2.45E+06	44					6.97E-03	44		0.0132	44		4.86E-06	44		3.65E+02	1		1.80E-01	44		6.00E-06	2	
P/PCB	alpha-BHC	1.23E+03	44					4.35E-04	44		0.0142	44		7.34E-06	44		2.91E+02	1		2.00E+00	44		2.50E-05	2	
P/PCB	alpha-Chlordane	1.20E+05		44				1.99E-03		44	0.0118		44	4.37E-06		44	4.10E+02		44	5.60E-02		44	1.00E-05	1	
P/PCB	Aroclor-1242	4.81E+04	34					4.30E-02		24	0.0205		26	5.60E-06		50									
P/PCB	Aroclor-1248										1.42E-02		50	5.60E-06		50									
P/PCB	Aroclor-1254	8.10E+05	34					3.02E-02		25	0.0127		23	5.60E-06		50				5.15E-02	34				
P/PCB	Aroclor-1260	4.43E+06	34					7.50E-03		25	0.0127	34		5.60E-06		50				4.47E-02	34				
P/PCB	beta-BHC	1.26E+03	44					3.05E-05	44		0.0142	44		7.34E-06	44		2.91E+02	1		2.40E-01	44		2.80E-07	2	
P/PCB	Dieldrin	2.14E+04	44					6.19E-04	44		0.0125	44		4.74E-06	44		3.81E+02	1		1.95E-01	44		1.80E-07	1	
P/PCB	Endosulfan I	2.14E+03	44	84				4.13E-03	1		1.42E-02		50	5.60E-06		50	4.07E+02	1		3.20E-01	1		1.00E-05	1	
P/PCB	Endosulfan sulfate							1.06E-03	3								4.23E+02	1		2.20E-01	1	55	1.00E-05	3	

Physical/Chemical Parameter Values for Chemicals of Potential Concern
ACS NPL Site, Griffith, IN

Chem Group	Paramname	KOC L/KG VALUE	R	N	KD L/KG VALUE	R	N	HENRY UNITLESS VALUE	R	N	DIFFAIR CM2/SEC VALUE	R	N	DIFFWATER CM2/SEC VALUE	R	N	MW G/MOL VALUE	R	N	SOL MG/L VALUE	R	N	VP MM/HG VALUE	R	N
P/PCB	Endrin	1.23E+04	44					3.08E-04	44		0.0125	44		4.74E-06	44		3.81E+02	1		2.50E-01	44		2.00E-07	1	
P/PCB	Endrin aldehyde	6.70E+02	3					1.58E-05	1								3.81E+02	1		2.60E-01	1		2.00E-07	1	
P/PCB	Endrin ketone										1.42E-02		50	5.60E-06		50									
P/PCB	gamma-BHC	1.07E+03	44					5.74E-04	44		0.0142	44		7.34E-06	44		2.91E+02	1		6.80E+00	44		1.60E-04	2	
P/PCB	gamma-Chlordane	1.20E+05		44				1.99E-03		44	0.0118		44	4.37E-06		44	4.10E+02		44	5.60E-02		44	1.00E-05	1	
P/PCB	Heptachlor	1.41E+06	44					4.47E-02	44		0.0112	44		5.69E-06	44		3.73E+02	1		1.80E-01	44		3.00E-04	1	
P/PCB	Heptachlor epoxide	8.32E+04	44					3.90E-04	44		0.0132	44		4.23E-06	44		3.89E+02	1		2.00E-01	44		3.00E-04	2	
P/PCB	Methoxychlor	9.77E+04	44					6.48E-04	44		0.0156	44		4.46E-06	44		3.46E+02	1		4.50E-02	44		1.22E-06	40	
INORG	Antimony				4.50E+01	44					0.0307		50	6.30E-06		50	1.22E+02	1					1.00E+00	1	
INORG	Arsenic				2.90E+01	44	43				0.0307		50	6.30E-06		50	7.49E+01	1							
INORG	Barium				4.10E+01	44	43				0.0307		50	6.30E-06		50	1.37E+02	1							
INORG	Beryllium				7.90E+02	44	43				0.0307		50	6.30E-06		50	9.01E+00	1							
INORG	Cadmium				7.50E+01	44	43				0.0307		50	6.30E-06		50	1.12E+02	1							
INORG	Chromium III				1.80E+06	44	43				0.0307		85	6.30E-06		85	5.20E+01	46							
INORG	Chromium VI				1.90E+01	44	43				0.0307		85	6.30E-06		85	5.20E+01	46							
INORG	Cobalt				4.50E+01	35					0.0307		50	6.30E-06		50	5.89E+01	1							
INORG	Copper				1.00E+04	34					0.0307		50	6.30E-06		50	6.35E+01	1							
INORG	Cyanide (total)				9.90E+00	44					0.0307		50	6.30E-06		50	2.60E+01	1							
INORG	Lead				9.00E+02	35					0.0307		50	6.30E-06		50	2.07E+02	1							
INORG	Manganese				6.50E+01	35					0.0307		50	6.30E-06		50	5.49E+01	46							
INORG	Mercury				5.20E+01	44	43	4.67E-01	44		0.0307	44		6.30E-06	44		2.01E+02	1					2.00E-03	2	
INORG	Nickel				6.50E+01	44	43				0.0307		50	6.30E-06		50	5.87E+01	1							
INORG	Selenium				5.00E+00	44	43				0.0307		50	6.30E-06		50	7.90E+01	1							
INORG	Silver				8.30E+00	44	43				0.0307		50	6.30E-06		50	1.08E+02	1							
INORG	Thallium				7.10E+01	44	43				0.0307		50	6.30E-06		50	2.04E+02	1							
INORG	Vanadium				1.00E+03	44					0.0307		50	6.30E-06		50	5.09E+01	1							
INORG	Zinc				6.20E+01	44	43				0.0307		50	6.30E-06		50	6.54E+01	1							

TABLE B-1 (continued)
Notes for Physical/Chemical Parameter Values
ACS NPL Site, Griffith, IN

NOTE	COMMENT
23	ENVIRON used Aroclor-1260 [CASRN 11096-82-5] value presented in reference 34 as a surrogate.
24	Calculated by ENVIRON from vapor pressure(VP), solubility(S), and mol. weight of the Aroclor as described in ref. 34, page 5-2. The VP was based on the value for Aroclor 1016 presented in ref. 34. The S for Aroclor 1242 was taken from Ref. 3.
25	Calculated by ENVIRON from vapor pressure(VP), solubility(S), and mol. weight of the Aroclor as described in reference 34, page 5-2). The VP and S for that Aroclor were taken from Reference 34.
26	ENVIRON used Aroclor-1016 [CASRN 12674-11-2] value presented in reference 34 as a surrogate.
28	ENVIRON used trans-1,2-Dichloroethene [CASRN 156-60-5] value presented in reference 34 as a surrogate.
43	pH associate with values is 6.8
44	ENVIRON used Chlordane [CASRN 57-74-9] value presented in reference 44 as a surrogate.
46	ENVIRON used Equation (70) from Reference 1 to calculate a value using log Kow=4.07 presented in Reference 44.
47	ENVIRON estimated value for (total) by averaging values for (m-, o-, and -p) isomers.
49	At 25 degrees Celsius.
50	At 20 degrees Celsius.
51	min, max 1.78.
52	min, max 3.20.
55	Reference temperature is unspecified.
65	min temperature: max is 32.1C
84	ENVIRON used Endosulfan [CASRN 115-29-7] value presented in the indicated reference as a surrogate.
85	ENVIRON used Chromium (total) [CASRN 7440-47-3] value presented in the indicated reference as a surrogate.

TABLE B-1 (continued)
References for Physical/Chemical Parameter Values
ACS NPL Site, Griffith, IN

REF	REFERENCE
1	USEPA. 1992. Handbook of RCRA Ground-Water Monitoring Constituents. Chemical and Physical Properties (40 CFR Part 264, Appendix IX). EPA-530-R-92-022. September.
2	USEPA. 1986. Superfund Public Health Evaluation Manual (SPHEM). Office of Emergency and Remedial Response. Office of Solid Waste and Emergency Response. OSWER Directive 9285.4-1. October.
3	USEPA. 1982. Mabey, W., J. Smith, R. Podoll, H. Johnson, T. Mill, T. Chou, J. Gates, I. Partridge, and D. Vandenberg. Aquatic Fate Process Data for Organic Priority Pollutants. Final. Office of Water Reg. & Standards. EPA-440/4-81-014. December.
4	USEPA. 1990. Basics of Pump-and-Treat Ground-Water Remediation Technology. Table A-1. Environmental Research Laboratory. Research and Development. EPA/600/8-90/003. March.
11	USEPA. 1990. Guidance on Remedial Actions for Superfund Sites with PCB contamination. Office of Emergency and Remedial Response. EPA/540/G-90/007. OSWER Dir. 9355.4-01. August.
34	USEPA. 1994. Technical Background for Soil Screening Guidance. Office of Emergency and Remedial Response. EPA/540/R-94/106. Review Draft. November.
35	Baes III, C.F., R.D. Sharp, A.L. Sjoreen, and R.W. Shor. 1984. A Review and Analysis of Parameters for Assessing Transport of Released Radionuclides through Agriculture (AD-89-T-2-A-106) (formerly EPA078-D-X0304), Oak Ridge National Laboratory, ORNL-5786.
40	Research Triangle Institute, Center for Environmental Analysis. 1995. Supplemental Technical Support Document for Hazardous Waste Identification Rule: Risk Assessment for Human and Ecological Receptors--Volume 1, TABLE A-1. November 1995.
44	USEPA. 1996. Soil Screening Guidance: Technical Background Document. Office of Emergency and Remedial Response. EPA/540/R-95/128. May.
46	Lide et al. 1991. CRC Handbook of Chemistry and Physics.

Table B-2: Vapor Flux (mg/m^2-s per mg/kg) from Soil to Ambient Air

Analyte Group	Substance	CASRN	K_{oc} (L/kg)	K_d (L/kg)	H (unitless)	R_L (unitless)	D_{air} (cm^2/s)	D_G (cm^2/s)	D_{water} (cm^2/s)	D_L (cm^2/s)	D_E (cm^2/s)	Chronic - 6 yr Areas 1 & 4B $J_{v\,(60\,cm)}$ (kg-soil/m^2-s)	Chronic - 6 yr Areas 2 & 3 $J_{v\,(300\,cm)}$ (kg-soil/m^2-s)	9 month $J_{v,Con}$ (kg-soil/m^2-s)	10-day $J_{v,Exc}$ (kg-soil/m^2-s)	8-hr $J_{v,8\text{-}hr}$ (kg-soil/m^2-s)	1-hr $J_{v,1\text{-}hr}$ (kg-soil/m^2-s)
VOC	1,1,1-Trichloroethane	71-55-6	1.10E+02	8.80E-01	7.05E-01	1.90E+00	7.80E-02	1.32E-03	8.80E-06	1.88E-07	4.90E-04	2.65E-06	1.22E-05	9.65E-05	5.05E-04	2.77E-03	7.82E-03
VOC	1,1,2,2-Tetrachloroethane	79-34-5	9.33E+01	7.46E-01	1.41E-02	1.56E+00	7.10E-02	1.20E-03	7.90E-06	1.68E-07	1.10E-05	2.33E-06	5.12E-06	1.45E-05	7.57E-05	4.15E-04	1.17E-03
VOC	1,1,2-Trichloroethane	79-00-5	5.01E+01	4.01E-01	3.74E-02	9.09E-01	7.80E-02	1.32E-03	8.80E-06	1.88E-07	5.46E-05	2.59E-06	8.77E-06	3.22E-05	1.69E-04	9.24E-04	2.61E-03
VOC	1,1-Dichloroethane	75-34-3	3.16E+01	2.53E-01	2.30E-01	6.57E-01	7.42E-02	1.26E-03	1.05E-05	2.24E-07	4.40E-04	2.65E-06	1.20E-05	9.15E-05	4.79E-04	2.62E-03	7.42E-03
VOC	1,1-Dichloroethene	75-35-4	5.89E+01	4.71E-01	1.07E+00	1.19E+00	9.00E-02	1.52E-03	1.04E-05	2.22E-07	1.38E-03	2.58E-06	1.30E-05	1.62E-04	8.47E-04	4.64E-03	1.31E-02
VOC	1,2,4-Trimethylbenzene	95-63-6			2.31E-01	1.82E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.82E-03	8.65E-06	3.65E-05	1.86E-04	9.73E-04	5.33E-03	1.51E-02
VOC	1,2-Dichloroethane	107-06-2	1.74E+01	1.39E-01	4.01E-02	4.17E-01	1.04E-01	1.76E-03	9.90E-06	2.11E-07	1.70E-04	2.01E-06	8.74E-06	5.68E-05	2.97E-04	1.63E-03	4.61E-03
VOC	1,2-Dichloroethene (total)	540-59-0	5.00E+01	4.00E-01	2.30E-01	9.34E-01	7.07E-02	1.20E-03	9.18E-06	1.96E-07	2.95E-04	3.35E-06	1.39E-05	7.49E-05	3.92E-04	2.15E-03	6.07E-03
VOC	1,2-Dichloropropane	78-87-5	4.37E+01	3.50E-01	1.15E-01	8.23E-01	7.82E-02	1.32E-03	8.73E-06	1.86E-07	1.85E-04	7.50E-06	2.10E-05	5.94E-05	3.11E-04	1.70E-03	4.81E-03
VOC	1,3,5-Trimethylbenzene	108-67-8				1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.30E-06						
VOC	2-Butanone	78-93-3			1.90E-03	1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.95E-05	3.58E-06	6.81E-06	1.92E-05	1.01E-04	5.52E-04	1.56E-03
VOC	2-Hexanone	591-78-6			7.15E-02	1.60E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	6.42E-04	1.30E-05	3.91E-05	1.11E-04	5.78E-04	3.17E-03	8.96E-03
VOC	4-Methyl-2-pentanone	108-10-1			6.09E-04	1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	7.12E-06	3.96E-07	1.79E-06	1.16E-05	6.09E-05	3.34E-04	9.44E-04
VOC	Acetone	67-64-1	5.75E-01	4.60E-03	1.59E-03	1.59E-01	1.24E-01	2.10E-03	1.14E-05	2.43E-07	2.26E-05	2.59E-07	1.33E-06	2.07E-05	1.08E-04	5.94E-04	1.68E-03
VOC	Benzene	71-43-2	5.89E+01	4.71E-01	2.28E-01	1.07E+00	8.80E-02	1.49E-03	9.80E-06	2.09E-07	3.19E-04	1.98E-06	9.49E-06	7.79E-05	4.07E-04	2.23E-03	6.31E-03
VOC	Bromodichloromethane	75-27-4	5.50E+01	4.40E-01	6.56E-02	9.86E-01	2.98E-02	5.05E-04	1.06E-05	2.26E-07	3.38E-05	2.04E-06	6.90E-06	2.54E-05	1.33E-04	7.27E-04	2.06E-03
VOC	Carbon Disulfide	75-15-0	4.57E+01	3.66E-01	1.24E+00	1.01E+00	1.04E-01	1.76E-03	1.00E-05	2.13E-07	2.16E-03	2.54E-06	1.33E-05	2.03E-04	1.06E-03	5.81E-03	1.64E-02
VOC	Carbon Tetrachloride	56-23-5	1.74E+02	1.39E+00	1.25E+00	2.94E+00	7.80E-02	1.32E-03	8.80E-06	1.88E-07	5.62E-04	3.38E-06	1.52E-05	1.03E-04	5.41E-04	2.96E-03	8.38E-03
VOC	Chlorobenzene	108-90-7	2.19E+02	1.75E+00	1.52E-01	3.47E+00	7.30E-02	1.24E-03	8.70E-06	1.86E-07	5.43E-05	1.03E-05	1.14E-05	3.21E-05	1.68E-04	9.21E-04	2.61E-03
VOC	Chloroethane	75-00-3			2.83E-01	1.90E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	2.14E-03	1.43E-05	5.10E-05	2.02E-04	1.06E-03	5.78E-03	1.64E-02
VOC	Chloroform	67-66-3	3.98E+01	3.18E-01	1.50E-01	7.70E-01	1.04E-01	1.76E-03	1.00E-05	2.13E-07	3.44E-04	2.31E-06	1.06E-05	8.09E-05	4.23E-04	2.32E-03	6.55E-03
VOC	Chloromethane	74-87-3				1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.30E-06						
VOC	Ethyl Benzene	100-41-4	3.63E+02	2.90E+00	3.23E-01	5.65E+00	7.50E-02	1.27E-03	7.80E-06	1.66E-07	7.26E-05	1.19E-06	5.48E-06	3.72E-05	1.94E-04	1.07E-03	3.01E-03
VOC	Methylene Chloride	75-09-2	1.17E+01	9.36E-02	8.98E-02	3.39E-01	1.01E-01	1.71E-03	1.17E-05	2.49E-07	4.55E-04	2.99E-05	3.29E-05	9.30E-05	4.87E-04	2.67E-03	7.54E-03
VOC	Styrene	100-42-5	7.76E+02	6.21E+00	1.13E-01	1.18E+01	7.10E-02	1.20E-03	8.00E-06	1.71E-07	1.15E-05	7.69E-07	3.08E-06	1.48E-05	7.74E-05	4.24E-04	1.20E-03
VOC	Tetrachloroethene	127-18-4	1.55E+02	1.24E+00	7.54E-01	2.59E+00	7.20E-02	1.22E-03	8.20E-06	1.75E-07	3.56E-04	3.46E-06	1.45E-05	8.23E-05	4.30E-04	2.36E-03	6.67E-03
VOC	Tetrahydrofuran	109-99-9				1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.30E-06						
VOC	Toluene	108-88-3	1.82E+02	1.46E+00	2.72E-01	2.93E+00	8.70E-02	1.47E-03	8.60E-06	1.83E-07	1.37E-04	3.93E-06	1.39E-05	5.11E-05	2.67E-04	1.46E-03	4.14E-03
VOC	Trichloroethene	79-01-6	1.66E+02	1.33E+00	4.22E-01	2.71E+00	7.90E-02	1.34E-03	9.10E-06	1.94E-07	2.09E-04	2.23E-06	1.01E-05	6.30E-05	3.30E-04	1.81E-03	5.11E-03
VOC	Vinyl Chloride	75-01-4	1.86E+01	1.49E-01	1.11E+00	5.85E-01	1.06E-01	1.80E-03	1.23E-06	2.62E-08	3.41E-03	1.92E-05	6.92E-05	2.55E-04	1.33E-03	7.30E-03	2.06E-02
VOC	Xylenes (total)	1330-20-7	3.86E+02	3.09E+00	2.76E-01	5.99E+00	7.80E-02	1.32E-03	8.75E-06	1.87E-07	6.09E-05	2.73E-06	9.26E-06	3.40E-05	1.78E-04	9.75E-04	2.76E-03
VOC	cis-1,2-Dichloroethene	156-59-2	3.55E+01	2.84E-01	1.67E-01	7.07E-01	7.36E-02	1.25E-03	1.13E-05	2.41E-07	2.95E-04	2.10E-06	9.81E-06	7.49E-05	3.92E-04	2.15E-03	6.07E-03
VOC	m,p-xylene	36777-61-2	3.98E+02	3.18E+00	3.08E-01	6.18E+00	7.35E-02	1.24E-03	8.12E-06	1.73E-07	6.20E-05	1.10E-05	1.21E-05	3.43E-05	1.80E-04	9.84E-04	2.78E-03
VOC	ortho-xylene	95-47-6	3.63E+02	2.90E+00	2.13E-01	5.64E+00	8.70E-02	1.47E-03	1.00E-05	2.13E-07	5.57E-05	5.48E-06	1.15E-05	3.26E-05	1.70E-04	9.33E-04	2.64E-03
VOC	p-Cymene	99-87-6				1.50E-01	8.46E-02	1.43E-03	9.18E-06	1.96E-07	1.30E-06						
VOC	trans-1,2-Dichloroethene	156-60-5	5.25E+01	4.20E-01	3.85E-01	9.94E-01	7.07E-02	1.20E-03	1.19E-05	2.54E-07	4.64E-04	1.44E-05	3.32E-05	9.40E-05	4.92E-04	2.69E-03	7.62E-03
SVOC	1,2,4-Trichlorobenzene	120-82-1	1.78E+03	1.42E+01	5.82E-02	2.69E+01	3.00E-02	5.08E-04	8.23E-06	1.75E-07	1.10E-06	4.77E-07	1.47E-06	4.59E-06	2.40E-05	1.31E-04	3.72E-04
SVOC	1,2-Dichlorobenzene	95-50-1	6.17E+02	4.94E+00	7.79E-02	9.44E+00	6.90E-02	1.17E-03	7.90E-06	1.68E-07	9.66E-06	4.79E-06	4.79E-06	1.36E-05	7.09E-05	3.89E-04	1.10E-03
SVOC	1,3-Dichlorobenzene	541-73-1			1.32E-01	1.69E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	6.25E-04	3.85E-05	3.85E-05	1.09E-04	5.70E-04	3.12E-03	8.84E-03
SVOC	1,4-Dichlorobenzene	106-46-7	6.17E+02	4.94E+00	9.96E-02	9.44E+00	6.90E-02	1.17E-03	7.90E-06	1.68E-07	1.23E-05	5.42E-06	5.42E-06	1.53E-05	8.02E-05	4.39E-04	1.24E-03
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1			4.50E-03	1.51E-01	6.02E-02	1.02E-03	7.04E-06	1.50E-07	3.14E-05	8.65E-06	8.65E-06	2.45E-05	1.28E-04	7.01E-04	1.98E-03
SVOC	2,4,5-Trichlorophenol	95-95-4	1.60E+03	1.28E+01	1.78E-04	2.42E+01	2.91E-02	4.93E-04	7.03E-06	1.50E-07	9.83E-09	1.53E-07	1.53E-07	4.33E-07	2.26E-06	1.24E-05	3.51E-05
SVOC	2,4-Dichlorophenol	120-83-2	1.47E+02	1.18E+00	1.30E-04	2.36E+00	3.46E-02	5.86E-04	8.77E-06	1.87E-07	1.11E-07	5.15E-07	5.15E-07	1.46E-06	7.62E-06	4.17E-05	1.18E-04
SVOC	2,4-Dimethylphenol	105-67-9	2.09E+02	1.67E+00	8.20E-05	3.29E+00	5.84E-02	9.89E-04	8.69E-06	1.85E-07	8.09E-08	6.55E-08	2.58E-07	1.24E-06	6.49E-06	3.56E-05	1.01E-04
SVOC	2,4-Dinitrotoluene	121-14-2	9.55E+01	7.64E-01	3.80E-06	1.59E+00	2.03E-01	3.44E-03	7.06E-06	1.51E-07	1.03E-07	3.81E-07	4.95E-07	1.40E-06	7.33E-06	4.01E-05	1.14E-04
SVOC	2,6-Dinitrotoluene	606-20-2	6.92E+01	5.54E-01	3.06E-05	1.19E+00	3.27E-02	5.54E-04	7.26E-06	1.55E-07	1.44E-07	9.76E-08	3.90E-07	1.66E-06	8.67E-06	4.75E-05	1.34E-04
SVOC	2-Chloronaphthalene	91-58-7			2.50E-02	1.54E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.30E-04	1.76E-05	1.76E-05	4.98E-05	2.61E-04	1.43E-03	4.04E-03
SVOC	2-Methylnaphthalene	91-57-6			2.04E-02	1.53E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.07E-04	4.56E-06	1.33E-05	4.51E-05	2.36E-04	1.29E-03	3.66E-03
SVOC	2-Methylphenol	95-48-7	9.12E+01	7.30E-01	4.92E-05	1.52E+00	7.40E-02	1.25E-03	8.30E-06	1.77E-07	1.57E-07	6.11E-07	6.11E-07	1.73E-06	9.04E-06	4.95E-05	1.40E-04
SVOC	3,3'-Dichlorobenzidine	91-94-1	7.24E+02	5.79E+00	1.64E-07	1.10E+01	1.94E-02	3.29E-04	6.74E-06	1.44E-07	1.30E-08						
SVOC	4-Bromophenyl-phenylether	101-55-3			4.09E-03	1.51E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	2.25E-05						
SVOC	4-Chloro-3-methylphenol	59-50-7			1.02E-04	1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.54E-06	4.67E-07	1.60E-06	5.41E-06	2.83E-05	1.55E-04	4.39E-04
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3			8.99E-03	1.51E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	4.82E-05						
SVOC	4-Methylphenol	106-44-5			1.60E-05	1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.09E-06	8.46E-07	1.61E-06	4.54E-06	2.38E-05	1.30E-04	3.68E-04
SVOC	4-Nitrophenol	100-02-7			1.23E-03	1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	7.48E-06	4.22E-06	4.22E-06	1.19E-05	6.24E-05	3.42E-04	9.67E-04
SVOC	Acenaphthene	83-32-9	7.08E+03	5.66E+01	6.36E-03	1.07E+02	4.21E-02	7.13E-04	7.69E-06	1.64E-07	4.41E-08	3.24E-07	3.24E-07	9.16E-07	4.79E-06	2.62E-05	7.42E-05
SVOC	Acenaphthylene	208-96-8	1.00E+04	8.00E+01	4.66E-03	1.51E+02	4.68E-02	7.94E-04	7.04E-06	1.50E-07	2.56E-08	2.47E-07	2.47E-07	6.97E-07	3.65E-06	2.00E-05	5.65E-05
SVOC	Anthracene	120-12-7	2.95E+04	2.36E+02	2.67E-03	4.44E+02	3.24E-02	5.49E-04	7.74E-06	1.65E-07	3.67E-09	9.35E-08	9.35E-08	2.64E-07	1.38E-06	7.58E-06	2.14E-05
SVOC	Benzo(a)anthracene	56-55-3	3.98E+05	3.18E+03	1.37E-04	5.99E+03	5.10E-02	8.64E-04	9.00E-06	1.92E-07	5.18E-11						
SVOC	Benzo(a)pyrene	50-32-8	1.02E+06	8.16E+03	4.63E-05	1.53E+04	4.30E-02	7.29E-04	9.00E-06	1.92E-07	1.47E-11						
SVOC	Benzo(b)fluoranthene	205-99-2	1.23E+06	9.84E+03	4.55E-03	1.85E+04	2.26E-02	3.83E-04	5.56E-06	1.19E-07	1.01E-10						
SVOC	Benzo(g,h,i)perylene	191-24-2			5.72E-06	1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.03E-06						
SVOC	Benzo(k)fluoranthene	207-08-9	1.23E+06	9.84E+03	3.40E-05	1.85E+04	2.26E-02	3.83E-04	5.56E-06	1.19E-07	7.11E-12						
SVOC	Benzoic Acid	65-85-0	6.00E-01	4.80E-03	6.31E-05	1.59E-01	5.36E-02	9.08E-04	7.97E-06	1.70E-07	1.43E-06	1.68E-06	1.84E-06	5.21E-06	2.73E-05	1.49E-04	4.23E-04
SVOC	Benzyl Alcohol	100-51-6				1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.00E-06						
SVOC	Butylbenzylphthalate	85-68-7	5.75E+04	4.60E+02	5.17E-05	8.65E+02	1.74E-02	2.95E-04	4.83E-06	1.03E-07	1.37E-10						
SVOC	Carbazole	86-74-8	3.39E+03	2.71E+01	6.26E-07	5.11E+01	3.90E-02	6.61E-04	7.03E-06	1.50E-07	2.94E-09	8.36E-08	8.36E-08	2.36E-07	1.24E-06	6.78E-06	1.92E-05
SVOC	Chrysene	218-01-9	3.98E+05	3.18E+03	3.88E-03	5.99E+03	2.48E-02	4.20E-04	6.21E-06	1.32E-07	2.94E-10						
SVOC	Di-n-butylphthalate	84-74-2	3.39E+04	2.71E+02	3.85E-08	5.10E+02	4.38E-02	7.42E-04	7.86E-06	1.68E-07	3.29E-10						
SVOC	Di-n-octylphthalate	117-84-0	8.32E+07	6.66E+05	2.74E-03	1.25E+06	1.51E-02	2.56E-04	3.58E-06	7.63E-08	6.21E-13						
SVOC	Dibenzo(a,h)anthracene	53-70-3	3.80E+06	3.04E+04	6.03E-07	5.72E+04	2.02E-02	3.42E-04	5.18E-06	1.10E-07	1.94E-12						
SVOC	Dibenzofuran	132-64-9				1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.00E-06						
SVOC	Diethylphthalate	84-66-2	2.88E+02	2.30E+00	1.85E-05	4.48E+00	2.56E-02	4.34E-04	6.35E-06	1.35E-07	3.20E-08						
SVOC	Dimethylphthalate	131-11-3				1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	1.00E-06						
SVOC	Fluoranthene	206-44-0	1.07E+05	8.56E+02	6.60E-04	1.61E+03	3.02E-02	5.12E-04	6.35E-06	1.35E-07	2.94E-10						
SVOC	Fluorene	86-73-7	1.38E+04	1.10E+02	2.61E-03	2.08E+02	3.63E-02	6.15E-04	7.88E-06	1.68E-07	8.54E-09	1.42E-07	1.42E-07	4.03E-07	2.11E-06	1.15E-05	3.27E-05
SVOC	Hexachlorobenzene	118-74-1	5.50E+04	4.40E+02	5.41E-02	8.27E+02	5.42E-02	9.18E-04	5.91E-06	1.26E-07	6.02E-08						
SVOC	Hexachlorobutadiene	87-68-3	5.37E+04	4.30E+02	3.34E-01	8.08E+02	5.61E-02	9.50E-04	6.16E-06	1.31E-07	3.93E-07						

Table B-2: Vapor Flux (mg/m^2-s per mg/kg) from Soil to Ambient Air

Analyte Group	Substance	CASRN	K_{oc} (L/kg)	K_d (L/kg)	H (unitless)	R_L (unitless)	D_{air} (cm^2/s)	D_G (cm^2/s)	D_{water} (cm^2/s)	D_L (cm^2/s)	D_E (cm^2/s)	Chronic - 6 yr Areas 1 & 4B $J_{v\ (60\ cm)}$ (kg-soil/m^2-s)	Chronic - 6 yr Areas 2 & 3 $J_{v\ (200\ cm)}$ (kg-soil/m^2-s)	9 month $J_{v,\ Con}$ (kg-soil/m^2-s)	10-day $J_{v,\ Exc}$ (kg-soil/m^2-s)	8-hr $J_{v,\ 8\ hr}$ (kg-soil/m^2-s)	1-hr $J_{v,\ 1\text{-}hr}$ (kg-soil/m^2-s)
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.47E+06	2.78E+04	6.56E-05	5.22E+04	1.90E-02	3.22E-04	5.66E-06	1.21E-07	2.72E-12						
SVOC	Isophorone	78-59-1	4.68E+01	3.74E-01	2.72E-04	8.54E-01	6.23E-02	1.06E-03	6.76E-06	1.44E-07	5.05E-07	1.10E-06	1.10E-06	3.10E-06	1.62E-05	8.88E-05	2.51E-04
SVOC	N-Nitroso-di-n-propylamine	621-64-7	2.40E+01	1.92E-01	9.23E-05	5.11E-01	5.45E-02	9.23E-04	8.17E-06	1.74E-07	5.08E-07	1.10E-06	1.10E-06	3.11E-06	1.63E-05	8.91E-05	2.52E-04
SVOC	N-Nitrosodiphenylamine	86-30-6	1.29E+03	1.03E+01	2.05E-04	1.96E+01	3.12E-02	5.29E-04	6.35E-06	1.35E-07	1.25E-08	1.72E-07	1.72E-07	4.87E-07	2.55E-06	1.40E-05	3.95E-05
SVOC	Naphthalene	91-20-3	2.00E+03	1.60E+01	1.98E-02	3.02E+01	5.90E-02	1.00E-03	7.50E-06	1.60E-07	6.60E-07	5.97E-07	1.25E-06	3.54E-06	1.85E-05	1.02E-04	2.87E-04
SVOC	Pentachlorophenol	87-86-5	5.92E+02	4.74E+00	1.00E-06	9.05E+00	5.60E-02	9.49E-04	6.10E-06	1.30E-07	1.45E-08						
SVOC	Phenanthrene	85-01-8			1.61E-03	1.50E-01	4.68E-02	7.94E-04	7.04E-06	1.50E-07	9.49E-06	4.75E-06	4.75E-06	1.34E-05	7.03E-05	3.85E-04	1.09E-03
SVOC	Phenol	108-95-2	2.88E+01	2.30E-01	1.63E-05	5.83E-01	8.20E-02	1.39E-03	9.10E-06	1.94E-07	3.72E-07	8.55E-07	9.40E-07	2.66E-06	1.39E-05	7.62E-05	2.16E-04
SVOC	Pyrene	129-00-0	1.05E+05	8.40E+02	4.51E-04	1.58E+03	2.72E-02	4.61E-04	7.24E-06	1.54E-07	2.29E-10						
SVOC	bis(2-Chloroethyl) ether	111-44-4	1.55E+01	1.24E-01	7.38E-04	3.83E-01	6.92E-02	1.17E-03	7.53E-06	1.61E-07	2.68E-06	2.52E-06	2.52E-06	7.14E-06	3.73E-05	2.05E-04	5.78E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.51E+07	1.21E+05	4.18E-06	2.27E+05	3.51E-02	5.95E-04	3.66E-06	7.80E-08	3.55E-13						
P/PCB	4,4'-DDD	72-54-8	1.00E+06	8.00E+03	1.64E-04	1.50E+04	1.69E-02	2.86E-04	4.76E-06	1.01E-07	9.87E-12						
P/PCB	4,4'-DDE	72-55-9	4.47E+06	3.58E+04	8.61E-04	6.72E+04	1.44E-02	2.44E-04	5.87E-06	1.25E-07	4.99E-12						
P/PCB	4,4'-DDT	50-29-3	2.63E+06	2.10E+04	3.32E-04	3.96E+04	1.37E-02	2.32E-04	4.95E-06	1.06E-07	4.62E-12						
P/PCB	Aldrin	309-00-2	2.45E+06	1.96E+04	6.97E-03	3.68E+04	1.32E-02	2.24E-04	4.86E-06	1.04E-07	4.51E-11						
P/PCB	Aroclor-1242	53469-21-9	4.81E+04	3.85E+02	4.30E-02	7.24E+02	2.05E-02	3.47E-04	5.60E-06	1.19E-07	2.08E-08						
P/PCB	Aroclor-1248	12672-29-6			1.15E-01	1.66E-01	1.42E-02	2.40E-04	5.60E-06	1.19E-07	1.67E-04						
P/PCB	Aroclor-1254	11097-69-1	8.10E+05	6.48E+03	3.02E-02	1.22E+04	1.27E-02	2.15E-04	5.60E-06	1.19E-07	5.43E-10						
P/PCB	Aroclor-1260	11096-82-5	4.43E+06	3.54E+04	7.50E-03	6.66E+04	1.27E-02	2.15E-04	5.60E-06	1.19E-07	2.60E-11						
P/PCB	Dieldrin	60-57-1	2.14E+04	1.71E+02	6.19E-04	3.22E+02	1.25E-02	2.12E-04	4.74E-06	1.01E-07	7.21E-10						
P/PCB	Endosulfan I	959-98-8			4.13E-03	1.51E-01	1.42E-02	2.40E-04	5.60E-06	1.19E-07	7.38E-06						
P/PCB	Endosulfan sulfate	1031-07-8			1.06E-03	1.50E-01	1.25E-02	2.12E-04	4.74E-06	1.01E-07	2.17E-06						
P/PCB	Endrin	72-20-8	1.23E+04	9.84E+01	3.08E-04	1.85E+02	1.25E-02	2.12E-04	4.74E-06	1.01E-07	8.98E-10						
P/PCB	Endrin aldehyde	7421-93-4	6.70E+02	5.36E+00	1.58E-05	1.02E+01	1.42E-02	2.40E-04	5.60E-06	1.19E-07	1.20E-08						
P/PCB	Endrin ketone	53494-70-5				1.50E-01	1.42E-02	2.40E-04	5.60E-06	1.19E-07	7.96E-07						
P/PCB	Heptachlor	76-44-8	1.41E+06	1.13E+04	4.47E-02	2.12E+04	1.12E-02	1.90E-04	5.69E-06	1.21E-07	4.06E-10						
P/PCB	Heptachlor epoxide	1024-57-3	8.32E+04	6.66E+02	3.90E-04	1.25E+03	1.32E-02	2.24E-04	4.23E-06	9.02E-08	1.42E-10						
P/PCB	Methoxychlor	72-43-5	9.77E+04	7.82E+02	6.48E-04	1.47E+03	1.56E-02	2.64E-04	4.46E-06	9.51E-08	1.81E-10						
P/PCB	alpha-BHC	319-84-6	1.23E+03	9.84E+00	4.35E-04	1.86E+01	1.42E-02	2.41E-04	7.34E-06	1.57E-07	1.40E-08						
P/PCB	alpha-Chlordane	5103-71-9	1.20E+05	9.60E+02	1.99E-03	1.80E+03	1.18E-02	2.00E-04	4.73E-06	1.01E-07	2.76E-10						
P/PCB	beta-BHC	319-85-7	1.26E+03	1.01E+01	3.05E-05	1.91E+01	1.42E-02	2.41E-04	7.34E-06	1.57E-07	8.58E-09						
P/PCB	gamma-BHC	58-89-9	1.07E+03	8.56E+00	5.74E-04	1.62E+01	1.42E-02	2.41E-04	7.34E-06	1.57E-07	1.81E-08						
P/PCB	gamma-Chlordane	5103-74-2	1.20E+05	9.60E+02	1.99E-03	1.80E+03	1.18E-02	2.00E-04	4.73E-06	1.01E-07	2.76E-10						
INORG	Antimony	7440-36-0		4.50E+01		8.48E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.59E-09						
INORG	Arsenic	7440-38-2		2.90E+01		5.47E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	2.46E-09						
INORG	Barium	7440-39-3		4.10E+01		7.72E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.74E-09						
INORG	Beryllium	7440-41-7		7.90E+02		1.49E+03	3.07E-02	5.20E-04	6.30E-06	1.34E-07	9.04E-11						
INORG	Cadmium	7440-43-9		7.50E+01		1.41E+02	3.07E-02	5.20E-04	6.30E-06	1.34E-07	9.52E-10						
INORG	Chromium 3+	16065-83-1		1.90E+01		3.59E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	3.74E-09						
INORG	Chromium 6+	18540-29-9		1.90E+01		3.59E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	3.74E-09						
INORG	Cobalt	7440-48-4		4.50E+01		8.48E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.59E-09						
INORG	Copper	7440-50-8		1.00E+04		1.88E+04	3.07E-02	5.20E-04	6.30E-06	1.34E-07	7.15E-12						
INORG	Cyanide (total)	57-12-5		9.90E+00		1.88E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	7.16E-09						
INORG	Lead	7439-92-1		9.00E+02		1.69E+03	3.07E-02	5.20E-04	6.30E-06	1.34E-07	7.94E-11						
INORG	Manganese	7439-96-5		6.50E+01		1.22E+02	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.10E-09						
INORG	Mercury	7439-97-6		5.20E+01	4.67E-01	9.80E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	2.48E-06						
INORG	Nickel	7440-02-0		6.50E+01		1.22E+02	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.10E-09						
INORG	Selenium	7782-49-2		5.00E+00		9.55E+00	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.41E-08						
INORG	Silver	7440-22-4		8.30E+00		1.58E+01	3.07E-02	5.20E-04	6.30E-06	1.34E-07	8.53E-09						
INORG	Thallium	7440-28-0		7.10E+01		1.34E+02	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.01E-09						
INORG	Vanadium	7440-62-2		1.00E+03		1.88E+03	3.07E-02	5.20E-04	6.30E-06	1.34E-07	7.14E-11						
INORG	Zinc	7440-66-6		6.20E+01		1.17E+02	3.07E-02	5.20E-04	6.30E-06	1.34E-07	1.15E-09						
TIC	Acetaldehyde	75-07-0				1.50E-01											
TIC	Acetophenone	98-86-2				1.50E-01											
TIC	Butanol, 1-	71-36-3	6.92E+00	5.54E-02	3.61E-04	2.54E-01	8.00E-02	1.36E-03	9.30E-06	1.98E-07	2.71E-06	2.54E-06	2.54E-06	7.17E-06	3.75E-05	2.06E-04	5.82E-04
TIC	Caprolactam	105-60-2				1.50E-01											
TIC	Chlorodifluoromethane	75-45-6				1.50E-01											
TIC	Cyclohexanone	108-94-1				1.50E-01											
TIC	Diethyl ether	60-29-7				1.50E-01											
TIC	Dioxane, 1,4-	123-91-1				1.50E-01											
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5				1.50E-01											
TIC	Hexane, n-	110-54-3				1.50E-01											
TIC	Phenol, 4,4'-(1-methylethylidene	80-05-7				1.50E-01											
TIC	Phthalic anhydride	85-44-9				1.50E-01											

Notes:				
	Soil bulk density	g/cm^3	ρ_b	1.88 Calculated based on relationship to soil particle density and soil porosity
	Soil particle density	g/cm^3	ρ_s	2.65 SSG default
	Soil porosity	L/L-soil	n	0.29 Based on average of porosity values in RI report
	Water-filled soil porosity	L/L-soil	θ_w	0.15 SSG default
	Air-filled soil porosity	L/L-soil	θ_a	0.14 Calculated
	Organic carbon fraction	unitless	f_{oc}	0.008 Calculated from average of TOC values in RI report
	Exposure Interval, Chronic	sec	T	1.89E+08 6 years (based on shortest of the chronic EDs - child)
	Exposure Interval, Construction	sec	T	2.37E+07 9 months
	Exposure Interval, Excavation	sec	T	8.64E+05 10 days
	Exposure Interval, 8-hr	sec	T	2.88E+04
	Exposure Interval, 1-hr	sec	T	3.60E+03

Table B-3: Vapor Flux (L/m^2-s per mg/L) from Exposed Water to Ambient Air

Analyte Group	Substance	CASRN	H (unitless)	MW g/mol	K_{Gi} cm/s	K_{li} cm/s	$1/K_L$ cm/s	K_L cm/s	J_L (L/m^2-s)
SVOC	Phenanthrene	85-01-8	1.61E-03	178.23	3.67E-01	8.05E-04	2.94E+03	3.40E-04	3.40E-03
SVOC	Phenol	108-95-2	1.63E-05	94.11	4.54E-01	1.11E-03	1.36E+05	7.36E-06	7.36E-05
SVOC	Pyrene	129-00-0	4.51E-04	202.26	3.52E-01	7.55E-04	7.63E+03	1.31E-04	
SVOC	bis(2-Chloroethyl) ether	111-44-4	7.38E-04	143.01	3.95E-01	8.98E-04	4.54E+03	2.20E-04	2.20E-03
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	4.18E-06	390.54	2.82E-01	5.44E-04	8.50E+05	1.18E-06	
P/PCB	4,4'-DDD	72-54-8	1.64E-04	320.05	3.02E-01	6.01E-04	2.19E+04	4.57E-05	
P/PCB	4,4'-DDE	72-55-9	8.61E-04	319.03	3.02E-01	6.02E-04	5.51E+03	1.81E-04	
P/PCB	4,4'-DDT	50-29-3	3.32E-04	354.49	2.91E-01	5.71E-04	1.21E+04	8.27E-05	
P/PCB	Aldrin	309-00-2	6.97E-03	364.91	2.89E-01	5.62E-04	2275.084	4.40E-04	
P/PCB	Aroclor-1242	53469-21-9	4.30E-02	266.5	3.21E-01	6.58E-04	1591.935	6.28E-04	
P/PCB	Aroclor-1248	12672-29-6	1.15E-01	299.5	3.08E-01	6.21E-04	1638.934	6.10E-04	
P/PCB	Aroclor-1254	11097-69-1	3.02E-02	328	2.99E-01	5.93E-04	1796.339	5.57E-04	
P/PCB	Aroclor-1260	11096-82-5	7.50E-03	375.7	2.86E-01	5.54E-04	2.27E+03	4.40E-04	
P/PCB	Dieldrin	60-57-1	6.19E-04	380.91	2.84E-01	5.51E-04	7495.42	1.33E-04	
P/PCB	Endosulfan I	959-98-8	4.13E-03	406.95	2.78E-01	5.33E-04	2.75E+03	3.64E-04	
P/PCB	Endosulfan sulfate	1031-07-8	1.06E-03	422.92	2.75E-01	5.22E-04	5.35E+03	1.87E-04	
P/PCB	Endrin	72-20-8	3.08E-04	380.92	2.84E-01	5.51E-04	1.32E+04	7.56E-05	
P/PCB	Endrin aldehyde	7421-93-4	1.58E-05	380.92	2.84E-01	5.51E-04	2.24E+05	4.47E-06	
P/PCB	Endrin ketone	53494-70-5							
P/PCB	Heptachlor	76-44-8	4.47E-02	373.32	2.86E-01	5.56E-04	1.88E+03	5.33E-04	
P/PCB	Heptachlor epoxide	1024-57-3	3.90E-04	389.32	2.82E-01	5.45E-04	10916.09	9.16E-05	
P/PCB	Methoxychlor	72-43-5	6.48E-04	345.65	2.94E-01	5.78E-04	6981.47	1.43E-04	
P/PCB	alpha-BHC	319-84-6	4.35E-04	290.83	3.11E-01	6.30E-04	8969.868	1.11E-04	
P/PCB	alpha-Chlordane	5103-71-9	1.99E-03	409.8	2.78E-01	5.31E-04	3694.383	2.71E-04	
P/PCB	beta-BHC	319-85-7	3.05E-05	290.83	3.11E-01	6.30E-04	106880.4	9.36E-06	
P/PCB	gamma-BHC	58-89-9	5.74E-04	290.83	3.11E-01	6.30E-04	7182.09	1.39E-04	
P/PCB	gamma-Chlordane	5103-74-2	1.99E-03	409.8	2.78E-01	5.31E-04	3694.383	2.71E-04	
INORG	Antimony	7440-36-0		121.75	4.17E-01	9.74E-04			
INORG	Arsenic	7440-38-2		74.9216	4.90E-01	1.24E-03			
INORG	Barium	7440-39-3		137.33	4.00E-01	9.17E-04			
INORG	Beryllium	7440-41-7		9.01218	9.97E-01	3.58E-03			
INORG	Cadmium	7440-43-9		112.41	4.28E-01	1.01E-03			
INORG	Chromium 3+	16065-83-1		51.996	5.54E-01	1.49E-03			
INORG	Chromium 6+	18540-29-9		51.996	5.54E-01	1.49E-03			
INORG	Cobalt	7440-48-4		58.9332	5.32E-01	1.40E-03			
INORG	Copper	7440-50-8		63.546	5.18E-01	1.35E-03			
INORG	Cyanide (total)	57-12-5		26.0177	6.99E-01	2.11E-03			
INORG	Lead	7439-92-1		207.2	3.49E-01	7.46E-04			
INORG	Manganese	7439-96-5		54.93805	5.44E-01	1.45E-03			
INORG	Mercury	7439-97-6	4.67E-01	200.59	3.53E-01	7.59E-04	1324.267	7.55E-04	
INORG	Nickel	7440-02-0		58.69	5.32E-01	1.40E-03			
INORG	Selenium	7782-49-2		78.96	4.82E-01	1.21E-03			
INORG	Silver	7440-22-4		107.8682	4.34E-01	1.03E-03			
INORG	Thallium	7440-28-0		204.383	3.50E-01	7.52E-04			
INORG	Vanadium	7440-62-2		50.9415	5.58E-01	1.51E-03			
INORG	Zinc	7440-66-6		65.38	5.13E-01	1.33E-03			
TIC	Acetaldehyde	75-07-0		44.05	5.86E-01	1.62E-03			
TIC	Acetophenone	98-86-2		120.16	4.19E-01	9.80E-04			
TIC	Butanol, 1-	71-36-3	3.61E-04	74.12	4.92E-01	1.25E-03	6428.618	1.56E-04	0.001556
TIC	Caprolactam	105-60-2		113.16	4.27E-01	1.01E-03			
TIC	Chlorodifluoromethane	75-45-6		86.47	4.67E-01	1.16E-03			
TIC	Cyclohexanone	108-94-1		98.15	4.48E-01	1.08E-03			
TIC	Diethyl ether	60-29-7		74.12	4.92E-01	1.25E-03			
TIC	Dioxane, 1,4-	123-91-1		88.12	4.65E-01	1.14E-03			
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5		162.29	3.79E-01	8.43E-04			
TIC	Hexane, n-	110-54-3		86.18	4.68E-01	1.16E-03			
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7		228.28	3.38E-01	7.11E-04			
TIC	Phthalic anhydride	85-44-9		148.12	3.90E-01	8.83E-04			

Notes:	molecular weight of oxygen	g/mol	MW_{02}	32
	molecular weight of water	g/mol	MW_{H20}	18
	absolute temperature	K	T	283
	liquid-phase mass transfer coefficient for oxygen	cm/s	$k_{L,02}$	0.002
	gas-phase mass transfer coefficient for water vapor at 25 C	cm/s	$K_{G,H20}$	0.833

Table B-4: Vapor Flux (mg/m^2-s per mg/L) from Covered Ground Water to Ambient Air

Analyte Group	Substance	CASRN	H (unitless)	D_{air} (cm^2/s)	D_G (cm^2/s)	D_{water} (cm^2/s)	D_L (cm^2/s)	J_v (L/m^2-s)
SVOC	Pentachlorophenol	87-86-5	1.00E-06	5.60E-02	9.49E-04	6.10E-06	1.17E-06	
SVOC	Phenanthrene	85-01-8	1.61E-03	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	Phenol	108-95-2	1.63E-05	8.20E-02	1.39E-03	9.10E-06	1.75E-06	3.49E-07
SVOC	Pyrene	129-00-0	4.51E-04	2.72E-02	4.61E-04	7.24E-06	1.39E-06	
SVOC	bis(2-Chloroethyl) ether	111-44-4	7.38E-04	6.92E-02	1.17E-03	7.53E-06	1.45E-06	2.89E-07
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	4.18E-06	3.51E-02	5.95E-04	3.66E-06	7.03E-07	
P/PCB	4,4'-DDD	72-54-8	1.64E-04	1.69E-02	2.86E-04	4.76E-06	9.14E-07	
P/PCB	4,4'-DDE	72-55-9	8.61E-04	1.44E-02	2.44E-04	5.87E-06	1.13E-06	
P/PCB	4,4'-DDT	50-29-3	3.32E-04	1.37E-02	2.32E-04	4.95E-06	9.50E-07	
P/PCB	Aldrin	309-00-2	6.97E-03	1.32E-02	2.24E-04	4.86E-06	9.33E-07	
P/PCB	Aroclor-1242	53469-21-9	4.30E-02	2.05E-02	3.47E-04	5.60E-06	1.07E-06	
P/PCB	Aroclor-1248	12672-29-6	1.15E-01	1.42E-02	2.40E-04	5.60E-06	1.07E-06	
P/PCB	Aroclor-1254	11097-69-1	3.02E-02	1.27E-02	2.15E-04	5.60E-06	1.07E-06	
P/PCB	Aroclor-1260	11096-82-5	7.50E-03	1.27E-02	2.15E-04	5.60E-06	1.07E-06	
P/PCB	Dieldrin	60-57-1	6.19E-04	1.25E-02	2.12E-04	4.74E-06	9.10E-07	
P/PCB	Endosulfan I	959-98-8	4.13E-03	1.42E-02	2.40E-04	5.60E-06	1.07E-06	
P/PCB	Endosulfan sulfate	1031-07-8	1.06E-03	1.25E-02	2.12E-04	4.74E-06	9.10E-07	
P/PCB	Endrin	72-20-8	3.08E-04	1.25E-02	2.12E-04	4.74E-06	9.10E-07	
P/PCB	Endrin aldehyde	7421-93-4	1.58E-05	1.42E-02	2.40E-04	5.60E-06	1.07E-06	
P/PCB	Endrin ketone	53494-70-5		1.42E-02	2.40E-04	5.60E-06	1.07E-06	
P/PCB	Heptachlor	76-44-8	4.47E-02	1.12E-02	1.90E-04	5.69E-06	1.09E-06	
P/PCB	Heptachlor epoxide	1024-57-3	3.90E-04	1.32E-02	2.24E-04	4.23E-06	8.12E-07	
P/PCB	Methoxychlor	72-43-5	6.48E-04	1.56E-02	2.64E-04	4.46E-06	8.56E-07	
P/PCB	alpha-BHC	319-84-6	4.35E-04	1.42E-02	2.41E-04	7.34E-06	1.41E-06	
P/PCB	alpha-Chlordane	5103-71-9	1.99E-03	1.18E-02	2.00E-04	4.73E-06	9.08E-07	
P/PCB	beta-BHC	319-85-7	3.05E-05	1.42E-02	2.41E-04	7.34E-06	1.41E-06	
P/PCB	gamma-BHC	58-89-9	5.74E-04	1.42E-02	2.41E-04	7.34E-06	1.41E-06	
P/PCB	gamma-Chlordane	5103-74-2	1.99E-03	1.18E-02	2.00E-04	4.73E-06	9.08E-07	
INORG	Antimony	7440-36-0		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Arsenic	7440-38-2		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Barium	7440-39-3		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Beryllium	7440-41-7		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Cadmium	7440-43-9		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Chromium 3+	16065-83-1		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Chromium 6+	18540-29-9		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Cobalt	7440-48-4		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Copper	7440-50-8		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Cyanide (total)	57-12-5		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Lead	7439-92-1		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Manganese	7439-96-5		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Mercury	7439-97-6	4.67E-01	3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Nickel	7440-02-0		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Selenium	7782-49-2		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Silver	7440-22-4		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Thallium	7440-28-0		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Vanadium	7440-62-2		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
INORG	Zinc	7440-66-6		3.07E-02	5.20E-04	6.30E-06	1.21E-06	
TIC	Acetaldehyde	75-07-0						
TIC	Acetophenone	98-86-2						
TIC	Butanol, 1-	71-36-3	3.61E-04	8.00E-02	1.36E-03	9.30E-06	1.79E-06	3.57E-07
TIC	Caprolactam	105-60-2						
TIC	Chlorodifluoromethane	75-45-6						
TIC	Cyclohexanone	108-94-1						
TIC	Diethyl ether	60-29-7						
TIC	Dioxane, 1,4-	123-91-1						
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5						
TIC	Hexane, n-	110-54-3						
TIC	Phenol, 4,4'-(1-methylethylidene)bis-	80-05-7						
TIC	Phthalic anhydride	85-44-9						

Notes:

Soil porosity	L/L-soil	n	**0.29**	Based on average of porosity values in RI report
Water-filled soil porosity	L/L-soil	ϕ_w	0.15	SSG default
Air-filled soil porosity	L/L-soil	ϕ_a	0.14	Calculated from n - ϕ_w
Thickness capillary fringe	m	L_{cf}	0.5	Based on capillary rise for fine sand
Thickness soil cover - Areas 1 & 4B	m	L	0.9	Depth to water table = 3 to 8 feet (RI report)
Thickness above capillary fringe	m	L_a	0.4	Calculated from L - L_{cf}

Table B-4: Vapor Flux (mg/m^2-s per mg/L) from Covered Ground Water to Ambient Air

Analyte Group	Substance	CASRN	H (unitless)	D_{air} (cm^2/s)	D_G (cm^2/s)	D_{water} (cm^2/s)	D_L (cm^2/s)	J_v (L/m^2-s)
VOC	1,1,1-Trichloroethane	71-55-6	7.05E-01	7.80E-02	1.32E-03	8.80E-06	1.69E-06	3.38E-07
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.41E-02	7.10E-02	1.20E-03	7.90E-06	1.52E-06	3.03E-07
VOC	1,1,2-Trichloroethane	79-00-5	3.74E-02	7.80E-02	1.32E-03	8.80E-06	1.69E-06	3.38E-07
VOC	1,1-Dichloroethane	75-34-3	2.30E-01	7.42E-02	1.26E-03	1.05E-05	2.02E-06	4.03E-07
VOC	1,1-Dichloroethene	75-35-4	1.07E+00	9.00E-02	1.52E-03	1.04E-05	2.00E-06	3.99E-07
VOC	1,2,4-Trimethylbenzene	95-63-6	2.31E-01	8.46E-02	1.43E-03	9.18E-06	1.76E-06	3.52E-07
VOC	1,2-Dichloroethane	107-06-2	4.01E-02	1.04E-01	1.76E-03	9.90E-06	1.90E-06	3.80E-07
VOC	1,2-Dichloroethene (total)	540-59-0	2.30E-01	7.07E-02	1.20E-03	9.18E-06	1.76E-06	3.52E-07
VOC	1,2-Dichloropropane	78-87-5	1.15E-01	7.82E-02	1.32E-03	8.73E-06	1.68E-06	3.35E-07
VOC	1,3,5-Trimethylbenzene	108-67-8		8.46E-02	1.43E-03	9.18E-06	1.76E-06	
VOC	2-Butanone	78-93-3	1.90E-03	8.46E-02	1.43E-03	9.18E-06	1.76E-06	3.52E-07
VOC	2-Hexanone	591-78-6	7.15E-02	8.46E-02	1.43E-03	9.18E-06	1.76E-06	3.52E-07
VOC	4-Methyl-2-pentanone	108-10-1	6.09E-04	8.46E-02	1.43E-03	9.18E-06	1.76E-06	3.52E-07
VOC	Acetone	67-64-1	1.59E-03	1.24E-01	2.10E-03	1.14E-05	2.19E-06	4.38E-07
VOC	Benzene	71-43-2	2.28E-01	8.80E-02	1.49E-03	9.80E-06	1.88E-06	3.76E-07
VOC	Bromodichloromethane	75-27-4	6.56E-02	2.98E-02	5.05E-04	1.06E-05	2.03E-06	4.07E-07
VOC	Carbon Disulfide	75-15-0	1.24E+00	1.04E-01	1.76E-03	1.00E-05	1.92E-06	3.84E-07
VOC	Carbon Tetrachloride	56-23-5	1.25E+00	7.80E-02	1.32E-03	8.80E-06	1.69E-06	3.38E-07
VOC	Chlorobenzene	108-90-7	1.52E-01	7.30E-02	1.24E-03	8.70E-06	1.67E-06	3.34E-07
VOC	Chloroethane	75-00-3	2.83E-01	8.46E-02	1.43E-03	9.18E-06	1.76E-06	3.52E-07
VOC	Chloroform	67-66-3	1.50E-01	1.04E-01	1.76E-03	1.00E-05	1.92E-06	3.84E-07
VOC	Chloromethane	74-87-3		8.46E-02	1.43E-03	9.18E-06	1.76E-06	
VOC	Ethyl Benzene	100-41-4	3.23E-01	7.50E-02	1.27E-03	7.80E-06	1.50E-06	2.99E-07
VOC	Methylene Chloride	75-09-2	8.98E-02	1.01E-01	1.71E-03	1.17E-05	2.25E-06	4.49E-07
VOC	Styrene	100-42-5	1.13E-01	7.10E-02	1.20E-03	8.00E-06	1.54E-06	3.07E-07
VOC	Tetrachloroethene	127-18-4	7.54E-01	7.20E-02	1.22E-03	8.20E-06	1.57E-06	3.15E-07
VOC	Tetrahydrofuran	109-99-9		8.46E-02	1.43E-03	9.18E-06	1.76E-06	
VOC	Toluene	108-88-3	2.72E-01	8.70E-02	1.47E-03	8.60E-06	1.65E-06	3.30E-07
VOC	Trichloroethene	79-01-6	4.22E-01	7.90E-02	1.34E-03	9.10E-06	1.75E-06	3.49E-07
VOC	Vinyl Chloride	75-01-4	1.11E+00	1.06E-01	1.80E-03	1.23E-06	2.36E-07	4.72E-08
VOC	Xylenes (total)	1330-20-7	2.76E-01	7.80E-02	1.32E-03	8.75E-06	1.68E-06	3.36E-07
VOC	cis-1,2-Dichloroethene	156-59-2	1.67E-01	7.36E-02	1.25E-03	1.13E-05	2.17E-06	4.34E-07
VOC	m,p-xylene	36777-61-2	3.08E-01	7.35E-02	1.24E-03	8.12E-06	1.56E-06	3.12E-07
VOC	ortho-xylene	95-47-6	2.13E-01	8.70E-02	1.47E-03	1.00E-05	1.92E-06	3.84E-07
VOC	p-Cymene	99-87-6		8.46E-02	1.43E-03	9.18E-06	1.76E-06	
VOC	trans-1,2-Dichloroethene	156-60-5	3.85E-01	7.07E-02	1.20E-03	1.19E-05	2.28E-06	4.57E-07
SVOC	1,2,4-Trichlorobenzene	120-82-1	5.82E-02	3.00E-02	5.08E-04	8.23E-06	1.58E-06	3.16E-07
SVOC	1,2-Dichlorobenzene	95-50-1	7.79E-02	6.90E-02	1.17E-03	7.90E-06	1.52E-06	3.03E-07
SVOC	1,3-Dichlorobenzene	541-73-1	1.32E-01	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	1,4-Dichlorobenzene	106-46-7	9.96E-02	6.90E-02	1.17E-03	7.90E-06	1.52E-06	3.03E-07
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	4.50E-03	6.02E-02	1.02E-03	7.04E-06	1.35E-06	2.70E-07
SVOC	2,4,5-Trichlorophenol	95-95-4	1.78E-04	2.91E-02	4.93E-04	7.03E-06	1.35E-06	2.70E-07
SVOC	2,4-Dichlorophenol	120-83-2	1.30E-04	3.46E-02	5.86E-04	8.77E-06	1.68E-06	3.37E-07
SVOC	2,4-Dimethylphenol	105-67-9	8.20E-05	5.84E-02	9.89E-04	8.69E-06	1.67E-06	3.34E-07
SVOC	2,4-Dinitrotoluene	121-14-2	3.80E-06	2.03E-01	3.44E-03	7.06E-06	1.36E-06	2.71E-07
SVOC	2,6-Dinitrotoluene	606-20-2	3.06E-05	3.27E-02	5.54E-04	7.26E-06	1.39E-06	2.79E-07
SVOC	2-Chloronaphthalene	91-58-7	2.50E-02	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	2-Methylnaphthalene	91-57-6	2.04E-02	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	2-Methylphenol	95-48-7	4.92E-05	7.40E-02	1.25E-03	8.30E-06	1.59E-06	3.19E-07
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.64E-07	1.94E-02	3.29E-04	6.74E-06	1.29E-06	
SVOC	4-Bromophenyl-phenylether	101-55-3	4.09E-03	4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	4-Chloro-3-methylphenol	59-50-7	1.02E-04	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3	8.99E-03	4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	4-Methylphenol	106-44-5	1.60E-05	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	4-Nitrophenol	100-02-7	1.23E-03	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	Acenaphthene	83-32-9	6.36E-03	4.21E-02	7.13E-04	7.69E-06	1.48E-06	2.95E-07
SVOC	Acenaphthylene	208-96-8	4.66E-03	4.68E-02	7.94E-04	7.04E-06	1.35E-06	2.70E-07
SVOC	Anthracene	120-12-7	2.67E-03	3.24E-02	5.49E-04	7.74E-06	1.49E-06	2.97E-07
SVOC	Benzo(a)anthracene	56-55-3	1.37E-04	5.10E-02	8.64E-04	9.00E-06	1.73E-06	
SVOC	Benzo(a)pyrene	50-32-8	4.63E-05	4.30E-02	7.29E-04	9.00E-06	1.73E-06	
SVOC	Benzo(b)fluoranthene	205-99-2	4.55E-03	2.26E-02	3.83E-04	5.56E-06	1.07E-06	
SVOC	Benzo(g,h,i)perylene	191-24-2	5.72E-06	4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	Benzo(k)fluoranthene	207-08-9	3.40E-05	2.26E-02	3.83E-04	5.56E-06	1.07E-06	
SVOC	Benzoic Acid	65-85-0	6.31E-05	5.36E-02	9.08E-04	7.97E-06	1.53E-06	3.06E-07
SVOC	Benzyl Alcohol	100-51-6		4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	Butylbenzylphthalate	85-68-7	5.17E-05	1.74E-02	2.95E-04	4.83E-06	9.27E-07	
SVOC	Carbazole	86-74-8	6.26E-07	3.90E-02	6.61E-04	7.03E-06	1.35E-06	2.70E-07
SVOC	Chrysene	218-01-9	3.88E-03	2.48E-02	4.20E-04	6.21E-06	1.19E-06	
SVOC	Di-n-butylphthalate	84-74-2	3.85E-08	4.38E-02	7.42E-04	7.86E-06	1.51E-06	
SVOC	Di-n-octylphthalate	117-84-0	2.74E-03	1.51E-02	2.56E-04	3.58E-06	6.87E-07	
SVOC	Dibenzo(a,h)anthracene	53-70-3	6.03E-07	2.02E-02	3.42E-04	5.18E-06	9.94E-07	
SVOC	Dibenzofuran	132-64-9		4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	Diethylphthalate	84-66-2	1.85E-05	2.56E-02	4.34E-04	6.35E-06	1.22E-06	
SVOC	Dimethylphthalate	131-11-3		4.68E-02	7.94E-04	7.04E-06	1.35E-06	
SVOC	Fluoranthene	206-44-0	6.60E-04	3.02E-02	5.12E-04	6.35E-06	1.22E-06	
SVOC	Fluorene	86-73-7	2.61E-03	3.63E-02	6.15E-04	7.88E-06	1.51E-06	3.03E-07
SVOC	Hexachlorobenzene	118-74-1	5.41E-02	5.42E-02	9.18E-04	5.91E-06	1.13E-06	
SVOC	Hexachlorobutadiene	87-68-3	3.34E-01	5.61E-02	9.50E-04	6.16E-06	1.18E-06	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	6.56E-05	1.90E-02	3.22E-04	5.66E-06	1.09E-06	
SVOC	Isophorone	78-59-1	2.72E-04	6.23E-02	1.06E-03	6.76E-06	1.30E-06	2.60E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7	9.23E-05	5.45E-02	9.23E-04	8.17E-06	1.57E-06	3.14E-07
SVOC	N-Nitrosodiphenylamine	86-30-6	2.05E-04	3.12E-02	5.29E-04	6.35E-06	1.22E-06	2.44E-07
SVOC	Naphthalene	91-20-3	1.98E-02	5.90E-02	1.00E-03	7.50E-06	1.44E-06	2.88E-07

Table B-5: Soil PM_{10} Emission

Unlimited Reservoir Model			**Wind Erosion**
Aerodynamic particle size multiplier			0.036
Ground cover fraction		**G**	0.5
Mode of aggregate size distribution	mm		0.53
Threshold friction velocity	m/s	u'_t	0.50
Correction factor			1.25
Corrected friction velocity	m/s	u^*_t	0.62
Roughness height	m	z_0	0.005
Wind speed at 7 m	m/s	u_t	11.3
Mean annual wind speed	m/s	u_m	4.56
u_m/u_t			0.403
$x = 0.886\ u_t/u_m$			2.20
F(x)			0.160
Annual average PM_{10} flux	kg-soil/m^2-s		
Wind Erosion		$J_{10,w}$	5.2E-11
Excavation for Utility Maint. And Construction		$J_{10,C}$	1.0E-07

Table B-6: Air Dispersion Factors

Annual Average

C/Q (kg/m^3 per kg/m^2/s)

Exposure Location:	Area 1		Area 2			Area 3			Area 4A		Area 4B		Area 5A			Area 5B	Area 6		
Activity at Emission Location:	Routine	Exc	Routine	Exc	Const	Routine	Exc	Const	Routine	Exc	Routine	Exc	Routine	Exc	Const	Exc	Routine	Exc	Const
Emission Location:																			
Area 1	1.2E+01	**5.6E-01**	8.2E-01	NA	NA	2.8E-01	NA	NA	4.7E-01	NA	2.3E+00	NA	3.2E-01	2.0E-04	NA	NA	1.8E-01	1.2E-04	NA
Area 2	7.2E-01	NA	1.2E+01	**5.6E-01**	**3.3E+00**	1.6E+00	NA	NA	1.2E-01	NA	2.7E-01	NA	9.7E-01	8.0E-04	3.3E-02	NA	2.1E-01	2.0E-04	8.9E-03
Area 3	8.3E-02	NA	5.5E-01	NA	NA	1.2E+01	**5.6E-01**	**3.3E+00**	2.1E-02	NA	4.6E-02	NA	7.2E-01	1.7E-03	5.8E-02	NA	1.0E-01	3.9E-04	1.7E-02
Area 4A	1.2E+00	NA[1]	6.7E-01	NA[1]	NA[1]	4.4E-01	NA[1]	NA[1]	1.9E+01	NA[1]	8.7E-01	NA[1]	3.4E-01	NA[1]	NA	NA[1]	8.3E-01	NA[1]	NA
Area 4B	7.7E-01	NA	1.0E-01	NA	NA	5.6E-02	NA	NA	2.2E-01	NA	1.3E+01	**5.6E-01**	6.6E-02	9.6E-05	NA	NA	5.4E-02	7.7E-05	NA
Area 5B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.6E-01**	NA	NA	NA

NA = Not Applicable

Bold = Dispersion factor from box model, rather than ISC3.

[1] Excavation is not expected in Area 4A, which is mostly wetlands.

[2] Worker exposures are not evaluated for this area.

Table B-7a: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Current Land Use - Annual Average
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			CURRENT					CURRENT				CURRENT				CURRENT				CURRENT						
Location of Exposure:			AREA 1					AREA 4A				AREA 4B				AREA 5A				AREA 6						
Type of Activity at Emission Location:			Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped				Routine Industrial/Undeveloped				Routine Industrial/Undeveloped				Excavation	Routine Industrial/Undeveloped				Excavation	
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	
C/Q (kg/m^3 per kg/m^2/s)			1.2E+01	7.2E-01	8.3E-02		5.6E-01	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		3.2E-01	9.7E-01	7.2E-01		2.0E-04	1.8E-01	2.1E-01	1.0E-01		1.2E-04	
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6		5.1E-10	3.9E-14	5.1E-10	6.6E-05		8.5E-11	9.9E-15	8.5E-11		1.9E-10	2.2E-14	1.9E-10		6.9E-10	3.4E-13	6.9E-10	2.4E-08		1.5E-10	4.7E-14	1.5E-10	1.4E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.4E-12		1.4E-12	1.8E-07		2.3E-13		2.3E-13		5.1E-13		5.1E-13		1.8E-12		1.8E-12	6.3E-11		3.9E-12		3.9E-13	3.6E-11
VOC	1,1,2-Trichloroethane	79-00-5	8.1E-12			8.1E-12	3.6E-07	3.2E-13			3.2E-13	1.6E-12			1.6E-12	2.2E-13			2.2E-13	1.3E-10	1.2E-13			1.2E-13	7.8E-11
VOC	1,1-Dichloroethane	75-34-3		4.5E-10	3.7E-13	4.5E-10	9.8E-07		7.5E-11	9.4E-14	7.5E-11		1.7E-10	2.1E-13	1.7E-10		6.1E-10	3.2E-12	6.1E-10	3.5E-10		1.3E-10	4.5E-13	1.3E-10	2.1E-10
VOC	1,1-Dichloroethene	75-35-4																								
VOC	1,2,4-Trimethylbenzene	95-63-6																								
VOC	1,2-Dichloroethane	107-06-2		2.5E-10		2.5E-10	1.8E-06		4.1E-11		4.1E-11		9.2E-11		9.2E-11		3.3E-10		3.3E-10	6.4E-10		7.2E-11		7.2E-11	3.8E-10
VOC	1,2-Dichloroethene (total)	540-59-0	7.5E-12	6.3E-10	3.3E-11	6.7E-10	1.1E-05	2.9E-13	1.1E-10	8.3E-12	1.1E-10	1.4E-12	2.4E-10	1.8E-11	2.6E-10	2.0E-13	8.5E-10	2.9E-10	1.1E-09	3.8E-09	1.1E-13	1.8E-10	4.0E-11	2.2E-10	2.3E-09
VOC	1,2-Dichloropropane	78-87-5		1.0E-10	8.2E-14	1.0E-10	9.8E-07		1.7E-11	2.1E-14	1.7E-11		3.8E-11	4.6E-14	3.8E-11		1.4E-10	7.1E-13	1.4E-10	3.5E-10		3.0E-11	9.9E-14	3.0E-11	2.1E-10
VOC	1,3,5-Trimethylbenzene	108-67-8																								
VOC	2-Butanone	78-93-3		1.9E-08		1.9E-08	1.8E-05		3.1E-09		3.1E-09		7.0E-09		7.0E-09		2.5E-08		2.5E-08	6.4E-09		5.4E-09		5.4E-09	3.8E-09
VOC	2-Hexanone	591-78-6		1.2E-09		1.2E-09			2.0E-10		2.0E-10		4.5E-10		4.5E-10		1.6E-09		1.6E-09			3.5E-10		3.5E-10	
VOC	4-Methyl-2-pentanone	108-10-1		3.1E-09		3.1E-09	1.9E-05		5.1E-10		5.1E-10		1.2E-09		1.2E-09		4.1E-09		4.1E-09	6.8E-09		9.0E-10		9.0E-10	4.1E-09
VOC	Acetone	67-64-1		6.0E-09	5.6E-13	6.0E-09	1.8E-05		1.0E-09	1.4E-13	1.0E-09		2.2E-09	3.1E-13	2.2E-09		8.1E-09	4.9E-12	8.1E-09	6.4E-09		1.7E-09	6.8E-13	1.7E-09	3.9E-09
VOC	Benzene	71-43-2		5.8E-10	1.4E-11	5.9E-10	1.4E-05		9.6E-11	3.5E-12	1.0E-10		2.2E-10	7.7E-12	2.2E-10		7.8E-10	1.2E-10	9.0E-10	5.2E-09		1.7E-10	1.7E-11	1.9E-10	3.1E-09
VOC	Bromodichloromethane	75-27-4																								
VOC	Carbon Disulfide	75-15-0	1.3E-12			1.3E-12	1.1E-10	4.9E-14			4.9E-14	2.4E-13			2.4E-13	3.3E-14			3.3E-14	4.0E-14	1.9E-14			1.9E-14	2.4E-14
VOC	Carbon Tetrachloride	56-23-5																								
VOC	Chlorobenzene	108-90-7			2.7E-11	2.7E-11	4.5E-07			6.8E-12	6.8E-12			1.5E-11	1.5E-11			2.3E-10	2.3E-10	1.6E-10			3.2E-11	3.2E-11	9.6E-11
VOC	Chloroethane	75-00-3																								
VOC	Chloroform	67-66-3	1.9E-12	7.1E-10	4.3E-14	7.1E-10	1.3E-05	7.4E-14	1.2E-10	1.1E-14	1.2E-10	3.6E-13	2.7E-10	2.4E-14	2.7E-10	5.0E-14	9.6E-10	3.8E-13	9.6E-10	4.7E-09	2.8E-14	2.1E-10	5.2E-14	2.1E-10	2.8E-09
VOC	Chloromethane	74-87-3																								
VOC	Ethyl Benzene	100-41-4		5.8E-09	6.1E-10	6.4E-09	2.6E-05		9.6E-10	1.5E-10	1.1E-09		2.2E-09	3.4E-10	2.5E-09		7.8E-09	5.3E-09	1.3E-08	9.4E-09		1.7E-09	7.3E-10	2.4E-09	5.6E-09
VOC	Methylene Chloride	75-09-2		5.6E-10	8.7E-13	5.6E-10	1.6E-05		9.4E-11	2.2E-13	9.4E-11		2.1E-10	4.8E-13	2.1E-10		7.6E-10	7.5E-12	7.6E-10	5.6E-09		1.6E-10	1.0E-12	1.6E-10	3.4E-09
VOC	Styrene	100-42-5		3.7E-10	1.0E-10	4.7E-10	4.0E-06		6.2E-11	2.5E-11	8.7E-11		1.4E-10	5.5E-11	1.9E-10		5.0E-10	8.7E-10	1.4E-09	1.4E-09		1.1E-10	1.2E-10	2.3E-10	8.6E-10
VOC	Tetrachloroethene	127-18-4	2.2E-10	4.8E-09	1.1E-09	6.1E-09	3.3E-05	8.7E-12	8.0E-10	2.7E-10	1.1E-09	4.3E-11	1.8E-09	6.0E-10	2.5E-09	5.9E-12	6.5E-09	9.4E-09	1.6E-08	1.2E-08	3.3E-12	1.4E-09	1.3E-09	2.7E-09	7.1E-09
VOC	Tetrahydrofuran	109-99-9																								
VOC	Toluene	108-88-3	8.3E-11	2.5E-08	2.8E-09	2.8E-08	5.4E-04	3.3E-12	4.2E-09	7.0E-10	4.9E-09	1.6E-11	9.5E-09	1.5E-09	1.1E-08	2.2E-12	3.4E-08	2.4E-08	5.8E-08	2.0E-07	1.2E-12	7.4E-09	3.3E-09	1.1E-08	1.2E-07
VOC	Trichloroethene	79-01-6	6.0E-11	2.1E-09	4.3E-10	2.6E-09	1.5E-05	2.3E-12	3.5E-10	1.1E-10	4.6E-10	1.1E-11	7.8E-10	2.4E-10	1.0E-09	1.6E-12	2.8E-09	3.8E-09	6.6E-09	5.5E-09	8.9E-13	6.0E-10	5.2E-10	1.1E-09	3.3E-09
VOC	Vinyl Chloride	75-01-4		4.1E-12		4.1E-12			6.9E-13		6.9E-13		1.6E-12		1.6E-12		5.6E-12		5.6E-12			1.2E-12		1.2E-12	
VOC	Xylenes (total)	1330-20-7	2.9E-09	5.2E-08	2.5E-09	5.7E-08	1.2E-04	1.1E-10	8.6E-09	6.3E-10	9.4E-09	5.5E-10	1.9E-08	1.4E-09	2.1E-08	7.7E-11	7.0E-08	2.1E-08	9.1E-08	4.5E-08	4.3E-11	1.5E-08	3.0E-09	1.8E-08	2.7E-08
VOC	cis-1,2-Dichloroethene	156-59-2		8.7E-12		8.7E-12	5.3E-05		1.4E-12		1.4E-12		3.2E-12		3.2E-12		1.2E-11		1.2E-11	1.9E-08		2.5E-12		2.5E-12	1.2E-08
VOC	m,p-xylene	6777-61-2		4.0E-11		4.0E-11	7.1E-05		6.7E-12		6.7E-12		1.5E-11		1.5E-11		5.4E-11		5.4E-11	2.6E-08		1.2E-11		1.2E-11	1.5E-08
VOC	ortho-xylene	95-47-6		2.0E-11		2.0E-11	1.5E-05		3.4E-12		3.4E-12		7.7E-12		7.7E-12		2.8E-11		2.8E-11	5.2E-09		6.0E-12		6.0E-12	3.1E-09
VOC	p-Cymene	99-87-6																								
VOC	trans-1,2-Dichloroethene	156-60-5																								
SVOC	1,2,4-Trichlorobenzene	120-82-1		3.4E-10		3.4E-10	1.9E-07		5.7E-11		5.7E-11		1.3E-10		1.3E-10		4.6E-10		4.6E-10	7.0E-11		9.9E-11		9.9E-11	4.2E-11
SVOC	1,2-Dichlorobenzene	95-50-1		2.0E-09	2.6E-12	2.0E-09	6.8E-07		3.4E-10	6.5E-13	3.4E-10		7.6E-10	1.4E-12	7.6E-10		2.7E-09	2.2E-11	2.8E-09	2.5E-10		5.9E-10	3.1E-12	5.9E-10	1.5E-10
SVOC	1,3-Dichlorobenzene	541-73-1					4.3E-08													1.5E-11						9.2E-12
SVOC	1,4-Dichlorobenzene	106-46-7		3.4E-11		3.4E-11	2.3E-07		5.7E-12		5.7E-12		1.3E-11		1.3E-11		4.6E-11		4.6E-11	8.5E-11		1.0E-11		1.0E-11	5.1E-11
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																								
SVOC	2,4,5-Trichlorophenol	95-95-4			7.4E-13	7.4E-13				1.9E-13	1.9E-13			4.1E-13	4.1E-13			6.4E-12	6.4E-12				8.9E-13	8.9E-13	
SVOC	2,4-Dichlorophenol	120-83-2					1.9E-07													6.7E-11					4.0E-11
SVOC	2,4-Dimethylphenol	105-67-9		1.2E-09	2.1E-11	1.2E-09	4.8E-07		2.0E-10	5.4E-12	2.1E-10		4.6E-10	1.2E-11	4.7E-10		1.7E-09	1.8E-10	1.8E-09	1.7E-10		3.6E-10	2.6E-11	3.8E-10	1.0E-10
SVOC	2,4-Dinitrotoluene	121-14-2																								
SVOC	2,6-Dinitrotoluene	606-20-2		1.3E-10		1.3E-10			2.2E-11		2.2E-11		4.9E-11		4.9E-11		1.8E-10		1.8E-10			3.8E-11		3.8E-11	
SVOC	2-Chloronaphthalene	91-58-7																								
SVOC	2-Methylnaphthalene	91-57-6	2.1E-10	2.0E-08	7.4E-11	2.0E-08	3.2E-06	8.3E-12	3.3E-09	1.9E-11	3.3E-09	4.1E-11	7.3E-09	4.1E-11	7.4E-09	5.7E-12	2.6E-08	6.4E-10	2.7E-08	1.2E-09	3.2E-12	5.7E-09	8.9E-11	5.8E-09	6.9E-10
SVOC	2-Methylphenol	95-48-7		1.4E-09	2.0E-11	1.4E-09	5.0E-07		2.4E-10	5.2E-12	2.4E-10		5.3E-10	1.1E-11	5.5E-10		1.9E-09	1.8E-10	2.1E-09	1.8E-10		4.2E-10	2.5E-11	4.4E-10	1.1E-10
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.3E-10			1.3E-10	1.2E-08	5.2E-12			5.2E-12	2.5E-11			2.5E-11	3.5E-12			3.5E-12	4.2E-12	2.0E-12			2.0E-12	2.5E-12
SVOC	4-Bromophenyl-phenylether	101-55-3																								
SVOC	4-Chloro-3-methylphenol	59-50-7																								
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																								
SVOC	4-Methylphenol	106-44-5		2.0E-09	2.0E-11	2.0E-09	5.7E-07		3.3E-10	5.0E-12	3.4E-10		7.5E-10	1.1E-11	7.6E-10		2.7E-09	1.7E-10	2.9E-09	2.0E-10		5.8E-10	2.4E-11	6.0E-10	1.2E-10
SVOC	4-Nitrophenol	100-02-7																								
SVOC	Acenaphthene	83-32-9		5.6E-10	1.6E-12	5.7E-10	4.9E-07		9.4E-11	3.9E-13	9.4E-11		2.1E-10	8.7E-13	2.1E-10		7.6E-10	1.4E-11	7.7E-10	1.8E-10		1.6E-10	1.9E-12	1.7E-10	1.1E-10
SVOC	Acenaphthylene	208-96-8	2.3E-10			2.3E-10	2.5E-07	9.1E-12			9.1E-12	4.4E-11			4.4E-11	6.2E-12			6.2E-12	8.9E-11	3.5E-12			3.5E-12	5.4E-11
SVOC	Anthracene	120-12-7	5.6E-11	4.9E-11	2.9E-12	1.1E-10	5.0E-08	2.2E-12	8.1E-12	7.2E-13	1.1E-11	1.1E-11	1.8E-11	1.6E-12	3.1E-11	1.5E-12	6.6E-11	2.5E-11	9.2E-11	1.8E-11	8.4E-13	1.4E-11	3.4E-12	1.9E-11	1.1E-11
SVOC	Benzo(a)anthracene	56-55-3	3.7E-11	1.0E-10	1.0E-11	1.5E-10	6.6E-10	1.4E-12	1.7E-11	2.6E-12	2.1E-11	7.1E-12	3.8E-11	5.8E-12	5.1E-11	9.9E-13	1.4E-10	9.0E-11	2.3E-10	2.4E-13	5.5E-13	3.0E-11	1.3E-11	4.3E-11	1.4E-13
SVOC	Benzo(a)pyrene	50-32-8	5.2E-11	5.6E-11		1.1E-10	9.2E-10	2.0E-12	9.4E-12		1.1E-11	9.9E-12	2.1E-11		3.1E-11	1.4E-12	7.6E-11		7.7E-11	3.3E-13	7.8E-13	1.6E-11		1.7E-11	2.0E-13
SVOC	Benzo(b)fluoranthene	205-99-2	5.4E-11	2.0E-10	1.9E-12	2.6E-10	9.6E-10	2.1E-12	3.3E-11	4.7E-13	3.6E-11	1.0E-11	7.5E-11	1.0E-12	8.6E-11	1.4E-12	2.7E-10	1.6E-11	2.9E-10	3.4E-13	8.1E-13	5.8E-11	2.2E-12	6.1E-11	2.1E-13
SVOC	Benzo(g,h,i)perylene	191-24-2		5.6E-11		5.6E-11			9.4E-12		9.4E-12		2.1E-11		2.1E-11		7.6E-11		7.6E-11			1.6E-11		1.6E-11	
SVOC	Benzo(k)fluoranthene	207-08-9	4.5E-11	2.0E-10	1.9E-12	2.5E-10	8.1E-10	1.8E-12	3.3E-11	4.7E-13	3.5E-11	8.7E-12	7.5E-11	1.0E-12	8.4E-11	1.2E-12	2.7E-10	1.6E-11	2.9E-10	2.9E-13	6.8E-13	5.8E-11	2.2E-12	6.1E-11	1.7E-13
SVOC	Benzoic Acid	65-85-0		4.5E-09		4.5E-09	7.2E-07		7.5E-10		7.5E-10		1.7E-09		1.7E-09		6.1E-09		6.1E-09	2.6E-10		1.3E-09		1.3E-09	1.6E-10
SVOC	Benzyl Alcohol	100-51-6		1.0E-09		1.0E-09			1.7E-10		1.7E-10		3.7E-10		3.7E-10		1.3E-09		1.3E-09			2.9E-10		2.9E-10	
SVOC	Butylbenzylphthalate	85-68-7		1.6E-08	7.4E-11	1.6E-08	5.6E-06		2.6E-09	1.9E-11	2.7E-09		5.9E-09	4.1E-11	6.0E-09		2.1E-08	6.4E-10	2.2E-08	2.0E-09		4.6E-09	8.9E-11	4.7E-09	1.2E-09
SVOC	Carbazole	86-74-8																								
SVOC	Chrysene	218-01-9	4.6E-11	1.4E-10	5.6E-12	1.9E-10	8.2E-10	1.8E-12	2.4E-11	1.4E-12	2.7E-11	8.9E-12	5.4E-11	3.1E-12	6.6E-11	1.2E-12	1.9E-10	4.9E-11	2.4E-10	3.0E-13	7.0E-13	4.2E-11	6.8E-12	4.9E-11	1.8E-13
SVOC	Di-n-butylphthalate	84-74-2	3.2E-11	2.8E-09	6.5E-11	2.9E-09	3.8E-06	1.3E-12	4.7E-10	1.6E-11	4.9E-10	6.1E-12	1.1E-09	3.6E-11	1.1E-09	8.5E-13	3.8E-09	5.6E-10	4.4E-09	1.4E-09	4.8E-13	8.3E-10	7.8E-11	9.1E-10	8.2E-10
SVOC	Di-n-octylphthalate	117-84-0	6.9E-11	4.9E-10	5.6E-12	5.6E-10	4.5E-07	2.7E-12	8.1E-11	1.4E-12	8.6E-11	1.3E-11	1.8E-10	3.1E-12	2.0E-10	1.8E-12	6.6E-10	4.9E-11	7.1E-10	1.6E-10	1.0E-12	1.4E-10	6.8E-12	1.5E-10	9.7E-11
SVOC	Dibenzo(a,h)anthracene	53-70-3																								
SVOC	Dibenzofuran	132-64-9		9.4E-11	1.9E-12	9.6E-11	1.9E-07		1.6E-11	4.7E-13	1.6E-11		3.5E-11	1.0E-12	3.6E-11		1.3E-10	1.6E-11	1.4E-10	6.9E-11		2.7E-11	2.2E-12	3.0E-11	4.1E-11
SVOC	Diethylphthalate	84-66-2		9.3E-10	6.5E-13	9.3E-10	7.0E-07		1.6E-10	1.6E-13	1.6E-10		3.5E-10	3.6E-13	3.5E-10		1.3E-09	5.6E-12	1.3E-09	2.5E-10		2.7E-10	7.8E-13	2.7E-10	1.5E-10
SVOC	Dimethylphthalate	131-11-3		9.8E-09	6.1E-12	9.8E-09	2.4E-06		1.6E-09	1.5E-12	1.6E-09		3.7E-09	3.4E-12	3.7E-09		1.3E-08	5.3E-11	1.3E-08	8.7E-10		2.9E-09	7.3E-12	2.9E-09	5.2E-10
SVOC	Fluoranthene	206-44-0	6.1E-11	1.5E-10	1.5E-11	2.3E-10	1.7E-07	2.4E-12	2.6E-11	3.7E-12	3.2E-11	1.2E-11	5.8E-11	8.2E-12	7.8E-11	1.6E-12	2.1E-10	1.3E-10	3.4E-10	6.1E-11	9.2E-13	4.5E-11	1.8E-11	6.4E-11	3.7E-11
SVOC	Fluorene	86-73-7		6.7E-10	2.6E-12	6.7E-10	4.7E-07		1.1E-10	6.7E-13	1.1E-10		2.5E-10	1.5E-12	2.5E-10		9.0E-10	2.3E-11	9.2E-10	1.7E-10		1.9E-10	3.2E-12	2.0E-10	1.0E-10
SVOC	Hexachlorobenzene	118-74-1	1.8E-11			1.8E-11	3.2E-10	7.1E-13			7.1E-13	3.5E-12			3.5E-12	4.8E-13			4.8E-13	1.2E-13	2.7E-13			2.7E-13	7.0E-14
SVOC	Hexachlorobutadiene	87-68-3		5.1E-10		5.1E-10	2.7E-07		8.6E-11		8.6E-11		1.9E-10		1.9E-10		6.9E-10		6.9E-10	9.8E-11		1.5E-10		1.5E-10	5.9E-11
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2.8E-11	5.3E-11		8.0E-11	4.9E-10	1.1E-12	8.8E-12		9.9E-12	5.3E-12	2.0E-11		2.5E-11	7.4E-13	7.1E-11		7.2E-11	1.8E-13	4.1E-13	1.5E-11		1.6E-11	1.1E-13
SVOC	Isophorone	78-59-1	8.8E-11	8.7E-09	1.7E-10	8.9E-09	9.6E-06	3.4E-12	1.4E-09	4.4E-11	1.5E-09	1.7E-11	3.2E-09	9.6E-11	3.4E-09	2.3E-12	1.2E-08	1.5E-09	1.3E-08	3.4E-09	1.3E-12	2.5E-09	2.1E-10	2.7E-09	2.1E-09

Table B-7a: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Current Land Use - Annual Average
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			**CURRENT**					**CURRENT**					**CURRENT**					**CURRENT**					**CURRENT**				
Location of Exposure:			**AREA 1**					**AREA 4A**					**AREA 4B**					**AREA 5A**					**AREA 6**				
Type of Activity at Emission Location:			Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped					Routine Industrial/Undeveloped					Routine Industrial/Undeveloped				Excavation	Routine Industrial/Undeveloped				Excavation
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1
C/Q (kg/m^3 per kg/m^2/s)			1.2E+01	7.2E-01	8.3E-02		5.6E-01	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		3.2E-01	9.7E-01	7.2E-01		2.0E-04	1.8E-01	2.1E-01	1.0E-01		1.2E-04
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	N-Nitroso-di-n-propylamine	621-64-7																								
SVOC	N-Nitrosodiphenylamine	86-30-6			1.9E-11	1.9E-11				4.7E-12	4.7E-12			1.0E-11	1.0E-11			1.6E-10	1.6E-10			2.2E-11	2.2E-11		
SVOC	Naphthalene	91-20-3		3.8E-09	1.2E-10	3.9E-09	5.1E-06		6.4E-10	3.1E-11	6.7E-10		1.4E-09	6.7E-11	1.5E-09		5.1E-09	1.1E-09	6.2E-09	1.9E-09		1.1E-09	1.5E-10	1.3E-09	1.1E-09
SVOC	Pentachlorophenol	87-86-5		1.7E-09	6.5E-12	1.7E-09	8.8E-07		2.9E-10	1.6E-12	2.9E-10		6.5E-10	3.6E-12	6.6E-10		2.3E-09	5.6E-11	2.4E-09	3.2E-10		5.1E-10	7.8E-12	5.1E-10	1.9E-10
SVOC	Phenanthrene	85-01-8	3.8E-11	6.7E-10	1.3E-11	7.2E-10	4.0E-07	1.5E-12	1.1E-10	3.4E-12	1.2E-10	7.3E-12	2.5E-10	7.4E-12	2.6E-10	1.0E-12	9.0E-10	1.2E-10	1.0E-09	1.5E-10	5.7E-13	1.9E-10	1.6E-11	2.1E-10	8.7E-11
SVOC	Phenol	108-95-2		2.1E-09	2.8E-11	2.1E-09	9.3E-07		3.4E-10	7.0E-12	3.5E-10		7.8E-10	1.5E-11	7.9E-10		2.8E-09	2.4E-10	3.0E-09	3.4E-10		6.0E-10	3.3E-11	6.4E-10	2.0E-10
SVOC	Pyrene	129-00-0	7.5E-11	3.0E-10	1.0E-11	3.9E-10	2.6E-07	2.9E-12	5.0E-11	2.5E-12	5.6E-11	1.4E-11	1.1E-10	5.5E-12	1.3E-10	2.0E-12	4.1E-10	8.7E-11	4.9E-10	9.5E-11	1.1E-12	8.8E-11	1.2E-11	1.0E-10	5.7E-11
SVOC	bis(2-Chloroethyl) ether	111-44-4		7.1E-10		7.1E-10	4.5E-07		1.2E-10		1.2E-10		2.7E-10		2.7E-10		9.6E-10		9.6E-10	1.6E-10		2.1E-10		2.1E-10	9.8E-11
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6.1E-09	1.3E-08	1.9E-09	2.1E-08	1.5E-05	2.4E-10	2.1E-09	4.7E-10	2.9E-09	1.2E-09	4.8E-09	1.0E-09	7.0E-09	1.6E-10	1.7E-08	1.6E-08	3.4E-08	5.3E-09	9.2E-11	3.8E-09	2.2E-09	6.1E-09	3.2E-09
P/PCB	4,4'-DDD	72-54-8		5.5E-11	6.5E-13	5.5E-11	1.6E-07		9.1E-12	1.6E-13	9.3E-12		2.1E-11	3.6E-13	2.1E-11		7.4E-11	5.6E-12	7.9E-11	5.8E-11		1.6E-11	7.8E-13	1.7E-11	3.5E-11
P/PCB	4,4'-DDE	72-55-9		3.3E-11		3.3E-11			5.5E-12		5.5E-12		1.2E-11		1.2E-11		4.5E-11		4.5E-11			9.7E-12		9.7E-12	
P/PCB	4,4'-DDT	50-29-3		4.7E-11		4.7E-11	2.1E-07		7.8E-12		7.8E-12		1.8E-11		1.8E-11		6.3E-11		6.3E-11	7.7E-11		1.4E-11		1.4E-11	4.6E-11
P/PCB	Aldrin	309-00-2		2.3E-10		2.3E-10			3.8E-11		3.8E-11		8.5E-11		8.5E-11		3.1E-10		3.1E-10			6.6E-11		6.6E-11	
P/PCB	Aroclor-1242	3469-21-9	2.5E-10		5.3E-11	3.1E-10	1.4E-06	9.9E-12		1.3E-11	2.3E-11	4.9E-11		2.9E-11	7.8E-11	6.8E-12		4.6E-10	4.6E-10	4.9E-10	3.8E-12		6.3E-11	6.7E-11	3.0E-10
P/PCB	Aroclor-1248	2672-29-6	3.4E-10	1.9E-09	3.0E-11	2.2E-09	9.4E-07	1.3E-11	3.1E-10	7.7E-12	3.3E-10	6.4E-11	7.0E-10	1.7E-11	7.8E-10	8.9E-12	2.5E-09	2.6E-10	2.8E-09	3.4E-10	5.0E-12	5.4E-10	3.6E-11	5.9E-10	2.0E-10
P/PCB	Aroclor-1254	1097-69-1	1.5E-09	1.4E-09	4.0E-11	2.9E-09	1.6E-06	5.9E-11	2.3E-10	1.0E-11	2.9E-10	2.9E-10	5.1E-10	2.2E-11	8.2E-10	4.0E-11	1.8E-09	3.5E-10	2.2E-09	5.7E-10	2.3E-11	3.9E-10	4.8E-11	4.7E-10	3.4E-10
P/PCB	Aroclor-1260	1096-82-5	3.1E-10	1.3E-08		1.3E-08	9.8E-07	1.2E-11	2.2E-09		2.2E-09	6.0E-11	4.9E-09		4.9E-09	8.3E-12	1.7E-08		1.8E-08	3.5E-10	4.7E-12	3.8E-09		3.8E-09	2.1E-10
P/PCB	Dieldrin	60-57-1					1.1E-08													3.9E-12					2.4E-12
P/PCB	Endosulfan I	959-98-8					5.3E-08													1.9E-11					1.2E-11
P/PCB	Endosulfan sulfate	1031-07-8																							
P/PCB	Endrin	72-20-8					7.1E-08													2.6E-11					1.5E-11
P/PCB	Endrin aldehyde	7421-93-4																							
P/PCB	Endrin ketone	3494-70-5	6.9E-12			6.9E-12	6.1E-10	2.7E-13			2.7E-13	1.3E-12			1.3E-12	1.8E-13			1.8E-13	2.2E-13	1.0E-13			1.0E-13	1.3E-13
P/PCB	Heptachlor	76-44-8			3.8E-13	3.8E-13				9.7E-14	9.7E-14			2.1E-13	2.1E-13			3.3E-12	3.3E-12				4.6E-13	4.6E-13	
P/PCB	Heptachlor epoxide	1024-57-3			1.8E-13	1.8E-13				4.6E-14	4.6E-14			1.0E-13	1.0E-13			1.6E-12	1.6E-12				2.2E-13	2.2E-13	
P/PCB	Methoxychlor	72-43-5																							
P/PCB	alpha-BHC	319-84-6		1.2E-11		1.2E-11			2.1E-12		2.1E-12		4.7E-12		4.7E-12		1.7E-11		1.7E-11			3.6E-12		3.6E-12	
P/PCB	alpha-Chlordane	5103-71-9																							
P/PCB	beta-BHC	319-85-7		2.4E-11		2.4E-11			3.9E-12		3.9E-12		8.9E-12		8.9E-12		3.2E-11		3.2E-11			6.9E-12		6.9E-12	
P/PCB	gamma-BHC	58-89-9																							
P/PCB	gamma-Chlordane	5103-74-2					5.4E-08													2.0E-11					1.2E-11
INORG	Antimony	7440-36-0	4.5E-10	2.5E-09	2.9E-10	3.2E-09	7.3E-07	1.8E-11	4.1E-10	7.4E-11	5.0E-10	8.6E-11	9.2E-10	1.6E-10	1.2E-09	1.2E-11	3.3E-09	2.5E-09	5.9E-09	2.6E-10	6.7E-12	7.2E-10	3.5E-10	1.1E-09	1.6E-10
INORG	Arsenic	7440-38-2	1.7E-09	1.8E-10	1.3E-10	2.1E-09	2.2E-07	6.8E-11	3.0E-11	3.4E-11	1.3E-10	3.3E-10	6.9E-11	7.4E-11	4.7E-10	4.6E-11	2.5E-10	1.2E-09	1.4E-09	8.0E-11	2.6E-11	5.3E-11	1.6E-10	2.4E-10	4.8E-11
INORG	Barium	7440-39-3	9.3E-08	3.7E-08	1.1E-08	1.4E-07	1.2E-05	3.6E-09	6.1E-09	2.7E-09	1.2E-08	1.8E-08	1.4E-08	5.9E-09	3.7E-08	2.5E-09	4.9E-08	9.3E-08	1.4E-07	4.3E-09	1.4E-09	1.1E-08	1.3E-08	2.5E-08	2.6E-09
INORG	Beryllium	7440-41-7	2.0E-09	1.2E-11	6.5E-12	2.0E-09	4.4E-08	7.7E-11	2.0E-12	1.6E-12	8.0E-11	3.7E-10	4.4E-12	3.6E-12	3.8E-10	5.2E-11	1.6E-11	5.6E-11	1.2E-10	1.6E-11	2.9E-11	3.4E-12	7.8E-12	4.1E-11	9.5E-12
INORG	Cadmium	7440-43-9	1.1E-09	4.0E-09	6.9E-10	5.7E-09	6.7E-07	4.1E-11	6.6E-10	1.7E-10	8.8E-10	2.0E-10	1.5E-09	3.8E-10	2.1E-09	2.8E-11	5.4E-09	6.0E-09	1.1E-08	2.4E-10	1.6E-11	1.2E-09	8.3E-10	2.0E-09	1.4E-10
INORG	Chromium 3+	6065-83-1	1.7E-08	4.8E-08	4.8E-09	7.0E-08	7.6E-06	6.7E-10	8.0E-09	1.2E-09	9.8E-09	3.3E-09	1.8E-08	2.7E-09	2.4E-08	4.6E-10	6.4E-08	4.2E-08	1.1E-07	2.7E-09	2.6E-10	1.4E-08	5.8E-09	2.0E-08	1.6E-09
INORG	Chromium 6+	8540-29-9	2.9E-09	8.0E-09	8.1E-10	1.2E-08	1.3E-06	1.1E-10	1.3E-09	2.0E-10	1.6E-09	5.5E-10	3.0E-09	4.5E-10	4.0E-09	7.6E-11	1.1E-08	7.0E-09	1.8E-08	4.5E-10	4.3E-11	2.3E-09	9.7E-10	3.3E-09	2.7E-10
INORG	Cobalt	7440-48-4	2.3E-09	5.3E-10	2.5E-10	3.0E-09	5.1E-07	8.8E-11	8.9E-11	6.2E-11	2.4E-10	4.3E-10	2.0E-10	1.4E-10	7.7E-10	6.0E-11	7.2E-10	2.1E-09	2.9E-09	1.8E-10	3.4E-11	1.6E-10	3.0E-10	4.9E-10	1.1E-10
INORG	Copper	7440-50-8	1.7E-08	5.0E-08	5.2E-09	7.2E-08	3.2E-06	6.7E-10	8.3E-09	1.3E-09	1.0E-08	3.3E-09	1.9E-08	2.9E-09	2.5E-08	4.6E-10	6.7E-08	4.5E-08	1.1E-07	1.1E-09	2.6E-10	1.4E-08	6.2E-09	2.1E-08	6.9E-10
INORG	Cyanide (total)	57-12-5	4.9E-10		2.1E-10	7.0E-10	4.3E-07	1.9E-11		5.3E-11	7.2E-11	9.3E-11		1.2E-10	2.1E-10	1.3E-11		1.8E-09	1.8E-09	1.6E-10	7.3E-12		2.5E-10	2.6E-10	9.3E-11
INORG	Lead	7439-92-1	8.1E-08	3.8E-07	4.6E-08	5.1E-07	3.9E-05	3.2E-09	6.4E-08	1.2E-08	7.9E-08	1.5E-08	1.4E-07	2.6E-08	1.9E-07	2.1E-09	5.2E-07	4.0E-07	9.2E-07	1.4E-08	1.2E-09	1.1E-07	5.6E-08	1.7E-07	8.4E-09
INORG	Manganese	7439-96-5	7.8E-07	8.9E-09	6.7E-09	7.9E-07	3.0E-05	3.0E-08	1.5E-09	1.7E-09	3.4E-08	1.5E-07	3.3E-09	3.7E-09	1.6E-07	2.1E-08	1.2E-08	5.8E-08	9.1E-08	1.1E-08	1.2E-08	2.6E-09	8.0E-09	2.2E-08	6.5E-09
INORG	Mercury	7439-97-6	2.4E-09	3.0E-10	4.1E-11	2.7E-09	1.5E-07	9.5E-11	4.9E-11	1.0E-11	1.5E-10	4.6E-10	1.1E-10	2.3E-11	6.0E-10	6.4E-11	4.0E-10	3.6E-10	8.2E-10	5.2E-11	3.6E-11	8.6E-11	5.0E-11	1.7E-10	3.1E-11
INORG	Nickel	7440-02-0	4.8E-09	9.3E-10	2.3E-10	6.0E-09	4.7E-07	1.9E-10	1.5E-10	5.8E-11	4.0E-10	9.2E-10	3.5E-10	1.3E-10	1.4E-09	1.3E-10	1.2E-09	2.0E-09	3.4E-09	1.7E-10	7.2E-11	2.7E-10	2.8E-10	6.2E-10	1.0E-10
INORG	Selenium	7782-49-2	2.7E-10	1.0E-10	7.5E-11	4.5E-10	3.2E-08	1.1E-11	1.7E-11	1.9E-11	4.7E-11	5.2E-11	3.9E-11	4.1E-11	1.3E-10	7.2E-12	1.4E-10	6.5E-10	7.9E-10	1.1E-11	4.1E-12	3.0E-11	9.0E-11	1.2E-10	6.8E-12
INORG	Silver	7440-22-4	1.8E-10	3.7E-10		5.5E-10	1.6E-08	7.1E-12	6.2E-11		6.9E-11	3.5E-11	1.4E-10		1.7E-10	4.8E-12	5.0E-10		5.0E-10	5.8E-12	2.7E-12	1.1E-10		1.1E-10	3.5E-12
INORG	Thallium	7440-28-0		2.7E-11		2.7E-11			4.5E-12		4.5E-12		1.0E-11		1.0E-11		3.7E-11		3.7E-11			7.9E-12		7.9E-12	
INORG	Vanadium	7440-62-2	7.3E-09	3.6E-10	1.1E-10	7.8E-09	6.2E-07	2.9E-10	6.0E-11	2.9E-11	3.8E-10	1.4E-09	1.4E-10	6.3E-11	1.6E-09	1.9E-10	4.9E-10	9.9E-10	1.7E-09	2.2E-10	1.1E-10	1.1E-10	1.4E-10	3.5E-10	1.3E-10
INORG	Zinc	7440-66-6	6.1E-08	1.2E-07	6.6E-08	2.5E-07	1.7E-05	2.4E-09	2.1E-08	1.7E-08	4.0E-08	1.2E-08	4.7E-08	3.7E-08	9.5E-08	1.6E-09	1.7E-07	5.7E-07	7.4E-07	6.1E-09	9.1E-10	3.6E-08	7.9E-08	1.2E-07	3.7E-09
TIC	Acetaldehyde	75-07-0																							
TIC	Acetophenone	98-86-2																							
TIC	Butanol, 1-	71-36-3																							
TIC	Caprolactam	105-60-2																							
TIC	Chlorodifluoromethane	75-45-6																							
TIC	Cyclohexanone	108-94-1																							
TIC	Diethyl ether	60-29-7																							
TIC	Dioxane, 1,4-	123-91-1																							
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																							
TIC	Hexane, n-	110-54-3		5.6E-12		5.6E-12			9.4E-13		9.4E-13		2.1E-12		2.1E-12		7.6E-12		7.6E-12			1.6E-12		1.6E-12	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7																							
TIC	Phthalic anhydride	85-44-9					2.5E-07													9.2E-11					5.5E-11

Table B-7b: Particulate Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	FUTURE AREA 1: From Area 1	FUTURE AREA 1: Routine Industrial From Area 2	FUTURE AREA 1: Routine Industrial From Area 3	FUTURE AREA 1: Total At Area	FUTURE AREA 1: Excavation At Area	FUTURE AREA 2: From Area 1	FUTURE AREA 2: Routine Industrial From Area 2	FUTURE AREA 2: Routine Industrial From Area 3	FUTURE AREA 2: Total At Area	FUTURE AREA 2: Excavation At Area	FUTURE AREA 2: Const (0-10') At Area	FUTURE AREA 2: Const (0-4') At Area	FUTURE AREA 3: From Area 1	FUTURE AREA 3: Routine Industrial From Area 2	FUTURE AREA 3: Routine Industrial From Area 3	FUTURE AREA 3: Total At Area	FUTURE AREA 3: Excavation At Area	FUTURE AREA 3: Const (0-10') At Area	FUTURE AREA 3: Const (0-4') At Area	FUTURE AREA 4A: From Area 1	FUTURE AREA 4A: Routine Industrial From Area 2	FUTURE AREA 4A: Routine Industrial From Area 3	FUTURE AREA 4A: Total At Area	FUTURE AREA 4B: From Area 1	FUTURE AREA 4B: Routine Industrial From Area 2	FUTURE AREA 4B: Routine Industrial From Area 3	FUTURE AREA 4B: Total At Area	FUTURE AREA 4B: Excavation At Area	FUTURE AREA 5A: From Area 1	FUTURE AREA 5A: Routine Industrial From Area 2	FUTURE AREA 5A: Routine Industrial From Area 3	FUTURE AREA 5A: Total At Area	FUTURE AREA 5A: Excavation From Area 1	FUTURE AREA 5A: Excavation From Area 2	FUTURE AREA 5A: Excavation From Area 3
	C/Q (kg/m³ per kg/m²/s)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01	3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03
			C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
VOC	1,1,1-Trichloroethane	71-55-6		5.1E-10	3.9E-14	5.1E-10	6.6E-05		8.5E-09	2.6E-13	8.5E-09	7.6E-07	4.5E-06	1.0E-08		1.1E-09	5.6E-12	1.1E-09	3.2E-05	1.9E-04	3.0E-09		8.5E-11	9.9E-15	8.5E-11		1.9E-10	2.2E-14	1.9E-10			6.9E-10	3.4E-13	6.9E-10	2.4E-08	1.1E-09	9.8E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.4E-12		1.4E-12	1.8E-07		2.3E-11		2.3E-11	2.0E-09	1.2E-08			3.0E-12		3.0E-12					2.3E-13		2.3E-13		5.1E-13		5.1E-13			1.8E-12		1.8E-12	6.3E-11	2.9E-12	
VOC	1,1,2-Trichloroethane	79-00-5	8.1E-12			8.1E-12	3.6E-07	5.6E-13			5.6E-13				1.9E-13			1.9E-13				3.2E-13			3.2E-13	1.6E-12			1.6E-12		2.2E-13			2.2E-13	1.3E-10		
VOC	1,1-Dichloroethane	75-34-3		4.5E-10	3.7E-13	4.5E-10	9.8E-07		7.5E-09	2.5E-12	7.5E-09	6.6E-07	4.0E-06			1.0E-09	5.4E-11	1.1E-09	7.7E-08	4.6E-07	3.9E-08		7.5E-11	9.4E-14	7.5E-11		1.7E-10	2.1E-13	1.7E-10			6.1E-10	3.2E-12	6.1E-10	3.5E-10	9.6E-10	2.3E-10
VOC	1,1-Dichloroethene	75-35-4												2.9E-09																							
VOC	1,2,4-Trimethylbenzene	95-63-6																																			
VOC	1,2-Dichloroethane	107-06-2		2.5E-10		2.5E-10	1.8E-06		4.1E-09		4.1E-09	3.6E-07	2.2E-06			5.5E-10		5.5E-10	4.0E-08	2.4E-07			4.1E-11		4.1E-11		9.2E-11		9.2E-11			3.3E-10		3.3E-10	6.4E-10	5.2E-10	1.2E-10
VOC	1,2-Dichloroethene (total)	540-59-0	7.5E-12	6.3E-10	3.3E-11	6.7E-10	1.1E-05	5.1E-13	1.1E-08	2.2E-10	1.1E-08	9.3E-07	5.6E-06		1.8E-13	1.4E-09	4.8E-09	6.2E-09	1.2E-06	7.4E-06	2.5E-06	2.9E-13	1.1E-10	8.3E-12	1.1E-10	1.4E-12	2.4E-10	1.8E-11	2.6E-10	6.7E-10	2.0E-13	8.5E-10	2.9E-10	1.1E-09	3.8E-09	1.3E-09	3.8E-09
VOC	1,2-Dichloropropane	78-87-5		1.0E-10	8.2E-14	1.0E-10	9.8E-07		1.7E-09	5.5E-13	1.7E-09	1.5E-07	9.0E-07			2.3E-10	1.2E-11	2.4E-10	2.5E-08	1.5E-07	6.3E-09		1.7E-11	2.1E-14	1.7E-11		3.8E-11	4.6E-14	3.8E-11			1.4E-10	7.1E-13	1.4E-10	3.5E-10	2.2E-10	7.5E-11
VOC	1,3,5-Trimethylbenzene	108-67-8																																			
VOC	2-Butanone	78-93-3		1.9E-08		1.9E-08	1.8E-05		3.1E-07		3.1E-07	2.8E-05	1.7E-04	1.7E-04		4.1E-08		4.1E-08	1.5E-03	9.1E-03	1.7E-02		3.1E-09		3.1E-09		7.0E-09		7.0E-09			2.5E-08		2.5E-08	6.4E-09	4.0E-08	4.6E-06
VOC	2-Hexanone	591-78-6		1.2E-09		1.2E-09			2.0E-08		2.0E-08	1.8E-06	1.1E-05	1.7E-05		2.6E-09		2.6E-09	2.2E-08	1.3E-07			2.0E-10		2.0E-10		4.5E-10		4.5E-10			1.6E-09		1.6E-09		2.5E-09	6.6E-11
VOC	4-Methyl-2-pentanone	108-10-1		3.1E-09		3.1E-09	1.9E-05		5.1E-08		5.1E-08	4.5E-06	2.7E-05	5.0E-05		6.8E-09		6.8E-09	2.5E-04	1.5E-03	6.3E-05		5.1E-10		5.1E-10		1.2E-09		1.2E-09			4.1E-09		4.1E-09	6.8E-09	6.6E-09	7.8E-07
VOC	Acetone	67-64-1		6.0E-09	5.6E-13	6.0E-09	1.8E-05		1.0E-07	3.7E-12	1.0E-07	8.8E-06	5.3E-05	1.6E-04		1.3E-08	8.1E-11	1.3E-08	1.4E-04	8.6E-04	1.8E-07		1.0E-09	1.4E-13	1.0E-09		2.2E-09	3.1E-13	2.2E-09	1.4E-09		8.1E-09	4.9E-12	8.1E-09	6.4E-09	1.3E-08	4.4E-07
VOC	Benzene	71-43-2		5.8E-10	1.4E-11	5.9E-10	1.4E-05		9.6E-09	9.2E-11	9.7E-09	8.5E-07	5.1E-06	7.3E-06		1.3E-09	2.0E-09	3.3E-09	6.7E-06	4.0E-05	1.1E-06		9.6E-11	3.5E-12	1.0E-10		2.2E-10	7.7E-12	2.2E-10			7.8E-10	1.2E-10	9.0E-10	5.2E-09	1.2E-09	2.1E-08
VOC	Bromodichloromethane	75-27-4																																			
VOC	Carbon Disulfide	75-15-0	1.3E-12			1.3E-12	1.1E-10	8.6E-14			8.6E-14				2.9E-14			2.9E-14				4.9E-14			4.9E-14	2.4E-13			2.4E-13		3.3E-14			3.3E-14	4.0E-14		
VOC	Carbon Tetrachloride	56-23-5																																			
VOC	Chlorobenzene	108-90-7			2.7E-11	2.7E-11	4.5E-07			1.8E-10	1.8E-10						3.9E-09	3.9E-09	4.7E-06	2.8E-05	2.1E-06			6.8E-12	6.8E-12			1.5E-11	1.5E-11				2.3E-10	2.3E-10	1.6E-10		1.4E-08
VOC	Chloroethane	75-00-3																																			
VOC	Chloroform	67-66-3	1.9E-12	7.1E-10	4.3E-14	7.1E-10	1.3E-05	1.3E-13	1.2E-08	2.9E-13	1.2E-08	1.0E-06	6.3E-06		4.4E-14	1.6E-09	6.3E-12	1.6E-09	2.4E-10	1.5E-09	3.3E-09	7.4E-14	1.2E-10	1.1E-14	1.2E-10	3.6E-13	2.7E-10	2.4E-14	2.7E-10		5.0E-14	9.6E-10	3.8E-13	9.6E-10	4.7E-09	1.5E-09	7.5E-13
VOC	Chloromethane	74-87-3																																			
VOC	Ethyl Benzene	100-41-4		5.8E-09	6.1E-10	6.4E-09	2.6E-05		9.6E-08	4.0E-09	1.0E-07	8.5E-06	5.1E-05	1.0E-04		1.3E-08	8.8E-08	1.0E-07	1.1E-04	6.5E-04	4.1E-04		9.6E-10	1.5E-10	1.1E-09		2.2E-09	3.4E-10	2.5E-09			7.8E-09	5.3E-09	1.3E-08	9.4E-09	1.2E-08	3.3E-07
VOC	Methylene Chloride	75-09-2		5.6E-10	8.7E-13	5.6E-10	1.6E-05		9.4E-09	5.7E-12	9.4E-09	8.3E-07	5.0E-06	6.7E-09		1.2E-09	1.3E-10	1.4E-09	1.2E-07	7.3E-07	3.7E-08		9.4E-11	2.2E-13	9.4E-11		2.1E-10	4.8E-13	2.1E-10			7.6E-10	7.5E-12	7.6E-10	5.6E-09	1.2E-09	3.7E-10
VOC	Styrene	100-42-5		3.7E-10	1.0E-10	4.7E-10	4.0E-06		6.2E-09	6.6E-10	6.9E-09	5.5E-07	3.3E-06			8.3E-10	1.4E-08	1.5E-08	1.2E-05	7.0E-05	7.7E-06		6.2E-11	2.5E-11	8.7E-11		1.4E-10	5.5E-11	1.9E-10			5.0E-10	8.7E-10	1.4E-09	1.4E-09	7.9E-10	3.6E-08
VOC	Tetrachloroethene	127-18-4	2.2E-10	4.8E-09	1.1E-09	6.1E-09	3.3E-05	1.5E-11	8.0E-08	7.2E-09	8.8E-08	7.1E-06	4.3E-05	1.2E-04	5.2E-12	1.1E-08	1.6E-07	1.7E-07	2.0E-04	1.2E-03	1.2E-04	8.7E-12	8.0E-10	2.7E-10	1.1E-09	4.3E-11	1.8E-09	6.0E-10	2.5E-09		5.9E-12	6.5E-09	9.4E-09	1.6E-08	1.2E-08	1.0E-08	6.0E-07
VOC	Tetrahydrofuran	109-99-9																																			
VOC	Toluene	108-88-3	8.3E-11	2.5E-08	2.8E-09	2.8E-08	5.4E-04	5.7E-12	4.2E-07	1.8E-08	4.4E-07	3.7E-05	2.2E-04	2.5E-04	1.9E-12	5.6E-08	4.0E-07	4.6E-07	7.1E-04	4.2E-03	2.1E-03	3.3E-12	4.2E-09	7.0E-10	4.9E-09	1.6E-11	9.5E-09	1.5E-09	1.1E-08		2.2E-12	3.4E-08	2.4E-08	5.8E-08	2.0E-07	5.4E-08	2.2E-06
VOC	Trichloroethene	79-01-6	6.0E-11	2.1E-09	4.3E-10	2.6E-09	1.5E-05	4.1E-12	3.5E-08	2.9E-09	3.7E-08	3.1E-06	1.8E-05	5.0E-05	1.4E-12	4.6E-09	6.3E-08	6.7E-08	8.1E-05	4.8E-04	3.3E-05	2.3E-12	3.5E-10	1.1E-10	4.6E-10	1.1E-11	7.8E-10	2.4E-10	1.0E-09		1.6E-12	2.8E-09	3.8E-09	6.6E-09	5.5E-09	4.4E-09	2.5E-07
VOC	Vinyl Chloride	75-01-4		4.1E-12		4.1E-12			6.9E-11		6.9E-11	6.1E-09	3.7E-08			9.2E-12		9.2E-12					6.9E-13		6.9E-13		1.6E-12		1.6E-12			5.6E-12		5.6E-12		8.8E-12	
VOC	Xylenes (total)	1330-20-7	2.9E-09	5.2E-08	2.5E-09	5.7E-08	1.2E-04	2.0E-10	8.6E-07	1.6E-08	8.8E-07	7.6E-05	4.6E-04	1.2E-03	6.7E-11	1.2E-07	3.6E-07	4.7E-07	5.8E-04	3.5E-03	2.8E-03	1.1E-10	8.6E-09	6.3E-10	9.4E-09	5.5E-10	1.9E-08	1.4E-09	2.1E-08		7.7E-11	7.0E-08	2.1E-08	9.1E-08	4.5E-08	1.1E-07	1.8E-06
VOC	cis-1,2-Dichloroethene	156-59-2		8.7E-12		8.7E-12	5.3E-05		1.4E-10		1.4E-10	1.3E-08	7.7E-08	4.7E-08		1.9E-11		1.9E-11	9.8E-10	5.9E-09			1.4E-12		1.4E-12		3.2E-12		3.2E-12			1.2E-11		1.2E-11	1.9E-08	1.8E-11	3.0E-12
VOC	m,p-xylene	6777-61-2		4.0E-11		4.0E-11	7.1E-05		6.7E-10		6.7E-10	6.0E-08	3.6E-07	1.1E-08		9.0E-11		9.0E-11	4.9E-06	3.0E-05			6.7E-12		6.7E-12		1.5E-11		1.5E-11			5.4E-11		5.4E-11	2.6E-08	8.6E-11	1.5E-08
VOC	ortho xylene	95-47-6		2.0E-11		2.0E-11	1.5E-05		3.4E-10		3.4E-10	3.0E-08	1.8E-07	4.0E-09		4.5E-11		4.5E-11	1.9E-06	1.1E-05	3.8E-09		3.4E-12		3.4E-12		7.7E-12		7.7E-12			2.8E-11		2.8E-11	5.2E-09	4.4E-11	5.7E-09
VOC	p-Cymene	99-87-6																																			
VOC	trans 1,2-Dichloroethene	156-60-5																																			
SVOC	1,2,4-Trichlorobenzene	120-82-1		3.4E-10		3.4E-10	1.9E-07		5.7E-09		5.7E-09	5.0E-07	3.0E-06			7.6E-10		7.6E-10					5.7E-11		5.7E-11		1.3E-10		1.3E-10			4.6E-10		4.6E-10	7.0E-11	7.2E-10	
SVOC	1,2-Dichlorobenzene	95-50-1		2.0E-09	2.6E-12	2.0E-09	6.8E-07		3.4E-08	1.7E-11	3.4E-08	3.0E-06	1.8E-05	7.0E-05		4.5E-09	3.7E-10	4.9E-09	1.8E-08	1.1E-07	1.3E-07		3.4E-10	6.5E-13	3.4E-10		7.6E-10	1.4E-12	7.6E-10			2.7E-09	2.2E-11	2.8E-09	2.5E-10	4.3E-09	5.5E-11
SVOC	1,3-Dichlorobenzene	541-73-1					4.3E-08																												1.5E-11		
SVOC	1,4-Dichlorobenzene	106-46-7		3.4E-11		3.4E-11	2.3E-07		5.7E-10		5.7E-10	5.1E-08	3.0E-07			7.6E-11		7.6E-11	5.2E-09	3.1E-08			5.7E-12		5.7E-12		1.3E-11		1.3E-11			4.6E-11		4.6E-11	8.5E-11	7.3E-11	1.6E-11
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																																			
SVOC	2,4,5-Trichlorophenol	95-95-4			7.4E-13	7.4E-13				4.9E-12	4.9E-12						1.1E-10	1.1E-10	9.4E-09	5.7E-08	5.7E-08			1.9E-13	1.9E-13			4.1E-13	4.1E-13				6.4E-12	6.4E-12			2.9E-11
SVOC	2,4-Dichlorophenol	120-83-2					1.9E-07																												6.7E-11		
SVOC	2,4-Dimethylphenol	105-67-9		1.2E-09	2.1E-11	1.2E-09	4.8E-07		2.0E-08	1.4E-10	2.1E-08	1.8E-06	1.1E-05	2.9E-05		2.7E-09	3.1E-09	5.8E-09	9.1E-07	5.4E-06	1.6E-06		2.0E-10	5.4E-12	2.1E-10		4.6E-10	1.2E-11	4.7E-10			1.7E-09	1.8E-10	1.8E-09	1.7E-10	2.6E-09	2.8E-09
SVOC	2,4-Dinitrotoluene	121-14-2																	4.7E-08	2.8E-07																	1.4E-10
SVOC	2,6-Dinitrotoluene	606-20-2		1.3E-10		1.3E-10			2.2E-09		2.2E-09	1.9E-07	1.2E-06			2.9E-10		2.9E-10					2.2E-11		2.2E-11		4.9E-11		4.9E-11			1.8E-10		1.8E-10		2.8E-10	
SVOC	2-Chloronaphthalene	91-58-7																																			
SVOC	2-Methylnaphthalene	91-57-6	2.1E-10	2.0E-08	7.4E-11	2.0E-08	3.2E-06	1.5E-11	3.3E-07	4.9E-10	3.3E-07	2.9E-05	1.7E-04	1.1E-05	5.0E-12	4.3E-08	1.1E-08	5.4E-08	2.8E-06	1.7E-05	1.0E-05	8.3E-12	3.3E-09	1.9E-11	3.3E-09	4.1E-11	7.3E-09	4.1E-11	7.4E-09	1.7E-09	5.7E-12	2.6E-08	6.4E-10	2.7E-08	1.2E-09	4.2E-08	8.7E-09
SVOC	2-Methylphenol	95-48-7		1.4E-09	2.0E-11	1.4E-09	5.0E-07		2.4E-08	1.4E-10	2.4E-08	2.1E-06	1.3E-05	4.0E-05		3.2E-09	2.9E-09	6.1E-09	5.4E-07	3.2E-06	1.6E-06		2.4E-10	5.2E-12	2.4E-10		5.3E-10	1.1E-11	5.5E-10			1.9E-09	1.8E-10	2.1E-09	1.8E-10	3.0E-09	1.6E-09
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.3E-10			1.3E-10	1.2E-08	9.0E-12			9.0E-12				3.1E-12			3.1E-12				5.2E-12			5.2E-12	2.5E-11			2.5E-11		3.5E-12			3.5E-12	4.2E-12		
SVOC	4-Bromophenyl-phenylether	101-55-3																																			
SVOC	4-Chloro-3-methylphenol	59-50-7																																			
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																																			
SVOC	4-Methylphenol	106-44-5		2.0E-09	2.0E-11	2.0E-09	5.7E-07		3.3E-08	1.3E-10	3.3E-08	2.9E-06	1.8E-05	6.0E-05		4.4E-09	2.9E-09	7.3E-09	5.0E-07	3.0E-06	8.1E-07		3.3E-10	5.0E-12	3.4E-10		7.5E-10	1.1E-11	7.6E-10			2.7E-09	1.7E-10	2.9E-09	2.0E-10	4.2E-09	1.5E-09
SVOC	4-Nitrophenol	100-02-7																	3.7E-09	2.2E-08																	1.1E-11
SVOC	Acenaphthene	83-32-9		5.6E-10	1.6E-12	5.7E-10	4.9E-07		9.4E-09	1.0E-11	9.4E-09	8.3E-07	5.0E-06			1.3E-09	2.3E-10	1.5E-09	3.6E-08	2.1E-07	1.2E-07		9.4E-11	3.9E-13	9.4E-11		2.1E-10	8.7E-13	2.1E-10			7.6E-10	1.4E-11	7.7E-10	1.8E-10	1.2E-09	1.1E-10
SVOC	Acenaphthylene	208-96-8	2.3E-10			2.3E-10	2.5E-07	1.6E-11			1.6E-11				5.4E-12			5.4E-12				9.1E-12			9.1E-12	4.4E-11			4.4E-11	1.6E-08	6.2E-12			6.2E-12	8.9E-11		
SVOC	Anthracene	120-12-7	5.6E-11	4.9E-11	2.9E-12	1.1E-10	5.0E-08	3.8E-12	8.1E-10	1.9E-11	8.4E-10	7.2E-08	4.3E-07		1.3E-12	1.1E-10	4.1E-10	5.2E-10	6.1E-08	3.6E-07	2.2E-07	2.2E-12	8.1E-12	7.2E-13	1.1E-11	1.1E-11	1.8E-11	1.6E-12	3.1E-11	1.4E-08	1.5E-12	6.6E-11	2.5E-11	9.2E-11	1.8E-11	1.0E-10	1.9E-10
SVOC	Benzo(a)anthracene	56-55-3	3.7E-11	1.0E-10	1.0E-11	1.5E-10	6.6E-10	2.5E-12	1.7E-09	6.9E-11	1.8E-09	1.5E-07	9.0E-07		8.6E-13	2.3E-10	1.5E-09	1.7E-09	1.2E-07	7.2E-07	5.4E-07	1.4E-12	1.7E-11	2.6E-12	2.1E-11	7.1E-12	3.8E-11	5.8E-12	5.1E-11	2.0E-08	9.9E-13	1.4E-10	9.0E-11	2.3E-10	2.4E-13	2.2E-10	3.7E-10
SVOC	Benzo(a)pyrene	50-32-8	5.2E-11	5.6E-11		1.1E-10	9.2E-10	3.5E-12	9.4E-10		9.4E-10	8.3E-08	5.0E-07		1.2E-12	1.3E-10		1.3E-10	7.8E-08	4.7E-07	4.7E-07	2.0E-12	9.4E-12		1.1E-11	9.9E-12	2.1E-11		3.1E-11	2.2E-08	1.4E-12	7.6E-11		7.7E-11	3.3E-13	1.2E-10	2.4E-10
SVOC	Benzo(b)fluoranthene	205-99-2	5.4E-11	2.0E-10	1.9E-12	2.6E-10	9.6E-10	3.7E-12	3.3E-09	1.2E-11	3.3E-09	2.9E-07	1.8E-06		1.3E-12	4.4E-10	2.7E-10	7.1E-10	1.8E-07	1.1E-06	7.2E-07	2.1E-12	3.3E-11	4.7E-13	3.6E-11	1.0E-11	7.5E-11	1.0E-12	8.6E-11	2.4E-08	1.4E-12	2.7E-10	1.6E-11	2.9E-10	3.4E-13	4.2E-10	5.5E-10
SVOC	Benzo(g,h,i)perylene	191-24-2		5.6E-11		5.6E-11			9.4E-10		9.4E-10	8.3E-08	5.0E-07			1.3E-10		1.3E-10	6.1E-08	3.7E-07	3.7E-07		9.4E-12		9.4E-12		2.1E-11		2.1E-11	1.6E-08		7.6E-11		7.6E-11		1.2E-10	1.9E-10
SVOC	Benzo(k)fluoranthene	207-08-9	4.5E-11	2.0E-10	1.9E-12	2.5E-10	8.1E-10	3.1E-12	3.3E-09	1.2E-11	3.3E-09	2.9E-07	1.8E-06		1.1E-12	4.4E-10	2.7E-10	7.1E-10	1.8E-07	1.1E-06	7.2E-07	1.8E-12	3.3E-11	4.7E-13	3.5E-11	8.7E-12	7.5E-11	1.0E-12	8.4E-11	2.3E-08	1.2E-12	2.7E-10	1.6E-11	2.9E-10	2.9E-13	4.2E-10	5.5E-10
SVOC	Benzoic Acid	65-85-0		4.5E-09		4.5E-09	7.2E-07		7.5E-08		7.5E-08	6.7E-06	4.0E-05			1.0E-08		1.0E-08	1.1E-05	6.3E-05			7.5E-10		7.5E-10		1.7E-09		1.7E-09			6.1E-09		6.1E-09	2.6E-10	9.6E-09	3.2E-08
SVOC	Benzyl Alcohol	100-51-6		1.0E-09		1.0E-09			1.7E-08		1.7E-08	1.5E-06	8.8E-06			2.2E-09		2.2E-09					1.7E-10		1.7E-10		3.7E-10		3.7E-10			1.3E-09		1.3E-09		2.1E-09	
SVOC	Butylbenzylphthalate	85-68-7		1.6E-08	7.4E-11	1.6E-08	5.6E-06		2.6E-07	4.9E-10	2.6E-07	2.3E-05	1.4E-04			3.5E-08	1.1E-08	4.6E-08	1.7E-06	1.0E-05	1.1E-05		2.6E-09	1.9E-11	2.7E-09		5.9E-09	4.1E-11	6.0E-09			2.1E-08	6.4E-10	2.2E-08	2.0E-09	3.4E-08	5.1E-09
SVOC	Carbazole	86-74-8																												2.0E-09							
SVOC	Chrysene	218-01-9	4.6E-11	1.4E-10	5.6E-12	1.9E-10	8.2E-10	3.2E-12	2.4E-09	3.7E-11	2.4E-09	2.1E-07	1.3E-06		1.1E-12	3.2E-10	8.1E-10	1.1E-09	8.6E-08	5.1E-07	4.3E-07	1.8E-12	2.4E-11	1.4E-12	2.7E-11	8.9E-12	5.4E-11	3.1E-12	6.6E-11	2.2E-08	1.2E-12	1.9E-10	4.9E-11	2.4E-10	3.0E-13	3.0E-10	2.6E-10
SVOC	Di-n-butylphthalate	84-74-2	3.2E-11	2.8E-09	6.5E-11	2.9E-09	3.8E-06	2.2E-12	4.7E-08	4.3E-10	4.8E-08	4.2E-06	2.5E-05	1.7E-05	7.5E-13	6.3E-09	9.4E-09	1.6E-08	3.1E-06	1.9E-05	1.4E-05	1.3E-12	4.7E-10	1.6E-11	4.9E-10	6.1E-12	1.1E-09	3.6E-11	1.1E-09	4.7E-09	8.5E-13	3.8E-09	5.6E-10	4.4E-09	1.4E-09	6.0E-09	9.6E-09
SVOC	Di-n-octylphthalate	117-84-0	6.9E-11	4.9E-10	5.6E-12	5.6E-10	4.5E-07	4.7E-12	8.1E-09	3.7E-11	8.2E-09	7.2E-07	4.3E-06		1.6E-12	1.1E-09	8.1E-10	1.9E-09	7.2E-07	4.3E-06	4.9E-06	2.7E-12	8.1E-11	1.4E-12	8.6E-11	1.3E-11	1.8E-10	3.1E-12	2.0E-10		1.8E-12	6.6E-10	4.9E-11	7.1E-10	1.6E-10	1.0E-09	2.2E-09
SVOC	Dibenzo(a,h)anthracene	53-70-3																	1.5E-08	9.0E-08	9.0E-08									1.6E-08							4.6E-11
SVOC	Dibenzofuran	132-64-9		9.4E-11	1.9E-12	9.6E-11	1.9E-07		1.6E-09	1.2E-11	1.6E-09	1.4E-07	8.3E-07			2.1E-10	2.7E-10	4.8E-10	3.3E-08	2.0E-07	1.3E-07		1.6E-11	4.7E-13	1.6E-11		3.5E-11	1.0E-12	3.6E-11			1.3E-10	1.6E-11	1.4E-10	6.9E-11	2.0E-10	1.0E-10
SVOC	Diethylphthalate	84-66-2		9.3E-10	6.5E-13	9.3E-10	7.0E-07		1.6E-08	4.3E-12	1.6E-08	1.4E-06	8.2E-06			2.1E-09	9.4E-11	2.2E-09	2.2E-07	1.3E-06	8.6E-07		1.6E-10	1.6E-13	1.6E-10		3.5E-10	3.6E-13	3.5E-10			1.3E-09	5.6E-12	1.3E-09	2.5E-10	2.0E-09	6.9E-10
SVOC	Dimethylphthalate	131-11-3		9.8E-09	6.1E-12	9.8E-09	2.4E-06		1.6E-07	4.0E-11	1.6E-07	1.4E-05	8.7E-05	3.7E-05		2.2E-08	8.8E-10	2.3E-08	4.8E-07	2.9E-06	4.7E-07		1.6E-09	1.5E-12	1.6E-09		3.7E-09	3.4E-12	3.7E-09			1.3E-08	5.3E-11	1.3E-08	8.7E-10	2.1E-08	1.5E-09
SVOC	Fluoranthene	206-44-0	6.1E-11	1.5E-10	1.5E-11	2.3E-10	1.7E-07	4.2E-12	2.6E-09	9.8E-11	2.7E-09	2.3E-07	1.4E-06		1.4E-12	3.4E-10	2.1E-09	2.5E-09	3.1E-07	1.9E-06	6.9E-07	2.4E-12	2.6E-11	3.7E-12	3.2E-11	1.2E-11	5.8E-11	8.2E-12	7.8E-11	2.2E-08	1.6E-12	2.1E-10	1.3E-10	3.4E-10	6.1E-11	3.3E-10	9.5E-10
SVOC	Fluorene	86-73-7		6.7E-10	2.6E-12	6.7E-10	4.7E-07		1.1E-08	1.8E-11	1.1E-08	9.9E-07	5.9E-06			1.5E-09	3.8E-10	1.9E-09	5.0E-08	3.0E-07	2.1E-07		1.1E-10	6.7E-13	1.1E-10		2.5E-10	1.5E-12	2.5E-10			9.0E-10	2.3E-11	9.2E-10	1.7E-10	1.4E-09	1.5E-10
SVOC	Hexachlorobenzene	118-74-1	1.8E-11			1.8E-11	3.2E-10	1.2E-12			1.2E-12				4.2E-13			4.2E-13				7.1E-13			7.1E-13	3.5E-12			3.5E-12		4.8E-13			4.8E-13	1.2E-13		
SVOC	Hexachlorobutadiene	87-68-3		5.1E-10		5.1E-10	2.7E-07		8.6E-09		8.6E-09	7.6E-07	4.6E-06			1.1E-09		1.1E-09					8.6E-11		8.6E-11		1.9E-10		1.9E-10			6.9E-10		6.9E-10	9.8E-11	1.1E-09	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2.8E-11	5.3E-11		8.0E-11	4.9E-10	1.9E-12	8.8E-10		8.8E-10	7.8E-08	4.7E-07		6.4E-13	1.2E-10		1.2E-10	4.6E-08	2.7E-07	2.7E-07	1.1E-12	8.8E-12		9.9E-12	5.3E-12	2.0E-11		2.5E-11	1.9E-08	7.4E-13	7.1E-11		7.2E-11	1.8E-13	1.1E-10	1.4E-10
SVOC	Isophorone	78-59-1	8.8E-11	8.7E-09	1.7E-10	8.9E-09	9.6E-06	6.0E-12	1.4E-07	1.1E-09	1.5E-07	1.3E-05	7.7E-05	7.0E-05	2.0E-12	1.9E-08	2.5E-08	4.4E-08	2.7E-05	1.6E-04	3.8E-05	3.4E-12	1.4E-09	4.4E-11	1.5E-09	1.7E-11	3.2E-09	9.6E-11	3.4E-09	2.3E-09	2.3E-12	1.2E-08	1.5E-09	1.3E-08	3.4E-09	1.8E-08	8.4E-08

Table B-7b: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average

ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			FUTURE					FUTURE							FUTURE							FUTURE				FUTURE					FUTURE						
Location of Exposure:			AREA 1					AREA 2							AREA 3							AREA 4A				AREA 4B					AREA 5A						
Type of Activity at Emission Location:			Routine Industrial				Excavatio	Routine Industrial				Excavatio	Const (0-10')	Const (0-4')	Routine Industrial				Excavation	Const (0-10')	Const (0-4')	Routine Industrial				Routine Industrial				Excavation	Routine Industrial				Excavatio		
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3
C/Q (kg/m^3 per kg/m^2/s)			1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01	3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	N-Nitroso-di-n-propylamine	621-64-7																																			
SVOC	N-Nitrosodiphenylamine	86-30-6			1.9E-11	1.9E-11				1.2E-10	1.2E-10						2.7E-09	2.7E-09	1.3E-07	7.9E-07	1.0E-06			4.7E-12	4.7E-12			1.0E-11	1.0E-11				1.6E-10	1.6E-10			4.0E-10
SVOC	Naphthalene	91-20-3		3.8E-09	1.2E-10	3.9E-09	5.1E-06		6.4E-08	8.0E-10	6.4E-08	5.6E-06	3.4E-05	4.7E-05		8.5E-09	1.8E-08	2.6E-08	6.0E-06	3.6E-05	1.6E-05		6.4E-10	3.1E-11	6.7E-10		1.4E-09	6.7E-11	1.5E-09	1.4E-09		5.1E-09	1.1E-09	6.2E-09	1.9E-09	8.1E-09	1.8E-08
SVOC	Pentachlorophenol	87-86-5		1.7E-09	6.5E-12	1.7E-09	8.8E-07		2.9E-08	4.3E-11	2.9E-08	2.6E-06	1.5E-05			3.9E-09	9.4E-10	4.8E-09	7.3E-07	4.4E-06	5.0E-07		2.9E-10	1.6E-12	2.9E-10		6.5E-10	3.6E-12	6.6E-10			2.3E-09	5.6E-11	2.4E-09	3.2E-10	3.7E-09	2.2E-09
SVOC	Phenanthrene	85-01-8	3.8E-11	6.7E-10	1.3E-11	7.2E-10	4.0E-07	2.6E-12	1.1E-08	8.9E-11	1.1E-08	9.8E-07	5.9E-06		8.9E-13	1.5E-09	1.9E-09	3.4E-09	3.2E-07	1.9E-06	1.2E-06	1.5E-12	1.1E-10	3.4E-12	1.2E-10	7.3E-12	2.5E-10	7.4E-12	2.6E-10	8.3E-09	1.0E-12	9.0E-10	1.2E-10	1.0E-09	1.5E-10	1.4E-09	9.8E-10
SVOC	Phenol	108-95-2		2.1E-09	2.8E-11	2.1E-09	9.3E-07		3.4E-08	1.8E-10	3.5E-08	3.1E-06	1.8E-05	5.7E-05		4.6E-09	4.0E-09	8.6E-09	9.2E-06	5.5E-05	4.7E-06		3.4E-10	7.0E-12	3.5E-10		7.8E-10	1.5E-11	7.9E-10			2.8E-09	2.4E-10	3.0E-09	3.4E-10	4.4E-09	2.8E-08
SVOC	Pyrene	129-00-0	7.5E-11	3.0E-10	1.0E-11	3.9E-10	2.6E-07	5.1E-12	5.0E-09	6.6E-11	5.1E-09	4.4E-07	2.7E-06		1.8E-12	6.7E-10	1.4E-09	2.1E-09	2.1E-07	1.3E-06	6.0E-07	2.9E-12	5.0E-11	2.5E-12	5.6E-11	1.4E-11	1.1E-10	5.5E-12	1.3E-10	2.1E-08	2.0E-12	4.1E-10	8.7E-11	4.9E-10	9.5E-11	6.4E-10	6.5E-10
SVOC	bis(2-Chloroethyl) ether	111-44-4		7.1E-10		7.1E-10	4.5E-07		1.2E-08		1.2E-08	1.0E-06	6.3E-06			1.6E-09		1.6E-09					1.2E-10		1.2E-10		2.7E-10		2.7E-10			9.6E-10		9.6E-10	1.6E-10	1.5E-09	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6.1E-09	1.3E-08	1.9E-09	2.1E-08	1.5E-05	4.2E-10	2.1E-07	1.2E-08	2.3E-07	1.9E-05	1.1E-04	3.7E-05	1.4E-10	2.9E-08	2.7E-07	3.0E-07	7.3E-05	4.4E-04	1.3E-04	2.4E-10	2.1E-09	4.7E-10	2.9E-09	1.2E-09	4.8E-09	1.0E-09	7.0E-09	2.2E-07	1.6E-10	1.7E-08	1.6E-08	3.4E-08	5.3E-09	2.7E-08	2.2E-07
P/PCB	4,4'-DDD	72-54-8		5.5E-11	6.5E-13	5.5E-11	1.6E-07		9.1E-10	4.3E-12	9.2E-10	8.1E-08	4.9E-07			1.2E-10	9.4E-11	2.2E-10	8.3E-09	5.0E-08	5.0E-08		9.1E-12	1.6E-13	9.3E-12		2.1E-11	3.6E-13	2.1E-11	4.3E-09		7.4E-11	5.6E-12	7.9E-11	5.8E-11	1.2E-10	2.6E-11
P/PCB	4,4'-DDE	72-55-9		3.3E-11		3.3E-11			5.5E-10		5.5E-10	4.9E-08	2.9E-07			7.4E-11		7.4E-11					5.5E-12		5.5E-12		1.2E-11		1.2E-11	1.6E-08		4.5E-11		4.5E-11		7.0E-11	
P/PCB	4,4'-DDT	50-29-3		4.7E-11		4.7E-11	2.1E-07		7.8E-10		7.8E-10	6.9E-08	4.2E-07			1.0E-10		1.0E-10					7.8E-12		7.8E-12		1.8E-11		1.8E-11	1.3E-08		6.3E-11		6.3E-11	7.7E-11	1.0E-10	
P/PCB	Aldrin	309-00-2		2.3E-10		2.3E-10			3.8E-09		3.8E-09	3.4E-07	2.0E-06			5.0E-10		5.0E-10					3.8E-11		3.8E-11		8.5E-11		8.5E-11			3.1E-10		3.1E-10		4.8E-10	
P/PCB	Aroclor-1242	3469-21-9	2.5E-10		5.3E-11	3.1E-10	1.4E-06	1.7E-11		3.5E-10	3.7E-10				5.9E-12		7.6E-09	7.6E-09	1.4E-06	8.6E-06	4.9E-05	9.9E-12		1.3E-11	2.3E-11	4.9E-11		2.9E-11	7.8E-11		6.8E-12		4.6E-10	4.6E-10	4.9E-10		4.4E-09
P/PCB	Aroclor-1248	2672-29-6	3.4E-10	1.9E-09	3.0E-11	2.2E-09	9.4E-07	2.3E-11	3.1E-08	2.0E-10	3.1E-08	2.8E-06	1.7E-05	4.3E-05	7.8E-12	4.1E-09	4.4E-09	8.5E-09	7.8E-07	4.7E-06	1.4E-05	1.3E-11	3.1E-10	7.7E-12	3.3E-10	6.4E-11	7.0E-10	1.7E-11	7.8E-10	1.2E-08	8.9E-12	2.5E-09	2.6E-10	2.8E-09	3.4E-10	4.0E-09	2.4E-09
P/PCB	Aroclor-1254	1097-69-1	1.5E-09	1.4E-09	4.0E-11	2.9E-09	1.6E-06	1.0E-10	2.3E-08	2.6E-10	2.3E-08	2.0E-06	1.2E-05	1.6E-06	3.5E-11	3.0E-09	5.8E-09	8.8E-09	5.3E-07	3.2E-06	3.9E-06	5.9E-11	2.3E-10	1.0E-11	2.9E-10	2.9E-10	5.1E-10	2.2E-11	8.2E-10	4.9E-07	4.0E-11	1.8E-09	3.5E-10	2.2E-09	5.7E-10	2.9E-09	1.6E-09
P/PCB	Aroclor-1260	1096-82-5	3.1E-10	1.3E-08		1.3E-08	9.8E-07	2.1E-11	2.2E-07		2.2E-07	1.9E-05	1.2E-04	1.1E-05	7.3E-12	2.9E-08		2.9E-08	3.2E-07	1.9E-06	4.9E-06	1.2E-11	2.2E-09		2.2E-09	6.0E-11	4.9E-09		4.9E-09	5.4E-08	8.3E-12	1.7E-08		1.8E-08	3.5E-10	2.8E-08	9.9E-10
P/PCB	Dieldrin	60-57-1					1.1E-08																												3.9E-12		
P/PCB	Endosulfan I	959-98-8					5.3E-08																							2.2E-08					1.9E-11		
P/PCB	Endosulfan sulfate	1031-07-8																												3.3E-09							
P/PCB	Endrin	72-20-8					7.1E-08																							8.3E-09					2.6E-11		
P/PCB	Endrin aldehyde	7421-93-4																																			
P/PCB	Endrin ketone	3494-70-5	6.9E-12			6.9E-12	6.1E-10	4.7E-13			4.7E-13				1.6E-13			1.6E-13				2.7E-13			2.7E-13	1.3E-12			1.3E-12		1.8E-13			1.8E-13	2.2E-13		
P/PCB	Heptachlor	76-44-8			3.8E-13	3.8E-13				2.5E-12	2.5E-12						5.5E-11	5.5E-11	4.9E-09	2.9E-08	2.9E-08			9.7E-14	9.7E-14			2.1E-13	2.1E-13	3.4E-09			3.3E-12	3.3E-12			1.5E-11
P/PCB	Heptachlor epoxide	1024-57-3			1.8E-13	1.8E-13				1.2E-12	1.2E-12						2.6E-11	2.6E-11	2.3E-09	1.4E-08	1.4E-08			4.6E-14	4.6E-14			1.0E-13	1.0E-13				1.6E-12	1.6E-12			7.1E-12
P/PCB	Methoxychlor	72-43-5																												1.6E-08							
P/PCB	alpha BHC	319-84-6		1.2E-11		1.2E-11			2.1E-10		2.1E-10	1.8E-08	1.1E-07			2.8E-11		2.8E-11					2.1E-12		2.1E-12		4.7E-12		4.7E-12			1.7E-11		1.7E-11		2.6E-11	
P/PCB	alpha Chlordane	5103-71-9																												1.2E-08							
P/PCB	beta-BHC	319-85-7		2.4E-11		2.4E-11			3.9E-10		3.9E-10	3.5E-08	2.1E-07			5.3E-11		5.3E-11					3.9E-12		3.9E-12		8.9E-12		8.9E-12	1.4E-09		3.2E-11		3.2E-11		5.0E-11	
P/PCB	gamma BHC	58-89-9																												1.6E-09							
P/PCB	gamma Chlordane	5103-74-2					5.4E-08																							2.7E-09					2.0E-11		
INORG	Antimony	7440-36-0	4.5E-10	2.5E-09	2.9E-10	3.2E-09	7.3E-07	3.1E-11	4.1E-08	1.9E-09	4.3E-08	3.6E-06	2.2E-05	2.5E-05	1.0E-11	5.5E-09	4.2E-08	4.8E-08	7.5E-06	4.5E-05	2.5E-05	1.8E-11	4.1E-10	7.4E-11	5.0E-10	8.6E-11	9.2E-10	1.6E-10	1.2E-09		1.2E-11	3.3E-09	2.5E-09	5.9E-09	2.6E-10	5.2E-09	2.3E-08
INORG	Arsenic	7440-38-2	1.7E-09	1.8E-10	1.3E-10	2.1E-09	2.2E-07	1.2E-10	3.0E-09	8.8E-10	4.0E-09	2.7E-07	1.6E-06	2.2E-06	4.1E-11	4.1E-10	1.9E-08	2.0E-08	5.1E-07	3.0E-06	5.9E-06	6.8E-11	3.0E-11	3.4E-11	1.3E-10	3.3E-10	6.9E-11	7.4E-11	4.7E-10	4.2E-07	4.6E-11	2.5E-10	1.2E-09	1.4E-09	8.0E-11	3.9E-10	1.5E-09
INORG	Barium	7440-39-3	9.3E-08	3.7E-08	1.1E-08	1.4E-07	1.2E-05	6.4E-09	6.1E-07	7.1E-08	6.9E-07	5.4E-05	3.2E-04	9.0E-04	2.2E-09	8.1E-08	1.5E-06	1.6E-06	1.4E-04	8.1E-04	1.0E-03	3.6E-09	6.1E-09	2.7E-09	1.2E-08	1.8E-08	1.4E-08	5.9E-09	3.7E-08		2.5E-09	4.9E-08	9.3E-08	1.4E-07	4.3E-09	7.8E-08	4.1E-07
INORG	Beryllium	7440-41-7	2.0E-09	1.2E-11	6.5E-12	2.0E-09	4.4E-08	1.3E-10	2.0E-10	4.3E-11	3.7E-10	1.7E-08	1.0E-07		4.6E-11	2.6E-11	9.4E-10	1.0E-09	3.4E-08	2.0E-07	2.9E-07	7.7E-11	2.0E-12	1.6E-12	8.0E-11	3.7E-10	4.4E-12	3.6E-12	3.8E-10		5.2E-11	1.6E-11	5.6E-11	1.2E-10	1.6E-11	2.5E-11	1.0E-10
INORG	Cadmium	7440-43-9	1.1E-09	4.0E-09	6.9E-10	5.7E-09	6.7E-07	7.2E-11	6.6E-08	4.6E-09	7.1E-08	5.9E-06	3.5E-05	1.7E-05	2.5E-11	8.9E-09	1.0E-07	1.1E-07	2.0E-05	1.2E-04	5.5E-05	4.1E-11	6.6E-10	1.7E-10	8.8E-10	2.0E-10	1.5E-09	3.8E-10	2.1E-09	3.3E-07	2.8E-11	5.4E-09	6.0E-09	1.1E-08	2.4E-10	8.5E-09	6.2E-08
INORG	Chromium 3+	6065-83-1	1.7E-08	4.8E-08	4.8E-09	7.0E-08	7.6E-06	1.2E-09	8.0E-07	3.2E-08	8.3E-07	7.0E-05	4.2E-04	2.4E-04	4.0E-10	1.1E-07	7.0E-07	8.0E-07	6.6E-05	3.9E-04	4.7E-04	6.7E-10	8.0E-09	1.2E-09	9.8E-09	3.3E-09	1.8E-08	2.7E-09	2.4E-08	1.6E-06	4.6E-10	6.4E-08	4.2E-08	1.1E-07	2.7E-09	1.0E-07	2.0E-07
INORG	Chromium 6+	8540-29-9	2.9E-09	8.0E-09	8.1E-10	1.2E-08	1.3E-06	2.0E-10	1.3E-07	5.3E-09	1.4E-07	1.2E-05	7.0E-05	4.0E-05	6.7E-11	1.8E-08	1.2E-07	1.3E-07	1.1E-05	6.6E-05	7.9E-05	1.1E-10	1.3E-09	2.0E-10	1.6E-09	5.5E-10	3.0E-09	4.5E-10	4.0E-09	2.6E-07	7.6E-11	1.1E-08	7.0E-09	1.8E-08	4.5E-10	1.7E-08	3.3E-08
INORG	Cobalt	7440-48-4	2.3E-09	5.3E-10	2.5E-10	3.0E-09	5.1E-07	1.5E-10	8.9E-09	1.6E-09	1.1E-08	7.9E-07	4.7E-06	6.3E-06	5.3E-11	1.2E-09	3.6E-08	3.7E-08	2.7E-06	1.6E-05	2.5E-05	8.8E-11	8.9E-11	6.2E-11	2.4E-10	4.3E-10	2.0E-10	1.4E-10	7.7E-10		6.0E-11	7.2E-10	2.1E-09	2.9E-09	1.8E-10	1.1E-09	8.4E-09
INORG	Copper	7440-50-8	1.7E-08	5.0E-08	5.2E-09	7.2E-08	3.2E-06	1.2E-09	8.3E-07	3.4E-08	8.6E-07	7.3E-05	4.4E-04	3.1E-04	4.0E-10	1.1E-07	7.5E-07	8.6E-07	1.0E-04	6.0E-04	6.8E-04	6.7E-10	8.3E-09	1.3E-09	1.0E-08	3.3E-09	1.9E-08	2.9E-09	2.5E-08	2.1E-06	4.6E-10	6.7E-08	4.5E-08	1.1E-07	1.1E-09	1.1E-07	3.1E-07
INORG	Cyanide (total)	57-12-5	4.9E-10		2.1E-10	7.0E-10	4.3E-07	3.3E-11		1.4E-09	1.4E-09				1.1E-11		3.0E-08	3.0E-08	1.8E-06	1.1E-05	1.9E-05	1.9E-11		5.3E-11	7.2E-11	9.3E-11		1.2E-10	2.1E-10		1.3E-11		1.8E-09	1.8E-09	1.6E-10		5.5E-09
INORG	Lead	7439-92-1	8.1E-08	3.8E-07	4.6E-08	5.1E-07	3.9E-05	5.5E-09	6.4E-06	3.1E-07	6.7E-06	5.7E-04	3.4E-03	3.4E-03	1.9E-09	8.5E-07	6.7E-06	7.6E-06	4.2E-04	2.5E-03	3.6E-03	3.2E-09	6.4E-08	1.2E-08	7.9E-08	1.5E-08	1.4E-07	2.6E-08	1.9E-07	8.0E-06	2.1E-09	5.2E-07	4.0E-07	9.2E-07	1.4E-08	8.2E-07	1.3E-06
INORG	Manganese	7439-96-5	7.8E-07	8.9E-09	6.7E-09	7.9E-07	3.0E-05	5.3E-08	1.5E-07	4.4E-08	2.5E-07	1.3E-05	7.9E-05	1.1E-04	1.8E-08	2.0E-08	9.7E-07	1.0E-06	4.6E-05	2.8E-04	3.6E-04	3.0E-08	1.5E-09	1.7E-09	3.4E-08	1.5E-07	3.3E-09	3.7E-09	1.6E-07		2.1E-08	1.2E-08	5.8E-08	9.1E-08	1.1E-08	1.9E-08	1.4E-07
INORG	Mercury	7439-97-6	2.4E-09	3.0E-10	4.1E-11	2.7E-09	1.5E-07	1.6E-10	4.9E-09	2.7E-10	5.4E-09	4.4E-07	2.6E-06	2.6E-06	5.6E-11	6.6E-10	6.0E-09	6.7E-09	5.7E-07	3.4E-06	2.9E-06	9.5E-11	4.9E-11	1.0E-11	1.5E-10	4.6E-10	1.1E-10	2.3E-11	6.0E-10	2.5E-08	6.4E-11	4.0E-10	3.6E-10	8.2E-10	5.2E-11	6.3E-10	1.7E-09
INORG	Nickel	7440-02-0	4.8E-09	9.3E-10	2.3E-10	6.0E-09	4.7E-07	3.3E-10	1.5E-08	1.5E-09	1.7E-08	1.4E-06	8.2E-06	1.8E-05	1.1E-10	2.1E-09	3.3E-08	3.6E-08	3.0E-06	1.8E-05	3.1E-05	1.9E-10	1.5E-10	5.8E-11	4.0E-10	9.2E-10	3.5E-10	1.3E-10	1.4E-09		1.3E-10	1.2E-09	2.0E-09	3.4E-09	1.7E-10	2.0E-09	9.3E-09
INORG	Selenium	7782-49-2	2.7E-10	1.0E-10	7.5E-11	4.5E-10	3.2E-08	1.8E-11	1.7E-09	4.9E-10	2.2E-09	1.5E-07	9.2E-07	1.4E-06	6.3E-12	2.3E-10	1.1E-08	1.1E-08	1.9E-06	1.1E-05	3.7E-06	1.1E-11	1.7E-11	1.9E-11	4.7E-11	5.2E-11	3.9E-11	4.1E-11	1.3E-10		7.2E-12	1.4E-10	6.5E-10	7.9E-10	1.1E-11	2.2E-10	5.7E-09
INORG	Silver	7440-22-4	1.8E-10	3.7E-10		5.5E-10	1.6E-08	1.2E-11	6.2E-09		6.2E-09	5.5E-07	3.3E-06	5.0E-06	4.2E-12	8.2E-10		8.2E-10	3.7E-06	2.2E-05	4.0E-06	7.1E-12	6.2E-11		6.9E-11	3.5E-11	1.4E-10		1.7E-10		4.8E-12	5.0E-10		5.0E-10	5.8E-12	7.9E-10	1.1E-08
INORG	Thallium	7440-28-0		2.7E-11		2.7E-11			4.5E-10		4.5E-10	4.0E-08	2.4E-07			6.0E-11		6.0E-11	4.2E-08	2.5E-07			4.5E-12		4.5E-12		1.0E-11		1.0E-11			3.7E-11		3.7E-11		5.8E-11	1.3E-10
INORG	Vanadium	7440-62-2	7.3E-09	3.6E-10	1.1E-10	7.8E-09	6.2E-07	5.0E-10	6.0E-09	7.5E-10	7.3E-09	5.3E-07	3.2E-06	3.3E-06	1.7E-10	8.0E-10	1.6E-08	1.7E-08	1.1E-06	6.8E-06	1.2E-05	2.9E-10	6.0E-11	2.9E-11	3.8E-10	1.4E-09	1.4E-10	6.3E-11	1.6E-09		1.9E-10	4.9E-10	9.9E-10	1.7E-09	2.2E-10	7.7E-10	3.5E-09
INORG	Zinc	7440-66-6	6.1E-08	1.2E-07	6.6E-08	2.5E-07	1.7E-05	4.2E-09	2.1E-06	4.4E-07	2.5E-06	1.8E-04	1.1E-03	1.7E-03	1.4E-09	2.8E-07	9.5E-06	9.8E-06	8.7E-04	5.2E-03	4.2E-03	2.4E-09	2.1E-08	1.7E-08	4.0E-08	1.2E-08	4.7E-08	3.7E-08	9.5E-08	1.7E-05	1.6E-09	1.7E-07	5.7E-07	7.4E-07	6.1E-09	2.7E-07	2.7E-06
TIC	Acetaldehyde	75-07-0																																			
TIC	Acetophenone	98-86-2																																			
TIC	Butanol, 1-	71-36-3																																			
TIC	Caprolactam	105-60-2																																			
TIC	Chlorodifluoromethane	75-45-6																																			
TIC	Cyclohexanone	108-94-1																																			
TIC	Diethyl ether	60-29-7																																			
TIC	Dioxane, 1,4-	123-91-1																																			
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																																			
TIC	Hexane, n	110-54-3		5.64E-12		5.64E-12			9.40E-11		9.40E-11	8.33E-09	5.00E-08			1.25E-11		1.25E-11					9.40E-13		9.40E-13		2.12E-12		2.12E-12			7.60E-12		7.60E-12		1.20E-11	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7																																			
TIC	Phthalic anhydride	85-44-9					2.58E-07																												9.28E-11		

Table B-7b (cont.): Particulate Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:										FUTURE															
Location of Exposure:				Area 5A						AREA 6								Area 6							
Type of Activity at Emission Location:				Construction (0-10')			Construction (0-4')			Routine Industrial						Excavation		Construction (0-10')				Construction (0-4')		
Location of Emission:			From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max
		C/Q (kg/m³ per kg/m²/s)	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
VOC	1,1,1-Trichloroethane	71-55-6		9.8E-08	4.5E-08	3.3E-06	3.3E-06	1.0E-10	5.2E-11	1.0E-10		1.5E-10	4.7E-14	1.5E-10	1.4E-08	2.7E-10	2.2E-08		2.2E-08	1.2E-08	9.8E-07	9.8E-07	2.8E-11	1.5E-11	2.8E-11
VOC	1,1,2,2-Tetrachloroethane	79-34-5		6.3E-11	1.2E-10		1.2E-10					3.9E-13		3.9E-13	3.8E-11	7.2E-13			3.8E-11	3.2E-11		3.2E-11			
VOC	1,1,2-Trichloroethane	79-00-5		1.3E-10							1.2E-13			1.2E-13	7.8E-11				7.8E-11						
VOC	1,1-Dichloroethane	75-34-3		9.6E-10	3.9E-08	8.0E-09	3.9E-08		6.8E-10	6.8E-10		1.3E-10	4.5E-13	1.3E-10	2.1E-10	2.4E-10	5.4E-11		2.4E-10	1.1E-08	2.3E-09	1.1E-08		2.0E-10	2.0E-10
VOC	1,1-Dichloroethene	75-35-4						2.8E-11		2.8E-11													7.7E-12		7.7E-12
VOC	1,2,4-Trimethylbenzene	95-63-6																							
VOC	1,2-Dichloroethane	107-06-2		6.4E-10	2.2E-08	4.2E-09	2.2E-08					7.2E-11		7.2E-11	3.8E-10	1.3E-10	2.8E-11		3.8E-10	5.8E-09	1.2E-09	5.8E-09			
VOC	1,2-Dichloroethene (total)	540-59-0	1.2E-13	3.8E-09	5.5E-08	1.3E-07	1.3E-07		4.4E-08	4.4E-08	1.1E-13	1.8E-10	4.0E-11	2.2E-10	2.3E-09	3.4E-10	8.7E-10	9.2E-14	2.3E-09	1.5E-08	3.8E-08	3.8E-08		1.3E-08	1.3E-08
VOC	1,2-Dichloropropane	78-87-5		3.5E-10	8.9E-09	2.6E-09	8.9E-09		1.1E-10	1.1E-10		3.0E-11	9.9E-14	3.0E-11	2.1E-10	5.4E-11	1.7E-11		2.1E-10	2.4E-09	7.5E-10	2.4E-09		3.2E-11	3.2E-11
VOC	1,3,5-Trimethylbenzene	108-67-8																							
VOC	2-Butanone	78-93-3		4.6E-06	1.6E-06	1.6E-04	1.6E-04	1.7E-06	2.9E-04	2.9E-04		5.4E-09		5.4E-09	3.8E-09	9.9E-09	1.1E-06		1.1E-06	4.4E-07	4.6E-05	4.6E-05	4.6E-07	8.4E-05	8.4E-05
VOC	2-Hexanone	591-78-6		2.5E-09	1.0E-07	2.3E-09	1.0E-07	1.7E-07		1.7E-07		3.5E-10		3.5E-10		6.3E-10	1.5E-11		6.3E-10	2.8E-08	6.6E-10	2.8E-08	4.5E-08		4.5E-08
VOC	4-Methyl-2-pentanone	108-10-1		7.8E-07	2.7E-07	2.7E-05	2.7E-05	5.0E-07	1.1E-06	1.1E-06		9.0E-10		9.0E-10	4.1E-09	1.6E-09	1.8E-07		1.8E-07	7.3E-08	7.8E-06	7.8E-06	1.3E-07	3.2E-07	3.2E-07
VOC	Acetone	67-64-1	2.4E-13	4.4E-07	5.3E-07	1.5E-05	1.5E-05	1.6E-06	3.2E-09	1.6E-06		1.7E-09	6.8E-13	1.7E-09	3.9E-09	3.2E-09	1.0E-07	1.9E-13	1.0E-07	1.4E-07	4.4E-06	4.4E-06	4.3E-07	9.4E-10	4.3E-07
VOC	Benzene	71-43-2		2.1E-08	5.1E-08	7.0E-07	7.0E-07	7.3E-08	1.9E-08	7.3E-08		1.7E-10	1.7E-11	1.9E-10	3.1E-09	3.1E-10	4.7E-09		4.7E-09	1.4E-08	2.1E-07	2.1E-07	2.0E-08	5.4E-09	2.0E-08
VOC	Bromodichloromethane	75-27-4																							
VOC	Carbon Disulfide	75-15-0		4.0E-14							1.9E-14			1.9E-14	2.4E-14				2.4E-14						
VOC	Carbon Tetrachloride	56-23-5																							
VOC	Chlorobenzene	108-90-7		1.4E-08		4.9E-07	4.9E-07		3.6E-08	3.6E-08			3.2E-11	3.2E-11	9.6E-11		3.3E-09		3.3E-09		1.4E-07	1.4E-07		1.1E-08	1.1E-08
VOC	Chloroethane	75-00-3																							
VOC	Chloroform	67-66-3		4.7E-09	6.2E-08	2.6E-11	6.2E-08		5.8E-11	5.8E-11	2.8E-14	2.1E-10	5.2E-14	2.1E-10	2.8E-09	3.8E-10	1.7E-13		2.8E-09	1.7E-08	7.5E-12	1.7E-08		1.7E-11	1.7E-11
VOC	Chloromethane	74-87-3																							
VOC	Ethyl Benzene	100-41-4		3.3E-07	5.1E-07	1.1E-05	1.1E-05	9.9E-07	7.1E-06	7.1E-06		1.7E-09	7.3E-10	2.4E-09	5.6E-09	3.1E-09	7.6E-08		7.6E-08	1.4E-07	3.3E-06	3.3E-06	2.7E-07	2.1E-06	2.1E-06
VOC	Methylene Chloride	75-09-2		5.6E-09	4.9E-08	1.3E-08	4.9E-08	6.6E-11	6.5E-10	6.5E-10		1.6E-10	1.0E-12	1.6E-10	3.4E-09	3.0E-10	8.6E-11		3.4E-09	1.3E-08	3.7E-09	1.3E-08	1.8E-11	1.9E-10	1.9E-10
VOC	Styrene	100-42-5		3.6E-08	3.3E-08	1.2E-06	1.2E-06		1.3E-07	1.3E-07		1.1E-10	1.2E-10	2.3E-10	8.6E-10	2.0E-10	8.2E-09		8.2E-09	8.8E-09	3.6E-07	3.6E-07		3.9E-08	3.9E-08
VOC	Tetrachloroethene	127-18-4		6.0E-07	4.2E-07	2.0E-05	2.0E-05	1.2E-06	2.1E-06	2.1E-06	3.3E-12	1.4E-09	1.3E-09	2.7E-09	7.1E-09	2.6E-09	1.4E-07		1.4E-07	1.1E-07	6.0E-06	6.0E-06	3.3E-07	6.1E-07	6.1E-07
VOC	Tetrahydrofuran	109-99-9																							
VOC	Toluene	108-88-3		2.2E-06	2.2E-06	7.4E-05	7.4E-05	2.5E-06	3.7E-05	3.7E-05	1.2E-12	7.4E-09	3.3E-09	1.1E-08	1.2E-07	1.3E-08	5.0E-07		5.0E-07	6.0E-07	2.2E-05	2.2E-05	6.7E-07	1.1E-05	1.1E-05
VOC	Trichloroethene	79-01-6		2.5E-07	1.8E-07	8.4E-06	8.4E-06	5.0E-07	5.7E-07	5.7E-07	8.9E-13	6.0E-10	5.2E-10	1.1E-09	3.3E-09	1.1E-09	5.7E-08		5.7E-08	4.9E-08	2.5E-06	2.5E-06	1.3E-07	1.7E-07	1.7E-07
VOC	Vinyl Chloride	75-01-4		8.8E-12	3.6E-10		3.6E-10					1.2E-12		1.2E-12		2.2E-12			2.2E-12	9.8E-11		9.8E-11			
VOC	Xylenes (total)	1330-20-7		1.8E-06	4.5E-06	6.1E-05	6.1E-05	1.2E-05	4.8E-05	4.8E-05	4.3E-11	1.5E-08	3.0E-09	1.8E-08	2.7E-08	2.8E-08	4.1E-07		4.1E-07	1.2E-06	1.8E-05	1.8E-05	3.2E-06	1.4E-05	1.4E-05
VOC	cis-1,2-Dichloroethene	156-59-2		1.9E-08	7.6E-10	1.0E-10	7.6E-10	4.6E-10		4.6E-10		2.5E-12		2.5E-12	1.2E-08	4.6E-12	6.9E-13		1.2E-08	2.0E-10	3.0E-11	2.0E-10	1.2E-10		1.2E-10
VOC	m,p-xylene	6777-61-2		2.6E-08	3.5E-09	5.1E-07	5.1E-07	1.1E-10		1.1E-10		1.2E-11		1.2E-11	1.5E-08	2.1E-11	3.5E-09		1.5E-08	9.6E-10	1.5E-07	1.5E-07	2.8E-11		2.8E-11
VOC	ortho-xylene	95-47-6		5.7E-09	1.8E-09	2.0E-07	2.0E-07	4.0E-11	6.7E-11	6.7E-11		6.0E-12		6.0E-12	3.1E-09	1.1E-11	1.3E-09		3.1E-09	4.8E-10	5.7E-08	5.7E-08	1.1E-11	2.0E-11	2.0E-11
VOC	p-Cymene	99-87-6																							
VOC	trans-1,2-Dichloroethene	156-60-5																							
SVOC	1,2,4-Trichlorobenzene	120-82-1		7.2E-10	3.0E-08		3.0E-08					9.9E-11		9.9E-11	4.2E-11	1.8E-10			1.8E-10	8.1E-09		8.1E-09			
SVOC	1,2-Dichlorobenzene	95-50-1		4.3E-09	1.8E-07	1.9E-09	1.8E-07	6.9E-07	2.3E-09	6.9E-07		5.9E-10	3.1E-12	5.9E-10	1.5E-10	1.1E-09	1.3E-11		1.1E-09	4.8E-08	5.5E-10	4.8E-08	1.9E-07	6.7E-10	1.9E-07
SVOC	1,3-Dichlorobenzene	541-73-1		1.5E-11											9.2E-12				9.2E-12						
SVOC	1,4-Dichlorobenzene	106-46-7		8.5E-11	3.0E-09	5.4E-10	3.0E-09					1.0E-11		1.0E-11	5.1E-11	1.8E-11	3.6E-12		5.1E-11	8.1E-10	1.6E-10	8.1E-10			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																							
SVOC	2,4,5-Trichlorophenol	95-95-4		2.9E-11		9.9E-10	9.9E-10		9.9E-10	9.9E-10			8.9E-13	8.9E-13			6.6E-12		6.6E-12		2.9E-10	2.9E-10		2.9E-10	2.9E-10
SVOC	2,4-Dichlorophenol	120-83-2		6.7E-11											4.0E-11				4.0E-11						
SVOC	2,4-Dimethylphenol	105-67-9		2.8E-09	1.1E-07	9.5E-08	1.1E-07	2.9E-07	2.8E-08	2.9E-07		3.6E-10	2.6E-11	3.8E-10	1.0E-10	6.5E-10	6.4E-10		6.5E-10	2.9E-08	2.8E-08	2.9E-08	7.8E-08	8.3E-09	7.8E-08
SVOC	2,4-Dinitrotoluene	121-14-2		1.4E-10		4.9E-09	4.9E-09										3.3E-11		3.3E-11		1.4E-09	1.4E-09			
SVOC	2,6-Dinitrotoluene	606-20-2		2.8E-10	1.2E-08		1.2E-08					3.8E-11		3.8E-11		7.0E-11			7.0E-11	3.1E-09		3.1E-09			
SVOC	2-Chloronaphthalene	91-58-7																							
SVOC	2-Methylnaphthalene	91-57-6	3.0E-13	4.2E-08	1.7E-06	3.0E-07	1.7E-06	1.1E-07	1.7E-07	1.7E-07	3.2E-12	5.7E-09	8.9E-11	5.8E-09	6.9E-10	1.0E-08	2.0E-09	2.4E-13	1.0E-08	4.6E-07	8.7E-08	4.6E-07	2.8E-08	5.1E-08	5.1E-08
SVOC	2-Methylphenol	95-48-7		3.0E-09	1.3E-07	5.6E-08	1.3E-07	4.0E-07	2.7E-08	4.0E-07		4.2E-10	2.5E-11	4.4E-10	1.1E-10	7.6E-10	3.8E-10		7.6E-10	3.4E-08	1.6E-08	3.4E-08	1.1E-07	8.0E-09	1.1E-07
SVOC	3,3'-Dichlorobenzidine	91-94-1		4.2E-12							2.0E-12			2.0E-12	2.5E-12				2.5E-12						
SVOC	4-Bromophenyl-phenylether	101-55-3																							
SVOC	4-Chloro-3-methylphenol	59-50-7																							
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																							
SVOC	4-Methylphenol	106-44-5		4.2E-09	1.7E-07	5.2E-08	1.7E-07	5.9E-07	1.4E-08	5.9E-07		5.8E-10	2.4E-11	6.0E-10	1.2E-10	1.1E-09	3.5E-10		1.1E-09	4.7E-08	1.5E-08	4.7E-08	1.6E-07	4.1E-09	1.6E-07
SVOC	4-Nitrophenol	100-02-7		1.1E-11		3.8E-10	3.8E-10										2.6E-12		2.6E-12		1.1E-10	1.1E-10			
SVOC	Acenaphthene	83-32-9		1.2E-09	5.0E-08	3.7E-09	5.0E-08		2.1E-09	2.1E-09		1.6E-10	1.9E-12	1.7E-10	1.1E-10	3.0E-10	2.5E-11		3.0E-10	1.3E-08	1.1E-09	1.3E-08		6.1E-10	6.1E-10
SVOC	Acenaphthylene	208-96-8	2.7E-12	8.9E-11							3.5E-12			3.5E-12	5.4E-11			2.2E-12	5.4E-11						
SVOC	Anthracene	120-12-7	2.4E-12	1.9E-10	4.3E-09	6.3E-09	6.3E-09		3.8E-09	3.8E-09	8.4E-13	1.4E-11	3.4E-12	1.9E-11	1.1E-11	2.6E-11	4.3E-11	2.0E-12	4.3E-11	1.2E-09	1.9E-09	1.9E-09		1.1E-09	1.1E-09
SVOC	Benzo(a)anthracene	56-55-3	3.5E-12	3.7E-10	8.9E-09	1.3E-08	1.3E-08		9.4E-09	9.4E-09	5.5E-13	3.0E-11	1.3E-11	4.3E-11	1.4E-13	5.4E-11	8.4E-11	2.8E-12	8.4E-11	2.4E-09	3.7E-09	3.7E-09		2.8E-09	2.8E-09
SVOC	Benzo(a)pyrene	50-32-8	3.8E-12	2.4E-10	5.0E-09	8.1E-09	8.1E-09		8.1E-09	8.1E-09	7.8E-13	1.6E-11		1.7E-11	2.0E-13	3.0E-11	5.5E-11	3.1E-12	5.5E-11	1.3E-09	2.4E-09	2.4E-09		2.4E-09	2.4E-09
SVOC	Benzo(b)fluoranthene	205-99-2	4.2E-12	5.5E-10	1.7E-08	1.9E-08	1.9E-08		1.3E-08	1.3E-08	8.1E-13	5.8E-11	2.2E-12	6.1E-11	2.1E-13	1.1E-10	1.3E-10	3.4E-12	1.3E-10	4.7E-09	5.5E-09	5.5E-09		3.7E-09	3.7E-09
SVOC	Benzo(g,h,i)perylene	191-24-2	2.8E-12	1.9E-10	5.0E-09	6.4E-09	6.4E-09		6.4E-09	6.4E-09		1.6E-11		1.6E-11		3.0E-11	4.3E-11	2.3E-12	4.3E-11	1.3E-09	1.9E-09	1.9E-09		1.9E-09	1.9E-09
SVOC	Benzo(k)fluoranthene	207-08-9	3.9E-12	5.5E-10	1.7E-08	1.9E-08	1.9E-08		1.3E-08	1.3E-08	6.8E-13	5.8E-11	2.2E-12	6.1E-11	1.7E-13	1.1E-10	1.3E-10	3.2E-12	1.3E-10	4.7E-09	5.5E-09	5.5E-09		3.7E-09	3.7E-09
SVOC	Benzoic Acid	65-85-0		3.2E-08	4.0E-07	1.1E-06	1.1E-06					1.3E-09		1.3E-09	1.6E-10	2.4E-09	7.4E-09		7.4E-09	1.1E-07	3.2E-07	3.2E-07			
SVOC	Benzyl Alcohol	100-51-6		2.1E-09	8.8E-08		8.8E-08					2.9E-10		2.9E-10		5.3E-10			5.3E-10	2.4E-08		2.4E-08			
SVOC	Butylbenzylphthalate	85-68-7		3.4E-08	1.4E-06	1.8E-07	1.4E-06		1.8E-07	1.8E-07		4.6E-09	8.9E-11	4.7E-09	1.2E-09	8.4E-09	1.2E-09		8.4E-09	3.7E-07	5.1E-08	3.7E-07		5.4E-08	5.4E-08
SVOC	Carbazole	86-74-8	3.5E-13	3.5E-13														2.8E-13	2.8E-13						
SVOC	Chrysene	218-01-9	3.7E-12	3.0E-10	1.3E-08	8.9E-09	1.3E-08		7.5E-09	7.5E-09	7.0E-13	4.2E-11	6.8E-12	4.9E-11	1.8E-13	7.6E-11	6.0E-11	3.0E-12	7.6E-11	3.4E-09	2.6E-09	3.4E-09		2.2E-09	2.2E-09
SVOC	Di-n-butylphthalate	84-74-2	8.1E-13	9.6E-09	2.5E-07	3.3E-07	3.3E-07	1.7E-07	2.5E-07	2.5E-07	4.8E-13	8.3E-10	7.8E-11	9.1E-10	8.2E-10	1.5E-09	2.2E-09	6.5E-13	2.2E-09	6.7E-08	9.6E-08	9.6E-08	4.5E-08	7.2E-08	7.2E-08
SVOC	Di-n-octylphthalate	117-84-0		2.2E-09	4.3E-08	7.5E-08	7.5E-08		8.5E-08	8.5E-08	1.0E-12	1.4E-10	6.8E-12	1.5E-10	9.7E-11	2.6E-10	5.0E-10		5.0E-10	1.2E-08	2.2E-08	2.2E-08		2.5E-08	2.5E-08
SVOC	Dibenzo(a,h)anthracene	53-70-3	2.8E-12	4.6E-11		1.6E-09	1.6E-09		1.6E-09	1.6E-09							1.1E-11	2.2E-12	1.1E-11		4.6E-10	4.6E-10		4.6E-10	4.6E-10
SVOC	Dibenzofuran	132-64-9		2.0E-10	8.3E-09	3.5E-09	8.3E-09		2.3E-09	2.3E-09		2.7E-11	2.2E-12	3.0E-11	4.1E-11	5.0E-11	2.3E-11		5.0E-11	2.2E-09	1.0E-09	2.2E-09		6.7E-10	6.7E-10
SVOC	Diethylphthalate	84-66-2		2.0E-09	8.2E-08	2.3E-08	8.2E-08		1.5E-08	1.5E-08		2.7E-10	7.8E-13	2.7E-10	1.5E-10	4.9E-10	1.6E-10		4.9E-10	2.2E-08	6.9E-09	2.2E-08		4.4E-09	4.4E-09
SVOC	Dimethylphthalate	131-11-3		2.1E-08	8.6E-07	5.0E-08	8.6E-07	3.6E-07	8.1E-09	3.6E-07		2.9E-09	7.3E-12	2.9E-09	5.2E-10	5.2E-09	3.3E-10		5.2E-09	2.3E-07	1.5E-08	2.3E-07	9.8E-08	2.4E-09	9.8E-08
SVOC	Fluoranthene	206-44-0	3.8E-12	9.5E-10	1.4E-08	3.2E-08	3.2E-08		1.2E-08	1.2E-08	9.2E-13	4.5E-11	1.8E-11	6.4E-11	3.7E-11	8.2E-11	2.2E-10	3.0E-12	2.2E-10	3.6E-09	9.5E-09	9.5E-09		3.5E-09	3.5E-09
SVOC	Fluorene	86-73-7		1.4E-09	5.9E-08	5.3E-09	5.9E-08		3.6E-09	3.6E-09		1.9E-10	3.2E-12	2.0E-10	1.0E-10	3.6E-10	3.5E-11		3.6E-10	1.6E-08	1.5E-09	1.6E-08		1.0E-09	1.0E-09
SVOC	Hexachlorobenzene	118-74-1		1.2E-13							2.7E-13			2.7E-13	7.0E-14				7.0E-14						
SVOC	Hexachlorobutadiene	87-68-3		1.1E-09	4.5E-08		4.5E-08					1.5E-10		1.5E-10	5.9E-11	2.7E-10			2.7E-10	1.2E-08		1.2E-08			
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	3.3E-12	1.4E-10	4.6E-09	4.8E-09	4.8E-09		4.8E-09	4.8E-09	4.1E-13	1.5E-11		1.6E-11	1.1E-13	2.8E-11	3.2E-11	2.6E-12	3.2E-11	1.2E-09	1.4E-09	1.4E-09		1.4E-09	1.4E-09
SVOC	Isophorone	78-59-1	4.0E-13	8.4E-08	7.6E-07	2.9E-06	2.9E-06	6.9E-07	6.7E-07	6.9E-07	1.3E-12	2.5E-09	2.1E-10	2.7E-09	2.1E-09	4.6E-09	1.9E-08	3.2E-13	1.9E-08	2.1E-07	8.4E-07	8.4E-07	1.9E-07	2.0E-07	2.0E-07

Table B-7b (cont.): Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			FUTURE																								
Location of Exposure:			Area 5A							AREA 6									Area 6								
Type of Activity at Emission Location:			Construction (0-10')					Construction (0-4')			Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')		
			From Area		From Area	From Area		From Area	From Area		From Area	From	From	Total At	From Area	From Area	From Area	From		From Area	From			From Area	From	
Location of Emission:			4B	Max	2	3	Max	2	3	Max	1	Area 2	Area 3	Area	1	2	3	Area 4B	Max	2	Area 3	Max		2	Area 3	Max
		C/Q (kg/m^3 per $kg/m^2/s$)	9 6E-05		3 3E-02	5 8E-02		3 3E-02	5 8E-02		1 8E-01	2 1E-01	1 0E-01		1 2E-04	2 0E-04	3 9E-04	7 7E-05		8 9E-03	1 7E-02			8 9E-03	1 7E-02	
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	N-Nitroso-di-n-propylamine	621-64-7											2 2E-11	2 2E-11													
SVOC	N-Nitrosodiphenylamine	86-30-6		4 0E-10		1 4E-08	1 4E-08		1 8E-08	1 8E-08							9 3E-11		9 3E-11		4 0E-09	4 0E-09		5 3E-09	5 3E-09
SVOC	Naphthalene	91-20-3	2 4E-13	1 8E-08	3 3E-07	6 2E-07	6 2E-07	4 6E-07	2 7E-07	4 6E-07		1 1E-09	1 5E-10	1 3E-09	1 1E-09	2 0E-09	4 2E-09	1 9E-13	4 2E-09	9 0E-08	1 8E-07	1 8E-07	1 2E-07	8 0E-08	1 2E-07
SVOC	Pentachlorophenol	87-86-5		3 7E-09	1 5E-07	7 6E-08	1 5E-07		8 7E-09	8 7E-09		5 1E-10	7 8E-12	5 1E-10	1 9E-10	9 2E-10	5 1E-10		9 2E-10	4 1E-08	2 2E-08	4 1E-08		2 6E-09	2 6E-09
SVOC	Phenanthrene	85-01-8	1 4E-12	1 4E-09	5 8E-08	3 3E-08	5 8E-08		2 1E-08	2 1E-08	5 7E-13	1 9E-10	1 6E-11	2 1E-10	8 7E-11	3 5E-10	2 2E-10	1 2E-12	3 5E-10	1 6E-08	9 8E-09	1 6E-08		6 3E-09	6 3E-09
SVOC	Phenol	108-95-2		2 8E-08	1 8E-07	9 6E-07	9 6E-07	5 6E-07	8 2E-08	5 6E-07		6 0E-10	3 3E-11	6 4E-10	2 0E-10	1 1E-09	6 5E-09		6 5E-09	4 9E-08	2 8E-07	2 8E-07	1 5E-07	2 4E-08	1 5E 07
SVOC	Pyrene	129-00-0	3 7E-12	6 5E-10	2 6E-08	2 2E-08	2 6E-08		1 0E-08	1 0E-08	1 1E-12	8 8E-11	1 2E-11	1 0E-10	5 7E-11	1 6E-10	1 5E-10	3 0E-12	1 6E-10	7 1E-09	6 5E-09	7 1E-09		3 1E-09	3 1E-09
SVOC	bis(2-Chloroethyl) ether	111-44-4		1 5E-09	6 2E-08		6 2E-08					2 1E-10		2 1E-10	9 8E-11	3 8E-10			3 8E-10	1 7E-08		1 7E-08			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	3 8E-11	2 2E-07	1 1E-06	7 6E-06	7 6E-06	3 6E-07	2 2E-06	2 2E-06	9 2E-11	3 8E-09	2 2E-09	6 1E-09	3 2E-09	6 9E-09	5 1E-08	3 1E-11	5 1E-08	3 1E-07	2 2E-06	2 2E-06	9 8E-08	6 5E-07	6 5E-07
P/PCB	4,4'-DDD	72-54-8	7 5E-13	1 2E-10	4 8E-09	8 7E-10	4 8E-09		8 7E-10	8 7E-10		1 6E-11	7 8E-13	1 7E-11	3 5E-11	2 9E-11	5 9E-12	6 0E-13	3 5E-11	1 3E-09	2 6E-10	1 3E-09		2 6E-10	2 6E-10
P/PCB	4,4'-DDE	72-55-9	2 8E-12	7 0E-11	2 9E-09		2 9E-09					9 7E-12		9 7E-12		1 8E-11		2 2E-12	1 8E-11	7 8E-10		7 8E-10			
P/PCB	4,4'-DDT	50-29-3	2 3E-12	1 0E-10	4 1E-09		4 1E-09					1 4E-11		1 4E-11	4 6E-11	2 5E-11		1 8E-12	4 6E-11	1 1E-09		1 1E-09			
P/PCB	Aldrin	309-00-2		4 8E-10	2 0E-08		2 0E-08					6 6E-11		6 6E-11		1 2E-10			1 2E-10	5 4E-09		5 4E-09			
P/PCB	Aroclor-1242	3469-21-9		4 4E-09		1 5E-07	1 5E-07		8 5E-07	8 5E-07	3 8E-12		6 3E-11	6 7E-11	3 0E-10		1 0E-09		1 0E-09		4 4E-08	4 4E-08		2 5E-07	2 5E 07
P/PCB	Aroclor-1248	2672-29-6	2 1E-12	4 0E-09	1 6E-07	8 2E 08	1 6E-07	4 3E-07	2 4E-07	4 3E-07	5 0E-12	5 4E-10	3 6E-11	5 9E-10	2 0E-10	9 9E 10	5 5E-10	1 7E-12	9 9E-10	4 4E-08	2 4E-08	4 4E-08	1 2E-07	7 0E-08	1 2E 07
P/PCB	Aroclor-1254	1097-69-1	8 4E-11	2 9E-09	1 2E-07	5 5E-08	1 2E-07	1 6E-08	6 7E-08	6 7E-08	2 3E-11	3 9E-10	4 8E-11	4 7E-10	3 4E-10	7 2E 10	3 7E 10	6 8E-11	7 2E-10	3 2E-08	1 6E-08	3 2E-08	4 2E 09	2 0E-08	2 0E-08
P/PCB	Aroclor-1260	1096-82-5	9 3E-12	2 8E-08	1 1E-06	3 4E 08	1 1E-06	1 1E-07	8 5E-08	1 1E-07	4 7E-12	3 8E 09		3 8E-09	2 1E-10	6 9F 09	2 3E-10	7 5E-12	6 9E-09	3 1E-07	9 9E-09	3 1E-07	2 8E-08	2 5E-08	2 8E-08
P/PCB	Dieldrin	60-57-1		3 9E-12											2 4E 12				2 4E-12						
P/PCB	Endosulfan I	959-98-8	3 7E-12	1 9E-11											1 2E-11			3 0E-12	1 2E-11						
P/PCB	Endosulfan sulfate	1031-07-8	5 8E-13	5 8E-13														4 6E-13	4 6E-13						
P/PCB	Endrin	72-20-8	1 4E-12	2 6E-11											1 5E-11			1 2E-12	1 5E-11						
P/PCB	Endrin aldehyde	7421-93-4																							
P/PCB	Endrin ketone	3494-70-5		2 2E-13							1 0E-13			1 0E-13	1 3E-13				1 3E-13						
P/PCB	Heptachlor	76-44-8	6 0E-13	1 5E-11		5 1E-10	5 1E-10		5 1E-10	5 1E-10			4 6E-13	4 6E-13			3 4E-12	4 8E-13	3 4E-12		1 5E-10	1 5E-10		1 5E-10	1 5E-10
P/PCB	Heptachlor epoxide	1024-57-3		7 1E-12		2 4E-10	2 4E-10		2 4E-10	2 4E-10			2 2E-13	2 2E-13			1 6E-12		1 6E-12		7 1E-11	7 1E-11		7 1E-11	7 1E-11
P/PCB	Methoxychlor	72-43-5	2 8E-12	2 8E-12														2 2E-12	2 2E-12						
P/PCB	alpha-BHC	319-84-6		2 6E-11	1 1E-09		1 1E-09					3 6E-12		3 6E-12		6 6E-12			6 6E-12	2 9E-10		2 9E-10			
P/PCB	alpha-Chlordane	5103-71-9	2 1E-12	2 1E-12														1 7E-12	1 7E-12						
P/PCB	beta-BHC	319-85-7	2 5E-13	5 0E-11	2 1E-09		2 1E-09					6 9E-12		6 9E-12		1 3E-11		2 0E-13	1 3E-11	5 6E-10		5 6E-10			
P/PCB	gamma-BHC	58-89-9	2 8E-13	2 8E-13														2 2E-13	2 2E-13						
P/PCB	gamma-Chlordane	5103-74-2	4 6E-13	2 0E-11											1 2E-11			3 7E-13	1 2E-11						
INORG	Antimony	7440-36-0		2 3E-08	2 2E-07	7 8E-07	7 8E-07	2 5E-07	4 4E-07	4 4E-07	6 7E-12	7 2E-10	3 5E-10	1 1E-09	1 6E-10	1 3E-09	5 3E-09		5 3E-09	5 8E-08	2 3E-07	2 3E-07	6 7E-08	1 3E-07	1 3E-07
INORG	Arsenic	7440-38-2	7 3E-11	1 5E-09	1 6E-08	5 3E-08	5 3E-08	2 1E-08	1 0E-07	1 0E-07	2 6E-11	5 3E-11	1 6E-10	2 4E-10	4 8E-11	9 7E-11	3 5E-10	5 9E-11	3 5E-10	4 3E-09	1 5E-08	1 5E-08	5 8E-09	3 0E-08	3 0E-08
INORG	Barium	7440-39-3		4 1E-07	3 2E-06	1 4E-05	1 4E-05	8 9E-06	1 8E-05	1 8E-05	1 4E-09	1 1E-08	1 3E-08	2 5E-08	2 6E-09	1 9E-08	9 5E-08		9 5E-08	8 7E-07	4 1E-06	4 1E-06	2 4E-06	5 2E-06	5 2E-06
INORG	Beryllium	7440-41-7		1 0E-10	1 0E-09	3 6E-09	3 6E-09		5 1E-09	5 1E-09	2 9E-11	3 4E-12	7 8E-12	4 1E-11	9 5E-12	6 3E-12	2 4E-11		2 4E-11	2 8E-10	1 0E-09	1 0E-09		1 5E-09	1 5E-09
INORG	Cadmium	7440-43-9	5 7E-11	6 2E-08	3 5E-07	2 1E-06	2 1E-06	1 7E-07	9 5E-07	9 5E-07	1 6E-11	1 2E-09	8 3E-10	2 0E-09	1 4E-10	2 1E-09	1 4E-08	4 5E-11	1 4E-08	9 4E-08	6 2E-07	6 2E-07	4 6E-08	2 8E-07	2 8E-07
INORG	Chromium 3+	6065-83-1	2 7E-10	2 0E-07	4 2E-06	6 9E-06	6 9E-06	2 3E-06	8 2E-06	8 2E-06	2 6E-10	1 4E-08	5 8E-09	2 0E-08	1 6E-09	2 5E-08	4 6E-08	2 2E-10	4 6E-08	1 1E-06	2 0E-06	2 0E-06	6 3E-07	2 4E-06	2 4E-06
INORG	Chromium 6+	8540-29-9	4 5E-11	3 3E-08	7 0E-07	1 1E-06	1 1E-06	3 9E-07	1 4E-06	1 4E-06	4 3E-11	2 3E-09	9 7E-10	3 3E-09	2 7E-10	4 2E-09	7 7E-09	3 6E-11	7 7E-09	1 9E-07	3 3E-07	3 3E-07	1 1E-07	4 0E-07	4 0E-07
INORG	Cobalt	7440-48-4		8 4E-09	4 7E-08	2 9E-07	2 9E-07	6 3E-08	4 4E-07	4 4E-07	3 4E-11	1 6E-10	3 0E-10	4 9E-10	1 1E-10	2 8E-10	1 9E-09		1 9E-09	1 3E-08	8 4E-08	8 4E-08	1 7E-08	1 3E-07	1 3E-07
INORG	Copper	7440-50-8	3 6E-10	3 1E-07	4 4E-06	1 1E-05	1 1E-05	3 1E-06	1 2E-05	1 2E-05	2 6E-10	1 4E-08	6 2E-09	2 1E-08	6 9E-10	2 6E-08	7 1E-08	2 8E-10	7 1E-08	1 2E-06	3 1E-06	3 1E-06	8 3E-07	3 5E-06	3 5E-06
INORG	Cyanide (total)	57-12-5		5 5E-09		1 9E-07	1 9E-07		3 3E-07	3 3E-07	7 3E-12		2 5E-10	2 6E-10	9 3E-11		1 3E-09		1 3E-09		5 5E-08	5 5E-08		9 7E-08	9 7E-08
INORG	Lead	7439-92-1	1 4E-09	1 3E-06	3 4E-05	4 4E-05	4 4E-05	3 4E-05	6 3E-05	6 3E-05	1 2E-09	1 1E-07	5 6E-08	1 7E-07	8 4E-09	2 0E-07	2 9E-07	1 1E-09	2 9E-07	9 1E-06	1 3E-05	1 3E-05	9 1E-06	1 8E-05	1 8E-05
INORG	Manganese	7439-96-5		1 4E-07	7 8E-07	4 8E-06	4 8E-06	1 1E-06	6 2E-06	6 2E-06	1 2E-08	2 6E-09	8 0E-09	2 2E-08	6 5E-09	4 7E-09	3 3E-08		3 3E-08	2 1E-07	1 4E-06	1 4E-06	2 9E-07	1 8E-06	1 8E-06
INORG	Mercury	7439-97-6	4 3E-12	1 7E-09	2 6E-08	5 9E-08	5 9E-08	2 6E-08	5 0E-08	5 0E-08	3 6E-11	8 6E-11	5 0E-11	1 7E-10	3 1E-11	1 6E-10	4 0E-10	3 5E-12	4 0E-10	7 0E-09	1 7E-08	1 7E-08	7 0E-09	1 5E-08	1 5E 08
INORG	Nickel	7440-02-0		9 3E-09	8 1E-08	3 2E-07	3 2E-07	1 7E-07	5 3E-07	5 3E-07	7 2E-11	2 7E-10	2 8E-10	6 2E-10	1 0E-10	4 9E-10	2 1E-09		2 1E-09	2 2E-08	9 3E-08	9 3E-08	4 7E-08	1 6E-07	1 6E-07
INORG	Selenium	7782-49-2		5 7E-09	9 1E-09	2 0E-07	2 0E-07	1 4E-08	6 4E-08	6 4E-08	4 1E-12	3 0E-11	9 0E-11	1 2E-10	6 8E-12	5 5E-11	1 3E-09		1 3E-09	2 5E-09	5 7E-08	5 7E-08	3 8E-09	1 9E-08	1 9E-08
INORG	Silver	7440-22-4		1 1E-08	3 2E-08	3 8E-07	3 8E-07	5 0E-08	7 0E-08	7 0E-08	2 7E-12	1 1E-10		1 1E-10	3 5E-12	2 0E-10	2 6E-09		2 6E-09	8 7E-09	1 1E-07	1 1E-07	1 3E-08	2 0E-08	2 0E-08
INORG	Thallium	7440-28-0		1 3E-10	2 4E-09	4 4E-09	4 4E-09					7 9E-12		7 9E-12		1 4E-11	3 0E-11		3 0E-11	6 4E-10	1 3E-09	1 3E-09			
INORG	Vanadium	7440-62-2		3 5E-09	3 2E-08	1 2E-07	1 2E-07	3 3E-08	2 1E-07	2 1E-07	1 1E-10	1 1E-10	1 4E-10	3 5E-10	1 3E-10	1 9E-10	7 9E-10		7 9E-10	8 5E-09	3 5E-08	3 5E-08	8 9E-09	6 3E-08	6 3E-08
INORG	Zinc	7440-66-6	2 9E-09	2 7E-06	1 1E-05	9 1E-05	9 1E-05	1 7E-05	7 3E-05	7 3E-05	9 1E-10	3 6E-08	7 9E-08	1 2E-07	3 7E-09	6 6E-08	6 1E-07	2 3E-09	6 1E-07	2 9E-06	2 7E-05	2 7E-05	4 6E-06	2 1E-05	2 1E-05
TIC	Acetaldehyde	75-07-0																							
TIC	Acetophenone	98-86-2																							
TIC	Butanol, 1-	71-36-3																							
TIC	Caprolactam	105-60-2																							
TIC	Chlorodifluoromethane	75-45-6																							
TIC	Cyclohexanone	108-94-1																							
TIC	Diethyl ether	60-29-7																							
TIC	Dioxane, 1,4-	123-91-1																							
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																							
TIC	Hexane, n-	110-54-3		1 20E-11	4 95E-10		5 0E-10					1 65E-12		1 65E-12		3 00E-12			3 00E-12	1 34E-10		1 3E-10			
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7																							
TIC	Phthalic anhydride	85-44-9		9 28E-11											5 57E-11				5 57E-11						

Table B-7b: Particulate Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			**FUTURE**						**FUTURE**								**FUTURE**								**FUTURE**						**FUTURE**					
Location of Exposure:				**AREA 1**							**AREA 2**							**AREA 3**							**AREA 4A**						**AREA 4B**					
Type of Activity at Emission Location:				Routine Industrial			Excavatio			Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavation	Const (0-10')	Const (0-4')		Routine Industrial					Routine Industrial				Excavation
			From	From	From	Total At	At Area	From	From Area	From	Total At	At Area	At Area	At Area	At Area	From	From	From	Total At	At Area	At Area	At Area	From	From	From	Total At	From	From	From	Total At	At Area
Location of Emission:			Area 1	Area 2	Area 3	Area		Area 1	2	Area 3	Area					Area 1	Area 2	Area 3	Area				Area 1	Area 2	Area 3	Area	Area 1	Area 2	Area 3	Area	
C/Q (kg/m³ per kg/m²/s)			1 2E+01	7 2E-01	8 3E-02		5 6E-01	8 2E-01	1 2E+01	5 5E-01		5 6E-01	3 3E+00	3 3E+00	2 8E-01	1 6E+00	1 2E+01			5 6E 01	3 3E+00	3 3E+00	4 7E-01	1 2E-01	2 1E-02		2 3E+00	2 7E-01	4 6E-02		5 6E-01
Analyte Group	Substance	CASRN	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
VOC	1,1,1-Trichloroethane	71-55-6		5 1E-10	3 9E-14	5 1E-10	6 6E-05		8 5E-09	2 6E-13	8 5E-09	7 6E-07	4 5E-06	1 0E-08		1 1E-09	5 6E-12	1 1E-09	3 2E-05	1 9E-04	3 0E-09		8 5E-11	9 9E-15	8 5E-11		1 9E-10	2 2E-14	1 9E-10		
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1 4E-12		1 4E-12	1 8E-07		2 3E-11		2 3E-11	2 0E-09	1 2E-08			3 0E-12		3 0E-12					2 3E-13		2 3E-13		5 1E-13		5 1E-13		
VOC	1,1,2-Trichloroethane	79-00-5	8 1E-12			8 1E-12	3 6E-07	5 6E-13	5 6E-13						1 9E-13			1 9E-13				3 2E-13		3 2E-13	1 6E-12			1 6E-12		
VOC	1,1-Dichloroethane	75-34-3		4 5E-10	3 7E-13	4 5E-10	9 8E-07		7 5E-09	2 5E-12	7 5E-09	6 6E-07	4 0E-06			1 0E-09	5 4E-11	1 1E-09	7 7E-08	4 6E-07	3 9E-08		7 5E-11	9 4E-14	7 5E-11		1 7E-10	2 1E-13	1 7E-10		
VOC	1,1-Dichloroethene	75-35-4												2 9E-09																	
VOC	1,2,4-Trimethylbenzene	95-63-6																													
VOC	1,2-Dichloroethane	107-06-2		2 5E-10		2 5E-10	1 8E-06		4 1E-09		4 1E-09	3 6E-07	2 2E-06			5 5E-10		5 5E-10	4 0E-08	2 4E-07			4 1E-11		4 1E-11		9 2E-11		9 2E-11		
VOC	1,2-Dichloroethene (total)	540-59-0	7 5E-12	6 3E-10	3 3E-11	6 7E-10	1 1E-05	5 1E-13	1 1E-08	2 2E-10	1 1E-08	9 3E-07	5 6E-06		1 8E-13	1 4E-09	4 8E-09	6 2E-09	1 2E-06	7 4E-06	2 5E-06	2 9E-13	1 1E-10	8 3E-12	1 1E-10	1 4E-12	2 4E-10	1 8E-11	2 6E-10	6 7E-10	
VOC	1,2-Dichloropropane	78-87-5		1 0E-10	8 2E-14	1 0E-10	9 8E-07		1 7E-09	5 5E-13	1 7E-09	1 5E-07	9 0E-07			2 3E-10	1 2E-11	2 4E-10	2 5E-08	1 5E-07	6 3E-09		1 7E-11	2 1E-14	1 7E-11		3 8E-11	4 6E-14	3 8E-11		
VOC	1,3,5-Trimethylbenzene	108-67-8																													
VOC	2-Butanone	78-93-3		1 9E-08		1 9E-08	1 8E-05		3 1E-07		3 1E-07	2 8E-05	1 7E-04	1 7E-04		4 1E-08		4 1E-08	1 5E-03	9 1E-03	1 7E-02		3 1E-09		3 1E-09		7 0E-09		7 0E-09		
VOC	2-Hexanone	591-78-6		1 2E-09		1 2E-09			2 0E-08		2 0E-08	1 8E-06	1 1E-05	1 7E-05		2 6E-09		2 6E-09	2 2E-08	1 3E-07			2 0E-10		2 0E-10		4 5E-10		4 5E-10		
VOC	4-Methyl-2-pentanone	108-10-1		3 1E-09		3 1E-09	1 9E-05		5 1E-08		5 1E-08	4 5E-06	2 7E-05	5 0E-05		6 8E-09		6 8E-09	2 5E-04	1 5E-03	6 3E-05		5 1E-10		5 1E-10		1 2E-09		1 2E-09		
VOC	Acetone	67-64-1		6 0E-09	5 6E-13	6 0E-09	1 8E-05		1 0E-07	3 7E-12	1 0E-07	8 8E-06	5 3E-05	1 6E-04		1 3E-08	8 1E-11	1 3E-08	1 4E-04	8 6E-04	1 8E-07		1 0E-09	1 4E-13	1 0E-09		2 2E-09	3 1E-13	2 2E-09		1 4E-09
VOC	Benzene	71-43-2		5 8E-10	1 4E-11	5 9E-10	1 4E-05		9 6E-09	9 2E-11	9 7E-09	8 5E-07	5 1E-06	7 3E-06		1 3E-09	2 0E-09	3 3E-09	6 7E-06	4 0E-05	1 1E-06		9 6E-11	3 5E-12	1 0E-10		2 2E-10	7 7E-12	2 2E-10		
VOC	Bromodichloromethane	75-27-4																													
VOC	Carbon Disulfide	75-15-0	1 3E-12			1 3E-12	1 1E-10	8 6E-14			8 6E-14				2 9E-14			2 9E-14				4 9E-14		4 9E-14	2 4E-13			2 4E-13		
VOC	Carbon Tetrachloride	56-23-5																													
VOC	Chlorobenzene	108-90-7			2 7E-11	2 7E-11	4 5E-07			1 8E-10	1 8E-10						3 9E-09	3 9E-09	4 7E-06	2 8E-05	2 1E-06			6 8E-12	6 8E-12			1 5E-11	1 5E-11		
VOC	Chloroethane	75-00-3																													
VOC	Chloroform	67-66-3	1 9E-12	7 1E-10	4 3E-14	7 1E-10	1 3E-05	1 3E-13	1 2E-08	2 9E-13	1 2E-08	1 0E-06	6 3E-06		4 4E-14	1 6E-09	6 3E-12	1 6E-09	2 4E-10	1 5E-09	3 3E-09	7 4E-14	1 2E-10	1 1E-14	1 2E-10	3 6E-13	2 7E-10	2 4E-14	2 7E-10		
VOC	Chloromethane	74-87-3																													
VOC	Ethyl Benzene	100-41-4		5 8E-09	6 1E-10	6 4E-09	2 6E-05		9 6E-08	4 0E-09	1 0E-07	8 5E-06	5 1E-05	1 0E-04		1 3E-08	8 8E-08	1 0E-07	1 1E-04	6 5E-04	4 1E-04		9 6E-10	1 5E-10	1 1E-09		2 2E-09	3 4E-10	2 5E-09		
VOC	Methylene Chloride	75-09-2		5 6E-10	8 7E-13	5 6E-10	1 6E-05		9 4E-09	5 7E-12	9 4E-09	8 3E-07	5 0E-06	6 7E-09		1 2E-09	1 3E-10	1 4E-09	1 2E-07	7 3E-07	3 7E-08		9 4E-11	2 2E-13	9 4E-11		2 1E-10	4 8E-13	2 1E-10		
VOC	Styrene	100-42-5		3 7E-10	1 0E-10	4 7E-10	4 0E-06		6 2E-09	6 6E-10	6 9E-09	5 5E-07	3 3E-06			8 3E-10	1 4E-08	1 5E-08	1 2E-05	7 0E-05	7 7E-06		6 2E-11	2 5E-11	8 7E-11		1 4E-10	5 5E-11	1 9E-10		
VOC	Tetrachloroethene	127-18-4	2 2E-10	4 8E-09	1 1E-09	6 1E-09	3 3E-05	1 5E-11	8 0E-08	7 2E-09	8 8E-08	7 1E-06	4 3E-05	1 2E-04	5 2E-12	1 1E-08	1 6E-07	1 7E-07	2 0E-04	1 2E-03	1 2E-04	8 7E-12	8 0E-10	2 7E-10	1 1E-09	4 3E-11	1 8E-09	6 0E-10	2 5E-09		
VOC	Tetrahydrofuran	109-99-9																													
VOC	Toluene	108-88-3	8 3E-11	2 5E-08	2 8E-09	2 8E-08	5 4E-04	5 7E-12	4 2E-07	1 8E-08	4 4E-07	3 7E-05	2 2E-04	2 5E-04	1 9E-12	5 8E-08	4 0E-07	4 6E-07	7 1E-04	4 2E-03	2 1E-03	3 3E-12	4 2E-09	7 0E-10	4 9E-09	1 6E-11	9 5E-09	1 5E-09	1 1E-08		
VOC	Trichloroethene	79-01-6	6 0E-11	2 1E-09	4 3E-10	2 6E-09	1 5E-05	4 1E-12	3 5E-08	2 9E-09	3 7E-08	3 1E-06	1 8E-05	5 0E-05	1 4E-12	4 6E-09	6 3E-08	6 7E-08	8 1E-05	4 8E-04	3 3E-05	2 3E-12	3 5E-10	1 1E-10	4 6E-10	1 1E-11	7 8E-10	2 4E-10	1 0E-09		
VOC	Vinyl Chloride	75-01-4		4 1E-12		4 1E-12			6 9E-11		6 9E-11	6 1E-09	3 7E-08			9 2E-12		9 2E-12					6 9E-13		6 9E-13		1 6E-12		1 6E-12		
VOC	Xylenes (total)	1330-20-7	2 9E-09	5 2E-08	2 5E-09	5 7E-08	1 2E-04	2 0E-10	8 6E-07	1 6E-08	8 8E-07	7 6E-05	4 6E-04	1 2E-03	6 7E-11	1 2E-07	3 6E-07	4 7E-07	5 8E-04	3 5E-03	2 8E-03	1 1E-10	8 6E-09	6 3E-10	9 4E-09	5 5E-10	1 9E-08	1 4E-09	2 1E-08		
VOC	cis-1,2-Dichloroethene	156-59-2		8 7E-12		8 7E-12	5 3E-05		1 4E-10		1 4E-10	1 3E-08	7 7E-08	4 7E-08		1 9E-11		1 9E-11	9 8E-10	5 9E-09			1 4E-12		1 4E-12		3 2E-12		3 2E-12		
VOC	m,p-xylene	6777-61-2		4 0E-11		4 0E-11	7 1E-05		6 7E-10		6 7E-10	6 0E-08	3 6E-07	1 1E-08		9 0E-11		9 0E-11	4 9E-06	3 0E-05			6 7E-12		6 7E-12		1 5E-11		1 5E-11		
VOC	ortho-xylene	95-47-6		2 0E-11		2 0E-11	1 5E-05		3 4E-10		3 4E-10	3 0E-08	1 8E-07	4 0E-09		4 5E-11		4 5E-11	1 9E-06	1 1E-05	3 8E-09		3 4E-12		3 4E-12		7 7E-12		7 7E-12		
VOC	p-Cymene	99-87-6																													
VOC	trans-1,2-Dichloroethene	156-60-5																													
SVOC	1,2,4-Trichlorobenzene	120-82-1		3 4E-10		3 4E-10	1 9E-07		5 7E-09		5 7E-09	5 0E-07	3 0E-06			7 6E-10		7 6E-10					5 7E-11		5 7E-11		1 3E-10		1 3E-10		
SVOC	1,2-Dichlorobenzene	95-50-1		2 0E-09	2 6E-12	2 0E-09	6 8E-07		3 4E-08	1 7E-11	3 4E-08	3 0E-06	1 8E-05	7 0E-05		4 5E-09	3 7E-10	4 9E-09	1 8E-08	1 1E-07	1 3E-07		3 4E-10	6 5E-13	3 4E-10		7 6E-10	1 4E-12	7 6E-10		
SVOC	1,3-Dichlorobenzene	541-73-1					4 3E-08																								
SVOC	1,4-Dichlorobenzene	106-46-7		3 4E-11		3 4E-11	2 3E-07		5 7E-10		5 7E-10	5 1E-08	3 0E-07			7 6E-11		7 6E-11	5 2E-09	3 1E-08			5 7E-12		5 7E-12		1 3E-11		1 3E-11		
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																													
SVOC	2,4,5-Trichlorophenol	95-95-4			7 4E-13	7 4E-13				4 9E-12	4 9E-12						1 1E-10	1 1E-10	9 4E-09	5 7E-08	5 7E-08			1 9E-13	1 9E-13			4 1E-13	4 1E-13		
SVOC	2,4-Dichlorophenol	120-83-2					1 9E-07																								
SVOC	2,4-Dimethylphenol	105-67-9		1 2E-09	2 1E-11	1 2E-09	4 8E-07		2 0E-08	1 4E-10	2 1E-08	1 8E-06	1 1E-05	2 9E-05		2 7E-09	3 1E-09	5 8E-09	9 1E-07	5 4E-06	1 6E-06		2 0E-10	5 4E-12	2 1E-10		4 6E-10	1 2E-11	4 7E-10		
SVOC	2,4-Dinitrotoluene	121-14-2																	4 7E-08	2 8E-07											
SVOC	2,6-Dinitrotoluene	606-20-2		1 3E-10		1 3E-10			2 2E-09		2 2E-09	1 9E-07	1 2E-06			2 9E-10		2 9E-10					2 2E-11		2 2E-11		4 9E-11		4 9E-11		
SVOC	2-Chloronaphthalene	91-58-7																													
SVOC	2-Methylnaphthalene	91-57-6	2 1E-10	2 0E-08	7 4E-11	2 0E-08	3 2E-06	1 5E-11	3 3E-07	4 9E-10	3 3E-07	2 9E-05	1 7E-04	1 1E-05	5 0E-12	4 3E-08	1 1E-08	5 4E-08	2 8E-06	1 7E-05	1 0E-05	8 3E-12	3 3E-09	1 9E-11	3 3E-09	4 1E-11	7 3E-09	4 1E-11	7 4E-09	1 7E-09	
SVOC	2-Methylphenol	95-48-7		1 4E-09	2 0E-11	1 4E-09	5 0E-07		2 4E-08	1 4E-10	2 4E-08	2 1E-06	1 3E-05	4 0E-05		3 2E-09	2 9E-09	6 1E-09	5 4E-07	3 2E-06	1 6E-06		2 4E-10	5 2E-12	2 4E-10		5 3E-10	1 1E-11	5 5E-10		
SVOC	3,3'-Dichlorobenzidine	91-94-1	1 3E-10			1 3E-10	1 2E-08	9 0E-12			9 0E-12				3 1E-12			3 1E-12				5 2E-12			5 2E-12	2 5E-11		2 5E-11		
SVOC	4-Bromophenyl-phenylether	101-55-3																													
SVOC	4-Chloro-3-methylphenol	59-50-7																													
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																													
SVOC	4-Methylphenol	106-44-5		2 0E-09	2 0E-11	2 0E-09	5 7E-07		3 3E-08	1 3E-10	3 3E-08	2 9E-06	1 8E-05	6 0E-05		4 4E-09	2 9E-09	7 3E-09	5 0E-07	3 0E-06	8 1E-07		3 3E-10	5 0E-12	3 4E-10		7 5E-10	1 1E 11	7 6E-10		
SVOC	4-Nitrophenol	100-02-7																	3 7E-09	2 2E-08											
SVOC	Acenaphthene	83-32-9		5 6E-10	1 6E-12	5 7E-10	4 9E-07		9 4E-09	1 0E-11	9 4E-09	8 3E-07	5 0E-06			1 3E-09	2 3E-10	1 5E-09	3 6E-08	2 1E-07	1 2E-07		9 4E-11	3 9E-13	9 4E-11		2 1E-10	8 7E-13	2 1E-10		
SVOC	Acenaphthylene	208-96-8	2 3E-10			2 3E-10	2 5E-07	1 6E-11			1 6E-11				5 4E-12			5 4E-12				9 1E-12		9 1E-12	4 4E-11			4 4E-11		1 6E-08
SVOC	Anthracene	120-12-7	5 6E-11	4 9E-11	2 9E-12	1 1E-10	5 0E-08	3 8E-12	8 1E-10	1 9E-11	8 4E-10	7 2E-08	4 3E-07		1 3E-12	1 1E-10	4 1E-10	5 2E-10	6 1E-08	3 6E-07	2 2E-07	2 2E-12	8 1E-12	7 2E-13	1 1E-11	1 1E-11	1 8E-11	1 6E-12	3 1E-11	1 4E-08	
SVOC	Benzo(a)anthracene	56-55-3	3 7E-11	1 0E-10	1 0E-11	1 5E-10	6 6E-10	2 5E-12	1 7E-09	6 9E-11	1 8E-09	1 5E-07	9 0E-07		8 6E-13	2 3E-10	1 5E-09	1 7E-09	1 2E-07	7 2E-07	5 4E-07	1 4E-12	1 7E-11	2 6E-12	2 1E-11	7 1E-12	3 8E-11	5 8E-12	5 1E-11	2 0E-08	
SVOC	Benzo(a)pyrene	50-32-8	5 2E-11	5 6E-11		1 1E-10	9 2E-10	3 5E-12	9 4E-10		9 4E-10	8 3E-08	5 0E-07		1 2E-12	1 3E-10		1 3E-10	7 8E-08	4 7E-07	4 7E-07	2 0E-12	9 4E-12		1 1E-11	9 9E-12	2 1E-11		3 1E-11	2 2E-08	
SVOC	Benzo(b)fluoranthene	205-99-2	5 4E-11	2 0E-10	1 9E-12	2 6E-10	9 6E-10	3 7E-12	3 3E-09	1 2E-11	3 3E-09	2 9E-07	1 8E-06		1 3E-12	4 4E-10	2 7E-10	7 1E-10	1 8E-07	1 1E-06	7 2E-07	2 1E-12	3 3E-11	4 7E-13	3 6E-11	1 0E-11	7 5E-11	1 0E-12	8 6E-11	2 4E-08	
SVOC	Benzo(g,h,i)perylene	191-24-2		5 6E-11		5 6E-11			9 4E-10		9 4E-10	8 3E-08	5 0E-07			1 3E-10		1 3E-10	6 1E-08	3 7E-07	3 7E-07		9 4E-12		9 4E-12		2 1E-11		2 1E-11		1 6E-08
SVOC	Benzo(k)fluoranthene	207-08-9	4 5E-11	2 0E-10	1 9E-12	2 5E-10	8 1E-10	3 1E-12	3 3E-09	1 2E-11	3 3E-09	2 9E-07	1 8E-06		1 1E-12	4 4E-10	2 7E-10	7 1E-10	1 8E-07	1 1E-06	7 2E-07	1 8E-12	3 3E-11	4 7E-13	3 5E-11	8 7E-12	7 5E-11	1 0E-12	8 4E-11	2 3E-08	
SVOC	Benzoic Acid	65-85-0		4 5E-09		4 5E-09	7 2E-07		7 5E-08		7 5E-08	6 7E-06	4 0E-05			1 0E-08		1 0E-08	1 1E-05	6 3E-05			7 5E-10		7 5E-10		1 7E-09		1 7E-09		
SVOC	Benzyl Alcohol	100-51-6		1 0E-09		1 0E-09			1 7E-08		1 7E-08	1 5E-06	8 8E-06			2 2E-09		2 2E-09					1 7E-10		1 7E-10		3 7E-10		3 7E-10		
SVOC	Butylbenzylphthalate	85-68-7		1 6E-08	7 4E-11	1 6E-08	5 6E-06		2 6E-07	4 9E-10	2 6E-07	2 3E-05	1 4E-04			3 5E-08	1 1E-08	4 6E-08	1 7E-06	1 0E-05	1 1E-05		2 6E-09	1 9E-11	2 7E-09		5 9E-09	4 1E-11	6 0E-09		
SVOC	Carbazole	86-74-8																													2 0E-09
SVOC	Chrysene	218-01-9	4 6E-11	1 4E-10	5 6E-12	1 9E-10	8 2E-10	3 2E-12	2 4E-09	3 7E-11	2 4E-09	2 1E-07	1 3E-06		1 1E-12	3 2E-10	8 1E-10	1 1E-09	8 6E-08	5 1E-07	4 3E-07	1 8E-12	2 4E-11	1 4E-12	2 7E-11	8 9E-12	5 4E-11	3 1E-12	6 6E-11	2 2E-08	
SVOC	Di-n-butylphthalate	84-74-2	3 2E-11	2 8E-09	6 5E-11	2 9E-09	3 8E-06	2 2E-12	4 7E-08	4 3E-10	4 8E-08	4 2E-06	2 5E-05	1 7E-05	7 5E-13	6 3E-09	9 4E-09	1 6E-08	3 1E-06	1 9E-05	1 4E-05	1 3E-12	4 7E-10	1 6E-11	4 9E 10	6 1E-12	1 1E-09	3 6E-11	1 1E 09	4 7E 09	
SVOC	Di-n-octylphthalate	117-84-0	6 9E-11	4 9E-10	5 6E-12	5 6E-10	4 5E-07	4 7E-12	8 1E-09	3 7E-11	8 2E-09	7 2E-07	4 3E-06		1 6E-12	1 1E-09	8 1E-10	1 9E-09	7 2E-07	4 3E-06	4 9E-06	2 7E-12	8 1E-11	1 4E-12	8 6E-11	1 3E-11	1 8E-10	3 1E 12	2 0E-10		
SVOC	Dibenzo(a,h)anthracene	53-70-3																	1 5E-08	9 0E-08	9 0E-08										1 6E-08
SVOC	Dibenzofuran	132-64-9		9 4E-11	1 9E-12	9 6E-11	1 9E-07		1 6E-09	1 2E-11	1 6E-09	1 4E-07	8 3E-07			2 1E-10	2 7E-10	4 8E-10	3 3E-08	2 0E-07	1 3E-07		1 6E-11	4 7E-13	1 6E-11		3 5E-11	1 0E-12	3 6E-11		
SVOC	Diethylphthalate	84-66-2		9 3E-10	6 5E-13	9 3E-10	7 0E-07		1 6E-08	4 3E-12	1 6E-08	1 4E-06	8 2E-06			2 1E-09	9 4E-11	2 2E-09	2 2E-07	1 3E-06	8 6E-07		1 6E-10	1 6E-13	1 6E-10		3 5E-10	3 6E-13	3 5E-10		
SVOC	Dimethylphthalate	131-11-3		9 8E-09	6 1E-12	9 8E-09	2 4E-06		1 6E-07	4 0E-11	1 6E-07	1 4E-05	8 7E-05	3 7E-05		2 2E-08	8 8E-10	2 3E-08	4 8E-07	2 9E-06	4 7E-07		1 6E-09	1 5E-12	1 6E-09		3 7E-09	3 4E-12	3 7E-09		
SVOC	Fluoranthene	206-44-0	6 1E-11	1 5E-10	1 5E-11	2 3E-10	1 7E-07	4 2E-12	2 6E-09	9 8E-11	2 7E-09	2 3E-07	1 4E-06		1 4E-12	3 4E-10	2 1E-09	2 5E-09	3 1E-07	1 9E-06	6 9E-07	2 4E-12	2 6E-11	3 7E-12	3 2E-11	1 2E-11	5 8E-11	8 2E-12	7 8E-11	2 2E 08	
SVOC	Fluorene	86-73-7		6 7E-10	2 6E-12	6 7E-10	4 7E-07		1 1E-08	1 8E-11	1 1E-08	9 9E-07	5 9E-06			1 5E-09	3 8E-10	1 9E-09	5 0E-08	3 0E-07	2 1E-07		1 1E-10	6 7E-13	1 1E-10		2 5E-10	1 5E-12	2 5E-10		
SVOC	Hexachlorobenzene	118-74-1	1 8E-11			1 8E-11	3 2E-10	1 2E-12			1 2E-12				4 2E-13			4 2E-13				7 1E-13	3 5E-12	7 1E-13		3 5E-12		3 5E-12		
SVOC	Hexachlorobutadiene	87-68-3		5 1E-10		5 1E-10	2 7E-07		8 6E-09		8 6E-09	7 6E-07	4 6E-06			1 1E-09		1 1E-09					8 6E-11		8 6E-11		1 9E-10		1 9E-10		
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	2 8E-11	5 3E-11		8 0E-11	4 9E-10	1 9E-12	8 8E-10		8 8E-10	7 8E-08	4 7E-07		6 4E-13	1 2E-10		1 2E-10	4 6E-08	2 7E-07	2 7E-07	1 1E-12	8 8E-12		9 9E-12	5 3E-12	2 0E-11		2 5E-11	1 9E-08	
SVOC	Isophorone	78-59-1	8 8E-11	8 7E-09	1 7E-10	8 9E-09	9 6E-06	6 0E-12	1 4E-07	1 1E-09	1 5E-07	1 3E-05	7 7E-05	7 0E-05	2 0E-12	1 9E-08	2 5E-08	4 4E-08	2 7E-05	1 6E-04	3 8E-05	3 4E-12	1 4E-09	4 4E-11	1 5E-09	1 7E-11	3 2E 09	9 6E-11	3 4E-09	2 3E-09	
SVOC	N-Nitroso-di-n-propylamine	621-64-7																													
SVOC	N-Nitrosodiphenylamine	86-30-6			1 9E-11	1 9E-11				1 2E-10	1 2E-10						2 7E-09	2 7E-09	1 3E-07	7 9E-07	1 0E-06			4 7E-12	4 7E-12			1 0E-11	1 0E-11		

Table B-7b: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			FUTURE						FUTURE								FUTURE								FUTURE								
Location of Exposure:			AREA 1						AREA 2								AREA 3								AREA 4A				AREA 4B				
Type of Activity at Emission Location:			Routine Industrial				Excavatio		Routine Industrial				Excavatio	Const (0-10')	Const (0-4')		Routine Industrial				Excavation	Const (0-10')	Const (0-4')		Routine Industrial				Routine Industrial				Excavation
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	At Area		From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area
C/Q (kg/m^3 per kg/m^2/s)			1.2E+01	7.2E-01	8.3E-02		5.6E-01		8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Naphthalene	91-20-3		3.8E-09	1.2E-10	3.9E-09	5.1E-06		6.4E-08	8.0E-10	6.4E-08	5.6E-06	3.4E-05	4.7E-05		8.5E-09	1.8E-08	2.6E-08	6.0E-06	3.6E-05	1.6E-05		6.4E-10	3.1E-11	6.7E-10		1.4E-09	6.7E-11	1.5E-09	1.4E-09
SVOC	Pentachlorophenol	87-86-5		1.7E-09	6.5E-12	1.7E-09	8.8E-07		2.9E-08	4.3E-11	2.9E-08	2.6E-06	1.5E-05			3.9E-09	9.4E-10	4.8E-09	7.3E-07	4.4E-06	5.0E-07		2.9E-10	1.6E-12	2.9E-10		6.5E-10	3.6E-12	6.6E-10	
SVOC	Phenanthrene	85-01-8	3.8E-11	6.7E-10	1.3E-11	7.2E-10	4.0E-07	2.6E-12	1.1E-08	8.9E-11	1.1E-08	9.8E-07	5.9E-06		8.9E-13	1.5E-09	1.9E-09	3.4E-09	3.2E-07	1.9E-06	1.2E-06	1.5E-12	1.1E-10	3.4E-12	1.2E-10	7.3E-12	2.5E-10	7.4E-12	2.6E-10	8.3E-09
SVOC	Phenol	108-95-2		2.1E-09	2.8E-11	2.1E-09	9.3E-07		3.4E-08	1.8E-10	3.5E-08	3.1E-06	1.8E-05	5.7E-05		4.6E-09	4.0E-09	8.6E-09	9.2E-06	5.5E-05	4.7E-06		3.4E-10	7.0E-12	3.5E-10		7.8E-10	1.5E-11	7.9E-10	
SVOC	Pyrene	129-00-0	7.5E-11	3.0E-10	1.0E-11	3.9E-10	2.6E-07	5.1E-12	5.0E-09	6.6E-11	5.1E-09	4.4E-07	2.7E-06		1.8E-12	6.7E-10	1.4E-09	2.1E-09	2.1E-07	1.3E-06	6.0E-07	2.9E-12	5.0E-11	2.5E-12	5.6E-11	1.4E-11	1.1E-10	5.5E-12	1.3E-10	2.1E-08
SVOC	bis(2-Chloroethyl) ether	111-44-4		7.1E-10		7.1E-10	4.5E-07		1.2E-08		1.2E-08	1.0E-06	6.3E-06			1.6E-09		1.6E-09					1.2E-10		1.2E-10		2.7E-10		2.7E-10	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	6.1E-09	1.3E-08	1.9E-09	2.1E-08	1.5E-05	4.2E-10	2.1E-07	1.2E-08	2.3E-07	1.9E-05	1.1E-04	3.7E-05	1.4E-10	2.9E-08	2.7E-07	3.0E-07	7.3E-05	4.4E-04	1.3E-04	2.4E-10	2.1E-09	4.7E-10	2.9E-09	1.2E-09	4.8E-09	1.0E-09	7.0E-09	2.2E-07
P/PCB	4,4'-DDD	72-54-8		5.5E-11	6.5E-13	5.5E-11	1.6E-07		9.1E-10	4.3E-12	9.2E-10	8.1E-08	4.9E-07			1.2E-10	9.4E-11	2.2E-10	8.3E-09	5.0E-08	5.0E-08		9.1E-12	1.6E-13	9.3E-12		2.1E-11	3.6E-13	2.1E-11	4.3E-09
P/PCB	4,4'-DDE	72-55-9		3.3E-11		3.3E-11			5.5E-10		5.5E-10	4.9E-08	2.9E-07			7.4E-11		7.4E-11					5.5E-12		5.5E-12		1.2E-11		1.2E-11	1.6E-08
P/PCB	4,4'-DDT	50-29-3		4.7E-11		4.7E-11	2.1E-07		7.8E-10		7.8E-10	6.9E-08	4.2E-07			1.0E-10		1.0E-10					7.8E-12		7.8E-12		1.8E-11		1.8E-11	1.3E-08
P/PCB	Aldrin	309-00-2		2.3E-10		2.3E-10			3.8E-09		3.8E-09	3.4E-07	2.0E-06			5.0E-10		5.0E-10					3.8E-11		3.8E-11		8.5E-11		8.5E-11	
P/PCB	Aroclor-1242	3469-21-9	2.5E-10		5.3E-11	3.1E-10	1.4E-06	1.7E-11		3.5E-10	3.7E-10					5.9E-12		7.6E-09	7.6E-09	1.4E-06	8.6E-06	4.9E-05	9.9E-12		1.3E-11	2.3E-11	4.9E-11		2.9E-11	7.8E-11	
P/PCB	Aroclor-1248	2672-29-6	3.4E-10	1.9E-09	3.0E-11	2.2E-09	9.4E-07	2.3E-11	3.1E-08	2.0E-10	3.1E-08	2.8E-06	1.7E-05	4.3E-05	7.8E-12	4.1E-09	4.4E-09	8.5E-09	7.8E-07	4.7E-06	1.4E-05	1.3E-11	3.1E-10	7.7E-12	3.3E-10	6.4E-11	7.0E-10	1.7E-11	7.8E-10	1.2E-08
P/PCB	Aroclor-1254	1097-69-1	1.5E-09	1.4E-09	4.0E-11	2.9E-09	1.6E-06	1.0E-10	2.3E-08	2.6E-10	2.3E-08	2.0E-06	1.2E-05	1.6E-06	3.5E-11	3.0E-09	5.8E-09	8.8E-09	5.3E-07	3.2E-06	3.9E-06	5.9E-11	2.3E-10	1.0E-11	2.9E-10	2.9E-10	5.1E-10	2.2E-11	8.2E-10	4.9E-07
P/PCB	Aroclor-1260	1096-82-5	3.1E-10	1.3E-08		1.3E-08	9.8E-07	2.1E-11	2.2E-07		2.2E-07	1.9E-05	1.2E-04	1.1E-05	7.3E-12	2.9E-08		2.9E-08	3.2E-07	1.9E-06	4.9E-06	1.2E-11	2.2E-09		2.2E-09	6.0E-11	4.9E-09		4.9E-09	5.4E-08
P/PCB	Dieldrin	60-57-1					1.1E-08																								
P/PCB	Endosulfan I	959-98-8					5.3E-08																							2.2E-08	
P/PCB	Endosulfan sulfate	1031-07-8																												3.3E-09	
P/PCB	Endrin	72-20-8					7.1E-08																							8.3E-09	
P/PCB	Endrin aldehyde	7421-93-4																													
P/PCB	Endrin ketone	3494-70-5	6.9E-12			6.9E-12	6.1E-10	4.7E-13			4.7E-13				1.6E-13			1.6E-13				2.7E-13		2.7E-13	1.3E-12			1.3E-12		
P/PCB	Heptachlor	76-44-8			3.8E-13	3.8E-13				2.5E-12	2.5E-12						5.5E-11	5.5E-11	4.9E-09	2.9E-08	2.9E-08			9.7E-14	9.7E-14			2.1E-13	2.1E-13	3.4E-09
P/PCB	Heptachlor epoxide	1024-57-3			1.8E-13	1.8E-13				1.2E-12	1.2E-12						2.6E-11	2.6E-11	2.3E-09	1.4E-08	1.4E-08			4.6E-14	4.6E-14			1.0E-13	1.0E-13	
P/PCB	Methoxychlor	72-43-5																												1.6E-08	
P/PCB	alpha-BHC	319-84-6		1.2E-11		1.2E-11			2.1E-10		2.1E-10	1.8E-08	1.1E-07			2.8E-11		2.8E-11					2.1E-12		2.1E-12		4.7E-12		4.7E-12	
P/PCB	alpha-Chlordane	5103-71-9																												1.2E-08	
P/PCB	beta-BHC	319-85-7		2.4E-11		2.4E-11			3.9E-10		3.9E-10	3.5E-08	2.1E-07			5.3E-11		5.3E-11					3.9E-12		3.9E-12		8.9E-12		8.9E-12	1.4E-09
P/PCB	gamma-BHC	58-89-9																												1.6E-09	
P/PCB	gamma-Chlordane	5103-74-2					5.4E-08																							2.7E-09	
INORG	Antimony	7440-36-0	4.5E-10	2.5E-09	2.9E-10	3.2E-09	7.3E-07	3.1E-11	4.1E-08	1.9E-09	4.3E-08	3.6E-06	2.2E-05	2.5E-05	1.0E-11	5.5E-09	4.2E-08	4.8E-08	7.5E-06	4.5E-05	2.5E-05	1.8E-11	4.1E-10	7.4E-11	5.0E-10	8.6E-11	9.2E-10	1.6E-10	1.2E-09		
INORG	Arsenic	7440-38-2	1.7E-09	1.8E-10	1.3E-10	2.1E-09	2.2E-07	1.2E-10	3.0E-09	8.8E-10	4.0E-09	2.7E-07	1.6E-06	2.2E-06	4.1E-11	4.1E-10	1.9E-08	2.0E-08	5.1E-07	3.0E-06	5.9E-06	6.8E-11	3.0E-11	3.4E-11	1.3E-10	3.3E-10	6.9E-11	7.4E-11	4.7E-10	4.2E-07	
INORG	Barium	7440-39-3	9.3E-08	3.7E-08	1.1E-08	1.4E-07	1.2E-05	6.4E-09	6.1E-07	7.1E-08	6.9E-07	5.4E-05	3.2E-04	9.0E-04	2.2E-09	8.1E-08	1.5E-06	1.6E-06	1.4E-04	8.1E-04	1.0E-03	3.6E-09	6.1E-09	2.7E-09	1.2E-08	1.8E-08	1.4E-08	5.9E-09	3.7E-08		
INORG	Beryllium	7440-41-7	2.0E-09	1.2E-11	6.5E-12	2.0E-09	4.4E-08	1.3E-10	2.0E-10	4.3E-11	3.7E-10	1.7E-08	1.0E-07		4.6E-11	2.6E-11	9.4E-10	1.0E-09	3.4E-08	2.0E-07	2.9E-07	7.7E-11	2.0E-12	1.6E-12	8.0E-11	3.7E-10	4.4E-12	3.6E-12	3.8E-10		
INORG	Cadmium	7440-43-9	1.1E-09	4.0E-09	6.9E-10	5.7E-09	6.7E-07	7.2E-11	6.6E-08	4.6E-09	7.1E-08	5.9E-06	3.5E-05	1.7E-05	2.5E-11	8.9E-09	1.0E-07	1.1E-07	2.0E-05	1.2E-04	5.5E-05	4.1E-11	6.6E-10	1.7E-10	8.8E-10	2.0E-10	1.5E-09	3.8E-10	2.1E-09	3.3E-07	
INORG	Chromium 3+	6065-83-1	1.7E-08	4.8E-08	4.8E-09	7.0E-08	7.6E-06	1.2E-09	8.0E-07	3.2E-08	8.3E-07	7.0E-05	4.2E-04	2.4E-04	4.0E-10	1.1E-07	7.0E-07	8.0E-07	6.6E-05	3.9E-04	4.7E-04	6.7E-10	8.0E-09	1.2E-09	9.8E-09	3.3E-09	1.8E-08	2.7E-09	2.4E-08	1.6E-06	
INORG	Chromium 6+	8540-29-9	2.9E-09	8.0E-09	8.1E-10	1.2E-08	1.3E-06	2.0E-10	1.3E-07	5.3E-09	1.4E-07	1.2E-05	7.0E-05	4.0E-05	6.7E-11	1.8E-08	1.2E-07	1.3E-07	1.1E-05	6.6E-05	7.9E-05	1.1E-10	1.3E-09	2.0E-10	1.6E-09	5.5E-10	3.0E-09	4.5E-10	4.0E-09	2.6E-07	
INORG	Cobalt	7440-48-4	2.3E-09	5.3E-10	2.5E-10	3.0E-09	5.1E-07	1.5E-10	8.9E-09	1.6E-09	1.1E-08	7.9E-07	4.7E-06	6.3E-06	5.3E-11	1.2E-09	3.6E-08	3.7E-08	2.7E-06	1.6E-05	2.5E-05	8.8E-11	8.9E-11	6.2E-11	2.4E-10	4.3E-10	2.0E-10	1.4E-10	7.7E-10		
INORG	Copper	7440-50-8	1.7E-08	5.0E-08	5.2E-09	7.2E-08	3.2E-06	1.2E-09	8.3E-07	3.4E-08	8.6E-07	7.3E-05	4.4E-04	3.1E-04	4.0E-10	1.1E-07	7.5E-07	8.6E-07	1.0E-04	6.0E-04	6.8E-04	6.7E-10	8.3E-09	1.3E-09	1.0E-08	3.3E-09	1.9E-08	2.9E-09	2.5E-08	2.1E-06	
INORG	Cyanide (total)	57-12-5	4.9E-10		2.1E-10	7.0E-10	4.3E-07	3.3E-11		1.4E-09	1.4E-09				1.1E-11		3.0E-08	3.0E-08	1.8E-06	1.1E-05	1.9E-05	1.9E-11		5.3E-13	7.2E-11	9.3E-11		1.2E-10	2.1E-10		
INORG	Lead	7439-92-1	8.1E-08	3.8E-07	4.6E-08	5.1E-07	3.9E-05	5.5E-09	6.4E-06	3.1E-07	6.7E-06	5.7E-04	3.4E-03	3.4E-03	1.9E-09	8.5E-07	6.7E-06	7.6E-06	4.2E-04	2.5E-03	3.6E-03	3.2E-09	6.4E-08	1.2E-08	7.9E-08	1.5E-08	1.4E-07	2.6E-08	1.9E-07	8.0E-06	
INORG	Manganese	7439-96-5	7.8E-07	8.9E-09	6.7E-09	7.9E-07	3.0E-05	5.3E-08	1.5E-07	4.4E-08	2.5E-07	1.3E-05	7.9E-05	1.1E-04	1.8E-08	2.0E-08	9.7E-07	1.0E-06	4.6E-05	2.8E-04	3.6E-04	3.0E-08	1.5E-09	1.7E-09	3.4E-08	1.5E-07	3.3E-09	3.7E-09	1.6E-07		
INORG	Mercury	7439-97-6	2.4E-09	3.0E-10	4.1E-11	2.7E-09	1.5E-07	1.6E-10	4.9E-09	2.7E-10	5.4E-09	4.4E-07	2.6E-06	2.6E-06	5.6E-11	6.6E-10	6.0E-09	6.7E-09	5.7E-07	3.4E-06	2.9E-06	9.5E-11	4.9E-11	1.0E-11	1.5E-10	4.6E-10	1.1E-10	2.3E-11	6.0E-10	2.5E-08	
INORG	Nickel	7440-02-0	4.8E-09	9.3E-10	2.3E-10	6.0E-09	4.7E-07	3.3E-10	1.5E-08	1.5E-09	1.7E-08	1.4E-06	8.2E-06	1.8E-05	1.1E-10	2.1E-09	3.3E-08	3.6E-08	3.0E-06	1.8E-05	3.1E-05	1.9E-10	1.5E-10	5.8E-11	4.0E-10	9.2E-10	3.5E-10	1.3E-10	1.4E-09		
INORG	Selenium	7782-49-2	2.7E-10	1.0E-10	7.5E-11	4.5E-10	3.2E-08	1.8E-11	1.7E-09	4.9E-10	2.2E-09	1.5E-07	9.2E-07	1.4E-06	6.3E-12	2.3E-10	1.1E-08	1.1E-08	1.9E-06	1.1E-05	3.7E-06	1.1E-11	1.7E-11	1.9E-11	4.7E-11	5.2E-11	3.9E-11	4.1E-11	1.3E-10		
INORG	Silver	7440-22-4	1.8E-10	3.7E-10		5.5E-10	1.6E-08	1.2E-11	6.2E-09		6.2E-09	5.5E-07	3.3E-06	5.0E-06	4.2E-12	8.2E-10		8.2E-10	3.7E-06	2.2E-05	4.0E-06	7.1E-12	6.2E-11		6.9E-11	3.5E-11	1.4E-10		1.7E-10		
INORG	Thallium	7440-28-0		2.7E-11		2.7E-11			4.5E-10		4.5E-10	4.0E-08	2.4E-07			6.0E-11		6.0E-11	4.2E-08	2.5E-07			4.5E-12		4.5E-12		1.0E-11		1.0E-11	
INORG	Vanadium	7440-62-2	7.3E-09	3.6E-10	1.1E-10	7.8E-09	6.2E-07	5.0E-10	6.0E-09	7.5E-10	7.3E-09	5.3E-07	3.2E-06	3.3E-06	1.7E-10	8.0E-10	1.6E-08	1.7E-08	1.1E-06	6.8E-06	1.2E-05	2.9E-10	6.0E-11	2.9E-11	3.8E-10	1.4E-09	1.4E-10	6.3E-11	1.6E-09		
INORG	Zinc	7440-66-6	6.1E-08	1.2E-07	6.6E-08	2.5E-07	1.7E-05	4.2E-09	2.1E-06	4.4E-07	2.5E-06	1.8E-04	1.1E-03	1.7E-03	1.4E-09	2.8E-07	9.5E-06	9.8E-06	8.7E-04	5.2E-03	4.2E-03	2.4E-09	2.1E-08	1.7E-08	4.0E-08	1.2E-08	4.7E-08	3.7E-08	9.5E-08	1.7E-05	
TIC	Acetaldehyde	75-07-0																													
TIC	Acetophenone	98-86-2																													
TIC	Butanol, 1-	71-36-3																													
TIC	Caprolactam	105-60-2																													
TIC	Chlorodifluoromethane	75-45-6																													
TIC	Cyclohexanone	108-94-1																													
TIC	Diethyl ether	60-29-7																													
TIC	Dioxane, 1,4-	123-91-1																													
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																													
TIC	Hexane, n-	110-54-3		5.6E-12		5.6E-12			9.4E-11		9.4E-11	8.3E-09	5.0E-08			1.2E-11		1.2E-11					9.4E-13		9.4E-13		2.1E-12		2.1E-12	
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																													
TIC	Phthalic anhydride	85-44-9					2.5E-07																								

Table B-7b (cont.): Particulate Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use

Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

FUTURE

Current/Future Scenario: FUTURE

Location of Exposure: AREA 5A (all values C_{air} (mg/m³))

Analyte Group	Substance	CASRN	Routine Industrial From Area 1	Routine Industrial From Area 2	Routine Industrial From Area 3	Total At Area	Excavation From Area 1	Excavation From Area 2	Excavation From Area 3	Excavation From Area 4B	Max	Construction (0-10') From Area 2	Construction (0-10') From Area 3	Max	Construction (0-4') From Area 2	Construction (0-4') From Area 3	Max
	C/Q (kg/m³ per kg/m²/s)		3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02	
VOC	1,1,1-Trichloroethane	71-55-6		6.9E-10	3.4E-13	6.9E-10	2.4E-08	1.1E-09	9.8E-08		9.8E-08	4.5E-08	3.3E-06	3.3E-06	1.0E-10	5.2E-11	1.0E-10
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.8E-12		1.8E-12	6.3E-11	2.9E-12			6.3E-11	1.2E-10		1.2E-10			
VOC	1,1,2-Trichloroethane	79-00-5	2.2E-13			2.2E-13	1.3E-10				1.3E-10						
VOC	1,1-Dichloroethane	75-34-3		6.1E-10	3.2E-12	6.1E-10	3.5E-10	9.6E-10	2.3E-10		9.6E-10	3.9E-08	8.0E-09	3.9E-08		6.8E-10	6.8E-10
VOC	1,1-Dichloroethene	75-35-4													2.8E-11		2.8E-11
VOC	1,2,4-Trimethylbenzene	95-63-6															
VOC	1,2-Dichloroethane	107-06-2		3.3E-10		3.3E-10	6.4E-10	5.2E-10	1.2E-10		6.4E-10	2.2E-08	4.2E-09	2.2E-08			
VOC	1,2-Dichloroethene (total)	540-59-0	2.0E-13	8.5E-10	2.9E-10	1.1E-09	3.8E-09	1.3E-09	3.8E-09	1.2E-13	3.8E-09	5.5E-08	1.3E-07	1.3E-07		4.4E-08	4.4E-08
VOC	1,2-Dichloropropane	78-87-5		1.4E-10	7.1E-13	1.4E-10	3.5E-10	2.2E-10	7.5E-11		3.5E-10	8.9E-09	2.6E-09	8.9E-09		1.1E-10	1.1E-10
VOC	1,3,5-Trimethylbenzene	108-67-8															
VOC	2-Butanone	78-93-3		2.5E-08		2.5E-08	6.4E-09	4.0E-08	4.6E-06		4.6E-06	1.6E-06	1.6E-04	1.6E-04	1.7E-06	2.9E-04	2.9E-04
VOC	2-Hexanone	591-78-6		1.6E-09		1.6E-09		2.5E-09	6.6E-11		2.5E-09	1.0E-07	2.3E-09	1.0E-07	1.7E-07		1.7E-07
VOC	4-Methyl-2-pentanone	108-10-1		4.1E-09		4.1E-09	6.8E-09	6.6E-09	7.8E-07		7.8E-07	2.7E-07	2.7E-05	2.7E-05	5.0E-07	1.1E-06	1.1E-06
VOC	Acetone	67-64-1		8.1E-09	4.9E-12	8.1E-09	6.4E-09	1.3E-08	4.4E-07	2.4E-13	4.4E-07	5.3E-07	1.5E-05	1.5E-05	1.6E-06	3.2E-09	1.6E-06
VOC	Benzene	71-43-2		7.8E-10	1.2E-10	9.0E-10	5.2E-09	1.2E-09	2.1E-08		2.1E-08	5.1E-08	7.0E-07	7.0E-07	7.3E-08	1.9E-08	7.3E-08
VOC	Bromodichloromethane	75-27-4															
VOC	Carbon Disulfide	75-15-0	3.3E-14			3.3E-14	4.0E-14				4.0E-14						
VOC	Carbon Tetrachloride	56-23-5															
VOC	Chlorobenzene	108-90-7			2.3E-10	2.3E-10	1.6E-10		1.4E-08		1.4E-08		4.9E-07	4.9E-07		3.6E-08	3.6E-08
VOC	Chloroethane	75-00-3															
VOC	Chloroform	67-66-3	5.0E-14	9.6E-10	3.8E-13	9.6E-10	4.7E-09	1.5E-09	7.5E-13		4.7E-09	6.2E-08	2.6E-11	6.2E-08		5.8E-11	5.8E-11
VOC	Chloromethane	74-87-3															
VOC	Ethyl Benzene	100-41-4		7.8E-09	5.3E-09	1.3E-08	9.4E-09	1.2E-08	3.3E-07		3.3E-07	5.1E-07	1.1E-05	1.1E-05	9.9E-07	7.1E-06	7.1E-06
VOC	Methylene Chloride	75-09-2		7.6E-10	7.5E-12	7.6E-10	5.6E-09	1.2E-09	3.7E-10		5.6E-09	4.9E-08	1.3E-08	4.9E-08	6.6E-11	6.5E-10	6.5E-10
VOC	Styrene	100-42-5		5.0E-10	8.7E-10	1.4E-09	1.4E-09	7.9E-10	3.6E-08		3.6E-08	3.3E-08	1.2E-06	1.2E-06		1.3E-07	1.3E-07
VOC	Tetrachloroethene	127-18-4	5.9E-12	6.5E-09	9.4E-09	1.6E-08	1.2E-08	1.0E-08	6.0E-07		6.0E-07	4.2E-07	2.0E-05	2.0E-05	1.2E-06	2.1E-06	2.1E-06
VOC	Tetrahydrofuran	109-99-9															
VOC	Toluene	108-88-3	2.2E-12	3.4E-08	2.4E-08	5.8E-08	2.0E-07	5.4E-08	2.2E-06		2.2E-06	2.2E-06	7.4E-05	7.4E-05	2.5E-06	3.7E-05	3.7E-05
VOC	Trichloroethene	79-01-6	1.6E-12	2.8E-09	3.8E-09	6.6E-09	5.5E-09	4.4E-09	2.5E-07		2.5E-07	1.8E-07	8.4E-06	8.4E-06	5.0E-07	5.7E-07	5.7E-07
VOC	Vinyl Chloride	75-01-4		5.6E-12		5.6E-12		8.8E-12			8.8E-12	3.6E-10		3.6E-10			
VOC	Xylenes (total)	1330-20-7	7.7E-11	7.0E-08	2.1E-08	9.1E-08	4.5E-08	1.1E-07	1.8E-06		1.8E-06	4.5E-06	6.1E-05	6.1E-05	1.2E-05	4.8E-05	4.8E-05
VOC	cis-1,2-Dichloroethene	156-59-2		1.2E-11		1.2E-11	1.9E-08	1.8E-11	3.0E-12		1.9E-08	7.6E-10	1.0E-10	7.6E-10	4.6E-10		4.6E-10
VOC	m,p-xylene	6777-61-2		5.4E-11		5.4E-11	2.6E-08	8.6E-11	1.5E-08		2.6E-08	3.5E-09	5.1E-07	5.1E-07	1.1E-10		1.1E-10
VOC	ortho-xylene	95-47-6		2.8E-11		2.8E-11	5.2E-09	4.4E-11	5.7E-09		5.7E-09	1.8E-09	2.0E-07	2.0E-07	4.0E-11	6.7E-11	6.7E-11
VOC	p-Cymene	99-87-6															
VOC	trans-1,2-Dichloroethene	156-60-5															
SVOC	1,2,4-Trichlorobenzene	120-82-1		4.6E-10		4.6E-10	7.0E-11	7.2E-10			7.2E-10	3.0E-08		3.0E-08			
SVOC	1,2-Dichlorobenzene	95-50-1		2.7E-09	2.2E-11	2.8E-09	2.5E-10	4.3E-09	5.5E-11		4.3E-09	1.8E-07	1.9E-09	1.8E-07	6.9E-07	2.3E-09	6.9E-07
SVOC	1,3-Dichlorobenzene	541-73-1					1.5E-11				1.5E-11						
SVOC	1,4-Dichlorobenzene	106-46-7		4.6E-11		4.6E-11	8.5E-11	7.3E-11	1.6E-11		8.5E-11	3.0E-09	5.4E-10	3.0E-09			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1															
SVOC	2,4,5-Trichlorophenol	95-95-4			6.4E-12	6.4E-12			2.9E-11		2.9E-11		9.9E-10	9.9E-10		9.9E-10	9.9E-10
SVOC	2,4-Dichlorophenol	120-83-2					6.7E-11				6.7E-11						
SVOC	2,4-Dimethylphenol	105-67-9		1.7E-09	1.8E-10	1.8E-09	1.7E-10	2.6E-09	2.8E-09		2.8E-09	1.1E-07	9.5E-08	1.1E-07	2.9E-07	2.8E-08	2.9E-07
SVOC	2,4-Dinitrotoluene	121-14-2							1.4E-10		1.4E-10		4.9E-09	4.9E-09			
SVOC	2,6-Dinitrotoluene	606-20-2		1.8E-10		1.8E-10		2.8E-10			2.8E-10	1.2E-08		1.2E-08			
SVOC	2-Chloronaphthalene	91-58-7															
SVOC	2-Methylnaphthalene	91-57-6	5.7E-12	2.6E-08	6.4E-10	2.7E-08	1.2E-09	4.2E-08	8.7E-09	3.0E-13	4.2E-08	1.7E-06	3.0E-07	1.7E-06	1.1E-07	1.7E-07	1.7E-07
SVOC	2-Methylphenol	95-48-7		1.9E-09	1.8E-10	2.1E-09	1.8E-10	3.0E-09	1.6E-09		3.0E-09	1.3E-07	5.6E-08	1.3E-07	4.0E-07	2.7E-08	4.0E-07
SVOC	3,3'-Dichlorobenzidine	91-94-1	3.5E-12			3.5E-12	4.2E-12				4.2E-12						
SVOC	4-Bromophenyl-phenylether	101-55-3															
SVOC	4-Chloro-3-methylphenol	59-50-7															
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3															
SVOC	4-Methylphenol	106-44-5		2.7E-09	1.7E-10	2.9E-09	2.0E-10	4.2E-09	1.5E-09		4.2E-09	1.7E-07	5.2E-08	1.7E-07	5.9E-07	1.4E-08	5.9E-07
SVOC	4-Nitrophenol	100-02-7							1.1E-11		1.1E-11		3.8E-10	3.8E-10			
SVOC	Acenaphthene	83-32-9		7.6E-10	1.4E-11	7.7E-10	1.8E-10	1.2E-09	1.1E-10		1.2E-09	5.0E-08	3.7E-09	5.0E-08		2.1E-09	2.1E-09
SVOC	Acenaphthylene	208-96-8	6.2E-12			6.2E-12	8.9E-11			2.7E-12	8.9E-11						
SVOC	Anthracene	120-12-7	1.5E-12	6.6E-11	2.5E-11	9.2E-11	1.8E-11	1.0E-10	1.9E-10	2.4E-12	1.9E-10	4.3E-09	6.3E-09	6.3E-09		3.8E-09	3.8E-09
SVOC	Benzo(a)anthracene	56-55-3	9.9E-13	1.4E-10	9.0E-11	2.3E-10	2.4E-13	2.2E-10	3.7E-10	3.5E-12	3.7E-10	8.9E-09	1.3E-08	1.3E-08		9.4E-09	9.4E-09
SVOC	Benzo(a)pyrene	50-32-8	1.4E-12	7.6E-11		7.7E-11	3.3E-13	1.2E-10	2.4E-10	3.8E-12	2.4E-10	5.0E-09	8.1E-09	8.1E-09		8.1E-09	8.1E-09
SVOC	Benzo(b)fluoranthene	205-99-2	1.4E-12	2.7E-10	1.6E-11	2.9E-10	3.4E-13	4.2E-10	5.5E-10	4.2E-12	5.5E-10	1.7E-08	1.9E-08	1.9E-08		1.3E-08	1.3E-08
SVOC	Benzo(g,h,i)perylene	191-24-2		7.6E-11		7.6E-11		1.2E-10	1.9E-10	2.8E-12	1.9E-10	5.0E-09	6.4E-09	6.4E-09		6.4E-09	6.4E-09
SVOC	Benzo(k)fluoranthene	207-08-9	1.2E-12	2.7E-10	1.6E-11	2.9E-10	2.9E-13	4.2E-10	5.5E-10	3.9E-12	5.5E-10	1.7E-08	1.9E-08	1.9E-08		1.3E-08	1.3E-08
SVOC	Benzoic Acid	65-85-0		6.1E-09		6.1E-09	2.6E-10	9.6E-09	3.2E-08		3.2E-08	4.0E-07	1.1E-06	1.1E-06			
SVOC	Benzyl Alcohol	100-51-6		1.3E-09		1.3E-09		2.1E-09			2.1E-09	8.8E-08		8.8E-08			
SVOC	Butylbenzylphthalate	85-68-7		2.1E-08	6.4E-10	2.2E-08	2.0E-09	3.4E-08	5.1E-09		3.4E-08	1.4E-06	1.8E-07	1.4E-06		1.8E-07	1.8E-07
SVOC	Carbazole	86-74-8								3.5E-13	3.5E-13						
SVOC	Chrysene	218-01-9	1.2E-12	1.9E-10	4.9E-11	2.4E-10	3.0E-13	3.0E-10	2.6E-10	3.7E-12	3.0E-10	1.3E-08	8.9E-09	1.3E-08		7.5E-09	7.5E-09
SVOC	Di-n-butylphthalate	84-74-2	8.5E-13	3.8E-09	5.6E-10	4.4E-09	1.4E-09	6.0E-09	9.6E-09	8.1E-13	9.6E-09	2.5E-07	3.3E-07	3.3E-07	1.7E-07	2.5E-07	2.5E-07
SVOC	Di-n-octylphthalate	117-84-0	1.8E-12	6.6E-10	4.9E-11	7.1E-10	1.6E-10	1.0E-09	2.2E-09		2.2E-09	4.3E-08	7.5E-08	7.5E-08		8.5E-08	8.5E-08
SVOC	Dibenzo(a,h)anthracene	53-70-3							4.6E-11	2.8E-12	4.6E-11		1.6E-09	1.6E-09		1.6E-09	1.6E-09
SVOC	Dibenzofuran	132-64-9		1.3E-10	1.6E-11	1.4E-10	6.9E-11	2.0E-10	1.0E-10		2.0E-10	8.3E-09	3.5E-09	8.3E-09		2.3E-09	2.3E-09
SVOC	Diethylphthalate	84-66-2		1.3E-09	5.6E-12	1.3E-09	2.5E-10	2.0E-09	6.9E-10		2.0E-09	8.2E-08	2.3E-08	8.2E-08		1.5E-08	1.5E-08
SVOC	Dimethylphthalate	131-11-3		1.3E-08	5.3E-11	1.3E-08	8.7E-10	2.1E-08	1.5E-09		2.1E-08	8.6E-07	5.0E-08	8.6E-07	3.6E-07	8.1E-09	3.6E-07
SVOC	Fluoranthene	206-44-0	1.6E-12	2.1E-10	1.3E-10	3.4E-10	6.1E-11	3.3E-10	9.5E-10	3.8E-12	9.5E-10	1.4E-08	3.2E-08	3.2E-08		1.2E-08	1.2E-08
SVOC	Fluorene	86-73-7		9.0E-10	2.3E-11	9.2E-10	1.7E-10	1.4E-09	1.5E-10		1.4E-09	5.9E-08	5.3E-09	5.9E-08		3.6E-09	3.6E-09
SVOC	Hexachlorobenzene	118-74-1	4.8E-13			4.8E-13	1.2E-13				1.2E-13						
SVOC	Hexachlorobutadiene	87-68-3		6.9E-10		6.9E-10	9.8E-11	1.1E-09			1.1E-09	4.5E-08		4.5E-08			
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	7.4E-13	7.1E-11		7.2E-11	1.8E-13	1.1E-10	1.4E-10	3.3E-12	1.4E-10	4.6E-09	4.8E-09	4.8E-09		4.8E-09	4.8E-09
SVOC	Isophorone	78-59-1	2.3E-12	1.2E-08	1.5E-09	1.3E-08	3.4E-09	1.8E-08	8.4E-08	4.0E-13	8.4E-08	7.6E-07	2.9E-06	2.9E-06	6.9E-07	6.7E-07	6.9E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7															
SVOC	N-Nitrosodiphenylamine	86-30-6			1.6E-10	1.6E-10			4.0E-10		4.0E-10		1.4E-08	1.4E-08		1.8E-08	1.8E-08

Location of Exposure: AREA 6 (all values C_{air} (mg/m³))

Analyte Group	Substance	CASRN	Routine Industrial From Area 1	Routine Industrial From Area 2	Routine Industrial From Area 3	Total At Area	Excavation From Area 1	Excavation From Area 2	Excavation From Area 3	Excavation From Area 4B	Max	Construction (0-10') From Area 2	Construction (0-10') From Area 3	Max	Construction (0-4') From Area 2	Construction (0-4') From Area 3	Max
	C/Q (kg/m³ per kg/m²/s)		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
VOC	1,1,1-Trichloroethane	71-55-6		1.5E-10	4.7E-14	1.5E-10	1.4E-08	2.7E-10	2.2E-08		2.2E-08	1.2E-08	9.8E-07	9.8E-07	2.8E-11	1.5E-11	2.8E-11
VOC	1,1,2,2-Tetrachloroethane	79-34-5		3.9E-13		3.9E-13	3.8E-11	7.2E-13			3.8E-11	3.2E-11		3.2E-11			
VOC	1,1,2-Trichloroethane	79-00-5	1.2E-13			1.2E-13	7.8E-11				7.8E-11						
VOC	1,1-Dichloroethane	75-34-3		1.3E-10	4.5E-13	1.3E-10	2.1E-10	2.4E-10	5.4E-11		2.4E-10	1.1E-08	2.3E-09	1.1E-08		2.0E-10	2.0E-10
VOC	1,1-Dichloroethene	75-35-4													7.7E-12		7.7E-12
VOC	1,2,4-Trimethylbenzene	95-63-6															
VOC	1,2-Dichloroethane	107-06-2		7.2E-11		7.2E-11	3.8E-10	1.3E-10	2.8E-11		3.8E-10	5.8E-09	1.2E-09	5.8E-09			
VOC	1,2-Dichloroethene (total)	540-59-0	1.1E-13	1.8E-10	4.0E-11	2.2E-10	2.3E-09	3.4E-10	8.7E-10	9.2E-14	2.3E-09	1.5E-08	3.8E-08	3.8E-08		1.3E-08	1.3E-08
VOC	1,2-Dichloropropane	78-87-5		3.0E-11	9.9E-14	3.0E-11	2.1E-10	5.4E-11	1.7E-11		2.1E-10	2.4E-09	7.5E-10	2.4E-09		3.2E-11	3.2E-11
VOC	1,3,5-Trimethylbenzene	108-67-8															
VOC	2-Butanone	78-93-3		5.4E-09		5.4E-09	3.8E-09	9.9E-09	1.1E-06		1.1E-06	4.4E-07	4.6E-05	4.6E-05	4.6E-07	8.4E-05	8.4E-05
VOC	2-Hexanone	591-78-6		3.5E-10		3.5E-10		6.3E-10	1.5E-11		6.3E-10	2.8E-08	6.6E-10	2.8E-08	4.5E-08		4.5E-08
VOC	4-Methyl-2-pentanone	108-10-1		9.0E-10		9.0E-10	4.1E-09	1.6E-09	1.8E-07		1.8E-07	7.3E-08	7.8E-06	7.8E-06	1.3E-07	3.2E-07	3.2E-07
VOC	Acetone	67-64-1		1.7E-09	6.8E-13	1.7E-09	3.9E-09	3.2E-09	1.0E-07	1.9E-13	1.0E-07	1.4E-07	4.4E-06	4.4E-06	4.3E-07	9.4E-10	4.3E-07
VOC	Benzene	71-43-2		1.7E-10	1.7E-11	1.9E-10	3.1E-09	3.1E-10	4.7E-09		4.7E-09	1.4E-08	2.1E-07	2.1E-07	2.0E-08	5.4E-09	2.0E-08
VOC	Bromodichloromethane	75-27-4															
VOC	Carbon Disulfide	75-15-0	1.9E-14			1.9E-14	2.4E-14				2.4E-14						
VOC	Carbon Tetrachloride	56-23-5															
VOC	Chlorobenzene	108-90-7			3.2E-11	3.2E-11	9.6E-11		3.3E-09		3.3E-09		1.4E-07	1.4E-07		1.1E-08	1.1E-08
VOC	Chloroethane	75-00-3															
VOC	Chloroform	67-66-3	2.8E-14	2.1E-10	5.2E-14	2.1E-10	2.8E-09	3.8E-10	1.7E-13		2.8E-09	1.7E-08	7.5E-12	1.7E-08		1.7E-11	1.7E-11
VOC	Chloromethane	74-87-3															
VOC	Ethyl Benzene	100-41-4		1.7E-09	7.3E-10	2.4E-09	5.6E-09	3.1E-09	7.6E-08		7.6E-08	1.4E-07	3.3E-06	3.3E-06	2.7E-07	2.1E-06	2.1E-06
VOC	Methylene Chloride	75-09-2		1.6E-10	1.0E-12	1.6E-10	3.4E-09	3.0E-10	8.6E-11		3.4E-09	1.3E-08	3.7E-09	1.3E-08	1.8E-11	1.9E-10	1.9E-10
VOC	Styrene	100-42-5		1.1E-10	1.2E-10	2.3E-10	8.6E-10	2.0E-10	8.2E-09		8.2E-09	8.8E-09	3.6E-07	3.6E-07		3.9E-08	3.9E-08
VOC	Tetrachloroethene	127-18-4	3.3E-12	1.4E-09	1.3E-09	2.7E-09	7.1E-09	2.6E-09	1.4E-07		1.4E-07	1.1E-07	6.0E-06	6.0E-06	3.3E-07	6.1E-07	6.1E-07
VOC	Tetrahydrofuran	109-99-9															
VOC	Toluene	108-88-3	1.2E-12	7.4E-09	3.3E-09	1.1E-08	1.2E-07	1.3E-08	5.0E-07		5.0E-07	6.0E-07	2.2E-05	2.2E-05	6.7E-07	1.1E-05	1.1E-05
VOC	Trichloroethene	79-01-6	8.9E-13	6.0E-10	5.2E-10	1.1E-09	3.3E-09	1.1E-09	5.7E-08		5.7E-08	4.9E-08	2.5E-06	2.5E-06	1.3E-07	1.7E-07	1.7E-07
VOC	Vinyl Chloride	75-01-4		1.2E-12		1.2E-12		2.2E-12			2.2E-12	9.8E-11		9.8E-11			
VOC	Xylenes (total)	1330-20-7	4.3E-11	1.5E-08	3.0E-09	1.8E-08	2.7E-08	2.8E-08	4.1E-07		4.1E-07	1.2E-06	1.8E-05	1.8E-05	3.2E-06	1.4E-05	1.4E-05
VOC	cis-1,2-Dichloroethene	156-59-2		2.5E-12		2.5E-12	1.2E-08	4.6E-12	6.9E-13		1.2E-08	2.0E-10	3.0E-11	2.0E-10	1.2E-10		1.2E-10
VOC	m,p-xylene	6777-61-2		1.2E-11		1.2E-11	1.5E-08	2.1E-11	3.5E-09		1.5E-08	9.6E-10	1.5E-07	1.5E-07	2.8E-11		2.8E-11
VOC	ortho-xylene	95-47-6		6.0E-12		6.0E-12	3.1E-09	1.1E-11	1.3E-09		3.1E-09	4.8E-10	5.7E-08	5.7E-08	1.1E-11	2.0E-11	2.0E-11
VOC	p-Cymene	99-87-6															
VOC	trans-1,2-Dichloroethene	156-60-5															
SVOC	1,2,4-Trichlorobenzene	120-82-1		9.9E-11		9.9E-11	4.2E-11	1.8E-10			1.8E-10	8.1E-09		8.1E-09			
SVOC	1,2-Dichlorobenzene	95-50-1		5.9E-10	3.1E-12	5.9E-10	1.5E-10	1.1E-09	1.3E-11		1.1E-09	4.8E-08	5.5E-10	4.8E-08	1.9E-07	6.7E-10	1.9E-07
SVOC	1,3-Dichlorobenzene	541-73-1					9.2E-12				9.2E-12						
SVOC	1,4-Dichlorobenzene	106-46-7		1.0E-11		1.0E-11	5.1E-11	1.8E-11	3.6E-12		5.1E-11	8.1E-10	1.6E-10	8.1E-10			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1															
SVOC	2,4,5-Trichlorophenol	95-95-4			8.9E-13	8.9E-13			6.6E-12		6.6E-12		2.9E-10	2.9E-10		2.9E-10	2.9E-10
SVOC	2,4-Dichlorophenol	120-83-2					4.0E-11				4.0E-11						
SVOC	2,4-Dimethylphenol	105-67-9		3.6E-10	2.6E-11	3.8E-10	1.0E-10	6.5E-10	6.4E-10		6.5E-10	2.9E-08	2.8E-08	2.9E-08	7.8E-08	8.3E-09	7.8E-08
SVOC	2,4-Dinitrotoluene	121-14-2							3.3E-11		3.3E-11		1.4E-09	1.4E-09			
SVOC	2,6-Dinitrotoluene	606-20-2		3.8E-11		3.8E-11		7.0E-11			7.0E-11	3.1E-09		3.1E-09			
SVOC	2-Chloronaphthalene	91-58-7															
SVOC	2-Methylnaphthalene	91-57-6	3.2E-12	5.7E-09	8.9E-11	5.8E-09	6.9E-10	1.0E-08	2.0E-09	2.4E-13	1.0E-08	4.6E-07	8.7E-08	4.6E-07	2.8E-08	5.1E-08	5.1E-08
SVOC	2-Methylphenol	95-48-7		4.2E-10	2.5E-11	4.4E-10	1.1E-10	7.6E-10	3.8E-10		7.6E-10	3.4E-08	1.6E-08	3.4E-08	1.1E-07	8.0E-09	1.1E-07
SVOC	3,3'-Dichlorobenzidine	91-94-1	2.0E-12			2.0E-12	2.5E-12				2.5E-12						
SVOC	4-Bromophenyl-phenylether	101-55-3															
SVOC	4-Chloro-3-methylphenol	59-50-7															
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3															
SVOC	4-Methylphenol	106-44-5		5.8E-10	2.4E-11	6.0E-10	1.2E-10	1.1E-09	3.5E-10		1.1E-09	4.7E-08	1.5E-08	4.7E-08	1.6E-07	4.1E-09	1.6E-07
SVOC	4-Nitrophenol	100-02-7							2.6E-12		2.6E-12		1.1E-10	1.1E-10			
SVOC	Acenaphthene	83-32-9		1.6E-10	1.9E-12	1.7E-10	1.1E-10	3.0E-10	2.5E-11		3.0E-10	1.3E-08	1.1E-09	1.3E-08		6.1E-10	6.1E-10
SVOC	Acenaphthylene	208-96-8	3.5E-12			3.5E-12	5.4E-11			2.2E-12	5.4E-11						
SVOC	Anthracene	120-12-7	8.4E-13	1.4E-11	3.4E-12	1.9E-11	1.1E-11	2.6E-11	4.3E-11	2.0E-12	4.3E-11	1.2E-09	1.9E-09	1.9E-09		1.1E-09	1.1E-09
SVOC	Benzo(a)anthracene	56-55-3	5.5E-13	3.0E-11	1.3E-11	4.3E-11	1.4E-13	5.4E-11	8.4E-11	2.8E-12	8.4E-11	2.4E-09	3.7E-09	3.7E-09		2.8E-09	2.8E-09
SVOC	Benzo(a)pyrene	50-32-8	7.8E-13	1.6E-11		1.7E-11	2.0E-13	3.0E-11	5.5E-11	3.1E-12	5.5E-11	1.3E-09	2.4E-09	2.4E-09		2.4E-09	2.4E-09
SVOC	Benzo(b)fluoranthene	205-99-2	8.1E-13	5.8E-11	2.2E-12	6.1E-11	2.1E-13	1.1E-10	1.3E-10	3.4E-12	1.3E-10	4.7E-09	5.5E-09	5.5E-09		3.7E-09	3.7E-09
SVOC	Benzo(g,h,i)perylene	191-24-2		1.6E-11		1.6E-11		3.0E-11	4.3E-11	2.3E-12	4.3E-11	1.3E-09	1.9E-09	1.9E-09		1.9E-09	1.9E-09
SVOC	Benzo(k)fluoranthene	207-08-9	6.8E-13	5.8E-11	2.2E-12	6.1E-11	1.7E-13	1.1E-10	1.3E-10	3.2E-12	1.3E-10	4.7E-09	5.5E-09	5.5E-09		3.7E-09	3.7E-09
SVOC	Benzoic Acid	65-85-0		1.3E-09		1.3E-09	1.6E-10	2.4E-09	7.4E-09		7.4E-09	1.1E-07	3.2E-07	3.2E-07			
SVOC	Benzyl Alcohol	100-51-6		2.9E-10		2.9E-10		5.3E-10			5.3E-10	2.4E-08		2.4E-08			
SVOC	Butylbenzylphthalate	85-68-7		4.6E-09	8.9E-11	4.7E-09	1.2E-09	8.4E-09	1.2E-09		8.4E-09	3.7E-07	5.1E-08	3.7E-07		5.4E-08	5.4E-08
SVOC	Carbazole	86-74-8								2.8E-13	2.8E-13						
SVOC	Chrysene	218-01-9	7.0E-13	4.2E-11	6.8E-12	4.9E-11	1.8E-13	7.6E-11	6.0E-11	3.0E-12	7.6E-11	3.4E-09	2.6E-09	3.4E-09		2.2E-09	2.2E-09
SVOC	Di-n-butylphthalate	84-74-2	4.8E-13	8.3E-10	7.8E-11	9.1E-10	8.2E-10	1.5E-09	2.2E-09	6.5E-13	2.2E-09	6.7E-08	9.6E-08	9.6E-08	4.5E-08	7.2E-08	7.2E-08
SVOC	Di-n-octylphthalate	117-84-0	1.0E-12	1.4E-10	6.8E-12	1.5E-10	9.7E-11	2.6E-10	5.0E-10		5.0E-10	1.2E-08	2.2E-08	2.2E-08		2.5E-08	2.5E-08
SVOC	Dibenzo(a,h)anthracene	53-70-3							1.1E-11	2.2E-12	1.1E-11		4.6E-10	4.6E-10		4.6E-10	4.6E-10
SVOC	Dibenzofuran	132-64-9		2.7E-11	2.2E-12	3.0E-11	4.1E-11	5.0E-11	2.3E-11		5.0E-11	2.2E-09	1.0E-09	2.2E-09		6.7E-10	6.7E-10
SVOC	Diethylphthalate	84-66-2		2.7E-10	7.8E-13	2.7E-10	1.5E-10	4.9E-10	1.6E-10		4.9E-10	2.2E-08	6.9E-09	2.2E-08		4.4E-09	4.4E-09
SVOC	Dimethylphthalate	131-11-3		2.9E-09	7.3E-12	2.9E-09	5.2E-10	5.2E-09	3.3E-10		5.2E-09	2.3E-07	1.5E-08	2.3E-07	9.8E-08	2.4E-09	9.8E-08
SVOC	Fluoranthene	206-44-0	9.2E-13	4.5E-11	1.8E-11	6.4E-11	3.7E-11	8.2E-11	2.2E-10	3.0E-12	2.2E-10	3.6E-09	9.5E-09	9.5E-09		3.5E-09	3.5E-09
SVOC	Fluorene	86-73-7		1.9E-10	3.2E-12	2.0E-10	1.0E-10	3.6E-10	3.5E-11		3.6E-10	1.6E-08	1.5E-09	1.6E-08		1.0E-09	1.0E-09
SVOC	Hexachlorobenzene	118-74-1	2.7E-13			2.7E-13	7.0E-14				7.0E-14						
SVOC	Hexachlorobutadiene	87-68-3		1.5E-10		1.5E-10	5.9E-11	2.7E-10			2.7E-10	1.2E-08		1.2E-08			
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	4.1E-13	1.5E-11		1.6E-11	1.1E-13	2.8E-11	3.2E-11	2.6E-12	3.2E-11	1.2E-09	1.4E-09	1.4E-09		1.4E-09	1.4E-09
SVOC	Isophorone	78-59-1	1.3E-12	2.5E-09	2.1E-10	2.7E-09	2.1E-09	4.6E-09	1.9E-08	3.2E-13	1.9E-08	2.1E-07	8.4E-07	8.4E-07	1.9E-07	2.0E-07	2.0E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7															
SVOC	N-Nitrosodiphenylamine	86-30-6			2.2E-11	2.2E-11			9.3E-11		9.3E-11		4.0E-09	4.0E-09		5.3E-09	5.3E-09

Table B-7b (cont.): Particulate Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			FUTURE																FUTURE													
Location of Exposure:			AREA 5A									Area 5A						AREA 6										Area 6					
Type of Activity at Emission Location:			Routine Industrial				Excavation					Construction (0-10')			Construction (0-4')			Routine Industrial				Excavation					Construction (0-10')			Construction (0-4')		
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max
C/Q (kg/m³ per kg/m²/s)			3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
Analyte Group	Substance	CASRN	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
SVOC	Naphthalene	91-20-3		5.1E-09	1.1E-09	6.2E-09	1.9E-09	8.1E-09	1.8E-08	2.4E-13	1.8E-08	3.3E-07	6.2E-07	6.2E-07	4.6E-07	2.7E-07	4.6E-07		1.1E-09	1.5E-10	1.3E-09	1.1E-09	2.0E-09	4.2E-09	1.9E-13	4.2E-09	9.0E-08	1.8E-07	1.8E-07	1.2E-07	8.0E-08	1.2E-07
SVOC	Pentachlorophenol	87-86-5		2.3E-09	5.6E-11	2.4E-09	3.2E-10	3.7E-09	2.2E-09		3.7E-09	1.5E-07	7.6E-08	1.5E-07		8.7E-09	8.7E-09		5.1E-10	7.8E-12	5.1E-10	1.9E-10	9.2E-10	5.1E-10		9.2E-10	4.1E-08	2.2E-08	4.1E-08		2.6E-09	2.6E-09
SVOC	Phenanthrene	85-01-8	1.0E-12	9.0E-10	1.2E-10	1.0E-09	1.5E-10	1.4E-09	9.8E-10	1.4E-12	1.4E-09	5.8E-08	3.3E-08	5.8E-08		2.1E-08	2.1E-08	5.7E-13	1.9E-10	1.6E-11	2.1E-10	8.7E-11	3.5E-10	2.2E-10	1.2E-12	3.5E-10	1.6E-08	9.8E-09	1.6E-08		6.3E-09	6.3E-09
SVOC	Phenol	108-95-2		2.8E-09	2.4E-10	3.0E-09	3.4E-10	4.4E-09	2.8E-08		2.8E-08	1.8E-07	9.6E-07	9.6E-07	5.6E-07	8.2E-08	5.6E-07		6.0E-10	3.3E-11	6.4E-10	2.0E-10	1.1E-09	6.5E-09		6.5E-09	4.9E-08	2.8E-07	2.8E-07	1.5E-07	2.4E-08	1.5E-07
SVOC	Pyrene	129-00-0	2.0E-12	4.1E-10	8.7E-11	4.9E-10	9.5E-11	6.4E-10	6.5E-10	3.7E-12	6.5E-10	2.6E-08	2.2E-08	2.6E-08		1.0E-08	1.0E-08	1.1E-12	8.8E-11	1.2E-11	1.0E-10	5.7E-11	1.6E-10	1.5E-10	3.0E-12	1.6E-10	7.1E-09	6.5E-09	7.1E-09		3.1E-09	3.1E-09
SVOC	bis(2-Chloroethyl) ether	111-44-4		9.6E-10		9.6E-10	1.6E-10	1.5E-09			1.5E-09	6.2E-08		6.2E-08					2.1E-10		2.1E-10	9.8E-11	3.8E-10			3.8E-10	1.7E-08		1.7E-08			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	1.6E-10	1.7E-08	1.6E-08	3.4E-08	5.3E-09	2.7E-08	2.2E-07	3.8E-11	2.2E-07	1.1E-06	7.6E-06	7.6E-06	3.6E-07	2.2E-06	2.2E-06	9.2E-11	3.8E-09	2.2E-09	6.1E-09	3.2E-09	6.9E-09	5.1E-08	3.1E-11	5.1E-08	3.1E-07	2.2E-06	2.2E-06	9.8E-08	6.5E-07	6.5E-07
P/PCB	4,4'-DDD	72-54-8		7.4E-11	5.6E-12	7.9E-11	5.8E-11	1.2E-10	2.6E-11	7.5E-13	1.2E-10	4.8E-09	8.7E-10	4.8E-09		8.7E-10	8.7E-10		1.6E-11	7.8E-13	1.7E-11	3.5E-11	2.9E-11	5.9E-12	6.0E-13	3.5E-11	1.3E-09	2.6E-10	1.3E-09		2.6E-10	2.6E-10
P/PCB	4,4'-DDE	72-55-9		4.5E-11		4.5E-11		7.0E-11		2.8E-12	7.0E-11	2.9E-09		2.9E-09					9.7E-12		9.7E-12		1.8E-11		2.2E-12	1.8E-11	7.8E-10		7.8E-10			
P/PCB	4,4'-DDT	50-29-3		6.3E-11		6.3E-11	7.7E-11	1.0E-10		2.3E-12	1.0E-10	4.1E-09		4.1E-09					1.4E-11		1.4E-11	4.6E-11	2.5E-11		1.8E-12	4.6E-11	1.1E-09		1.1E-09			
P/PCB	Aldrin	309-00-2		3.1E-10		3.1E-10		4.8E-10			4.8E-10	2.0E-08		2.0E-08					6.6E-11		6.6E-11		1.2E-10			1.2E-10	5.4E-09		5.4E-09			
P/PCB	Aroclor-1242	3469-21-9	6.8E-12		4.6E-10	4.6E-10	4.9E-10		4.4E-09		4.4E-09		1.5E-07	1.5E-07		8.5E-07	8.5E-07	3.8E-12		6.3E-11	6.7E-11	3.0E-10		1.0E-09		1.0E-09		4.4E-08	4.4E-08		2.5E-07	2.5E-07
P/PCB	Aroclor-1248	2672-29-6	8.9E-12	2.5E-09	2.6E-10	2.8E-09	3.4E-10	4.0E-09	2.4E-09	2.1E-12	4.0E-09	1.6E-07	8.2E-08	1.6E-07	4.3E-07	2.4E-07	4.3E-07	5.0E-12	5.4E-10	3.6E-11	5.9E-10	2.0E-10	9.9E-10	5.5E-10	1.7E-12	9.9E-10	4.4E-08	2.4E-08	4.4E-08	1.2E-07	7.0E-08	1.2E-07
P/PCB	Aroclor-1254	1097-69-1	4.0E-11	1.8E-09	3.5E-10	2.2E-09	5.7E-10	2.9E-09	1.6E-09	8.4E-11	2.9E-09	1.2E-07	5.5E-08	1.2E-07	1.6E-08	6.7E-08	6.7E-08	2.3E-11	3.9E-10	4.8E-11	4.7E-10	3.4E-10	7.2E-10	3.7E-10	6.8E-11	7.2E-10	3.2E-08	1.6E-08	3.2E-08	4.2E-09	2.0E-08	2.0E-08
P/PCB	Aroclor-1260	1096-82-5	8.3E-12	1.7E-08		1.8E-08	3.5E-10	2.8E-08	9.9E-10	9.3E-12	2.8E-08	1.1E-06	3.4E-08	1.1E-06	1.1E-07	8.5E-08	1.1E-07	4.7E-12	3.8E-09		3.8E-09	2.1E-10	6.9E-09	2.3E-10	7.5E-12	6.9E-09	3.1E-07	9.9E-09	3.1E-07	2.8E-08	2.5E-08	2.8E-08
P/PCB	Dieldrin	60-57-1					3.9E-12				3.9E-12											2.4E-12				2.4E-12						
P/PCB	Endosulfan I	959-98-8					1.9E-11			3.7E-12	1.9E-11											1.2E-11			3.0E-12	1.2E-11						
P/PCB	Endosulfan sulfate	1031-07-8								5.8E-13	5.8E-13														4.6E-13	4.6E-13						
P/PCB	Endrin	72-20-8					2.6E-11			1.4E-12	2.6E-11											1.5E-11			1.2E-12	1.5E-11						
P/PCB	Endrin aldehyde	7421-93-4																														
P/PCB	Endrin ketone	3494-70-5	1.8E-13			1.8E-13	2.2E-13				2.2E-13							1.0E-13			1.0E-13	1.3E-13				1.3E-13						
P/PCB	Heptachlor	76-44-8			3.3E-12	3.3E-12			1.5E-11	6.0E-13	1.5E-11		5.1E-10	5.1E-10		5.1E-10	5.1E-10			4.6E-13	4.6E-13			3.4E-12	4.8E-13	3.4E-12		1.5E-10	1.5E-10		1.5E-10	1.5E-10
P/PCB	Heptachlor epoxide	1024-57-3			1.6E-12	1.6E-12			7.1E-12		7.1E-12		2.4E-10	2.4E-10		2.4E-10	2.4E-10			2.2E-13	2.2E-13			1.6E-12		1.6E-12		7.1E-11	7.1E-11		7.1E-11	7.1E-11
P/PCB	Methoxychlor	72-43-5								2.8E-12	2.8E-12														2.2E-12	2.2E-12						
P/PCB	alpha-BHC	319-84-6		1.7E-11		1.7E-11		2.6E-11			2.6E-11	1.1E-09		1.1E-09					3.6E-12		3.6E-12		6.6E-12			6.6E-12	2.9E-10		2.9E-10			
P/PCB	alpha-Chlordane	5103-71-9								2.1E-12	2.1E-12														1.7E-12	1.7E-12						
P/PCB	beta-BHC	319-85-7		3.2E-11		3.2E-11		5.0E-11		2.5E-13	5.0E-11	2.1E-09		2.1E-09					6.9E-12		6.9E-12		1.3E-11		2.0E-13	1.3E-11	5.6E-10		5.6E-10			
P/PCB	gamma-BHC	58-89-9								2.8E-13	2.8E-13														2.2E-13	2.2E-13						
P/PCB	gamma-Chlordane	5103-74-2					2.0E-11			4.6E-13	2.0E-11											1.2E-11			3.7E-13	1.2E-11						
INORG	Antimony	7440-36-0	1.2E-11	3.3E-09	2.5E-09	5.9E-09	2.6E-10	5.2E-09	2.3E-08		2.3E-08	2.2E-07	7.8E-07	7.8E-07	2.5E-07	4.4E-07	4.4E-07	6.7E-12	7.2E-10	3.5E-10	1.1E-09	1.6E-10	1.3E-09	5.3E-09		5.3E-09	5.8E-08	2.3E-07	2.3E-07	6.7E-08	1.3E-07	1.3E-07
INORG	Arsenic	7440-38-2	4.6E-11	2.5E-10	1.2E-09	1.4E-09	8.0E-11	3.9E-10	1.5E-09	7.3E-11	1.5E-09	1.6E-08	5.3E-08	5.3E-08	2.1E-08	1.0E-07	1.0E-07	2.6E-11	5.3E-11	1.6E-10	2.4E-10	4.8E-11	9.7E-11	3.5E-10	5.9E-11	3.5E-10	4.3E-09	1.5E-08	1.5E-08	5.8E-09	3.0E-08	3.0E-08
INORG	Barium	7440-39-3	2.5E-09	4.9E-08	9.3E-08	1.4E-07	4.3E-09	7.8E-08	4.1E-07		4.1E-07	3.2E-06	1.4E-05	1.4E-05	8.9E-06	1.8E-05	1.8E-05	1.4E-09	1.1E-08	1.3E-08	2.5E-08	2.6E-09	1.9E-08	9.5E-08		9.5E-08	8.7E-07	4.1E-06	4.1E-06	2.4E-06	5.2E-06	5.2E-06
INORG	Beryllium	7440-41-7	5.2E-11	1.6E-11	5.6E-11	1.2E-10	1.6E-11	2.5E-11	1.0E-10		1.0E-10	1.0E-09	3.6E-09	3.6E-09		5.1E-09	5.1E-09	2.9E-11	3.4E-12	7.8E-12	4.1E-11	9.5E-12	6.3E-12	2.4E-11		2.4E-11	2.8E-10	1.0E-09	1.0E-09		1.5E-09	1.5E-09
INORG	Cadmium	7440-43-9	2.8E-11	5.4E-09	6.0E-09	1.1E-08	2.4E-10	8.5E-09	6.2E-08	5.7E-11	6.2E-08	3.5E-07	2.1E-06	2.1E-06	1.7E-07	9.5E-07	9.5E-07	1.6E-11	1.2E-09	8.3E-10	2.0E-09	1.4E-10	2.1E-09	1.4E-08	4.5E-11	1.4E-08	9.4E-08	6.2E-07	6.2E-07	4.6E-08	2.8E-07	2.8E-07
INORG	Chromium 3+	6065-83-1	4.6E-10	6.4E-08	4.2E-08	1.1E-07	2.7E-09	1.0E-07	2.0E-07	2.7E-10	2.0E-07	4.2E-06	6.9E-06	6.9E-06	2.3E-06	8.2E-06	8.2E-06	2.6E-10	1.4E-08	5.8E-09	2.0E-08	1.6E-09	2.5E-08	4.6E-08	2.2E-10	4.6E-08	1.1E-06	2.0E-06	2.0E-06	6.3E-07	2.4E-06	2.4E-06
INORG	Chromium 6+	8540-29-9	7.6E-11	1.1E-08	7.0E-09	1.8E-08	4.5E-10	1.7E-08	3.3E-08	4.5E-11	3.3E-08	7.0E-07	1.1E-06	1.1E-06	3.9E-07	1.4E-06	1.4E-06	4.3E-11	2.3E-09	9.7E-10	3.3E-09	2.7E-10	4.2E-09	7.7E-09	3.6E-11	7.7E-09	1.9E-07	3.3E-07	3.3E-07	1.1E-07	4.0E-07	4.0E-07
INORG	Cobalt	7440-48-4	6.0E-11	7.2E-10	2.1E-09	2.9E-09	1.8E-10	1.1E-09	8.4E-09		8.4E-09	4.7E-08	2.9E-07	2.9E-07	6.3E-08	4.4E-07	4.4E-07	3.4E-11	1.6E-10	3.0E-10	4.9E-10	1.1E-10	2.8E-10	1.9E-09		1.9E-09	1.3E-08	8.4E-08	8.4E-08	1.7E-08	1.3E-07	1.3E-07
INORG	Copper	7440-50-8	4.6E-10	6.7E-08	4.5E-08	1.1E-07	1.1E-09	1.1E-07	3.1E-07	3.6E-10	3.1E-07	4.4E-06	1.1E-05	1.1E-05	3.1E-06	1.2E-05	1.2E-05	2.6E-10	1.4E-08	6.2E-09	2.1E-08	6.9E-10	2.6E-08	7.1E-08	2.8E-10	7.1E-08	1.2E-06	3.1E-06	3.1E-06	8.3E-07	3.5E-06	3.5E-06
INORG	Cyanide (total)	57-12-5	1.3E-11		1.8E-09	1.8E-09	1.6E-10		5.5E-09		5.5E-09		1.9E-07	1.9E-07		3.3E-07	3.3E-07	7.3E-12		2.5E-10	2.6E-10	9.3E-11		1.3E-09		1.3E-09		5.5E-08	5.5E-08		9.7E-08	9.7E-08
INORG	Lead	7439-92-1	2.1E-09	5.2E-07	4.0E-07	9.2E-07	1.4E-08	8.2E-07	1.3E-06	1.4E-09	1.3E-06	3.4E-05	4.4E-05	4.4E-05	3.4E-05	6.3E-05	6.3E-05	1.2E-09	1.1E-07	5.6E-08	1.7E-07	8.4E-09	2.0E-07	2.9E-07	1.1E-09	2.9E-07	9.1E-06	1.3E-05	1.3E-05	9.1E-06	1.8E-05	1.8E-05
INORG	Manganese	7439-96-5	2.1E-08	1.2E-08	5.8E-08	9.1E-08	1.1E-08	1.9E-08	1.4E-07		1.4E-07	7.8E-07	4.8E-06	4.8E-06	1.1E-06	6.2E-06	6.2E-06	1.2E-08	2.6E-09	8.0E-09	2.2E-08	6.5E-09	4.7E-09	3.3E-08		3.3E-08	2.1E-07	1.4E-06	1.4E-06	2.9E-07	1.8E-06	1.8E-06
INORG	Mercury	7439-97-6	6.4E-11	4.0E-10	3.6E-10	8.2E-10	5.2E-11	6.3E-10	1.7E-09	4.3E-12	1.7E-09	2.6E-08	5.9E-08	5.9E-08	2.6E-08	5.0E-08	5.0E-08	3.6E-11	8.6E-11	5.0E-11	1.7E-10	3.1E-11	1.6E-10	4.0E-10	3.5E-12	4.0E-10	7.0E-09	1.7E-08	1.7E-08	7.0E-09	1.5E-08	1.5E-08
INORG	Nickel	7440-02-0	1.3E-10	1.2E-09	2.0E-09	3.4E-09	1.7E-10	2.0E-09	9.3E-09		9.3E-09	8.1E-08	3.2E-07	3.2E-07	1.7E-07	5.3E-07	5.3E-07	7.2E-11	2.7E-10	2.8E-10	6.2E-10	1.0E-10	4.9E-10	2.1E-09		2.1E-09	2.2E-08	9.3E-08	9.3E-08	4.7E-08	1.6E-07	1.6E-07
INORG	Selenium	7782-49-2	7.2E-12	1.4E-10	6.5E-10	7.9E-10	1.1E-11	2.2E-10	5.7E-09		5.7E-09	9.1E-09	2.0E-07	2.0E-07	1.4E-08	6.4E-08	6.4E-08	4.1E-12	3.0E-11	9.0E-11	1.2E-10	6.8E-12	5.5E-11	1.3E-09		1.3E-09	2.5E-09	5.7E-08	5.7E-08	3.8E-09	1.9E-08	1.9E-08
INORG	Silver	7440-22-4	4.8E-12	5.0E-10		5.0E-10	5.8E-12	7.9E-10	1.1E-08		1.1E-08	3.2E-08	3.8E-07	3.8E-07	5.0E-08	7.0E-08	7.0E-08	2.7E-12	1.1E-10		1.1E-10	3.5E-12	2.0E-10	2.6E-09		2.6E-09	8.7E-09	1.1E-07	1.1E-07	1.3E-08	2.0E-08	2.0E-08
INORG	Thallium	7440-28-0		3.7E-11		3.7E-11		5.8E-11	1.3E-10		1.3E-10	2.4E-09	4.4E-09	4.4E-09					7.9E-12		7.9E-12		1.4E-11	3.0E-11		3.0E-11	6.4E-10	1.3E-09	1.3E-09			
INORG	Vanadium	7440-62-2	1.9E-10	4.9E-10	9.9E-10	1.7E-09	2.2E-10	7.7E-10	3.5E-09		3.5E-09	3.2E-08	1.2E-07	1.2E-07	3.3E-08	2.1E-07	2.1E-07	1.1E-10	1.1E-10	1.4E-10	3.5E-10	1.3E-10	1.9E-10	7.9E-10		7.9E-10	8.5E-09	3.5E-08	3.5E-08	8.9E-09	6.3E-08	6.3E-08
INORG	Zinc	7440-66-6	1.6E-09	1.7E-07	5.7E-07	7.4E-07	6.1E-09	2.7E-07	2.7E-06	2.9E-09	2.7E-06	1.1E-05	9.1E-05	9.1E-05	1.7E-05	7.3E-05	7.3E-05	9.1E-10	3.6E-08	7.9E-08	1.2E-07	3.7E-09	6.6E-08	6.1E-07	2.3E-09	6.1E-07	2.9E-06	2.7E-05	2.7E-05	4.6E-06	2.1E-05	2.1E-05
TIC	Acetaldehyde	75-07-0																														
TIC	Acetophenone	98-86-2																														
TIC	Butanol, 1-	71-36-3																														
TIC	Caprolactam	105-60-2																														
TIC	Chlorodifluoromethane	75-45-6																														
TIC	Cyclohexanone	108-94-1																														
TIC	Diethyl ether	60-29-7																														
TIC	Dioxane, 1,4-	123-91-1																														
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																														
TIC	Hexane, n-	110-54-3		7.60E-12		7.60E-12		1.20E-11			1.20E-11	4.95E-10		5.0E-10					1.65E-12		1.65E-12		3.00E-12			3.00E-12	1.34E-10		1.3E-10			
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																														
TIC	Phthalic anhydride	85-44-9					9.28E-11				9.28E-11											5.57E-11				5.57E-11						

Table B-7c: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE					FUTURE						FUTURE							FUTURE				FUTURE					
	Location of Exposure:		AREA 1					AREA 2						AREA 3							AREA 4A				AREA 4B					
	Type of Activity at Emission Location:			Routine Industrial			Excavatio			Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavation	Const (0-10')	Const (0-4')	Routine Industrial				Routine Industrial			Excavation
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area
	C/Q (kg/m^3 per $kg/m^2/s$)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	9.3E-07	5.1E-10	3.1E-09	9.4E-07	6.6E-05	6.4E-08	8.5E-09	2.1E-08	9.3E-08	7.6E-07	2.2E-05	1.0E-08	2.2E-08	1.1E-09	4.5E-07	4.7E-07	3.2E-05	2.5E-03	3.0E-09	3.7E-08	8.5E-11	7.9E-10	3.7E-08	1.8E-07	1.9E-10	1.7E-09	1.8E-07	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	2.4E-09	1.4E-12		2.4E-09	1.8E-07	1.7E-10	2.3E-11		1.9E-10	2.0E-09	1.2E-08		5.7E-11	3.0E-12		6.0E-11				9.6E-11	2.3E-13		9.6E-11	4.7E-10	5.1E-13		4.7E-10	
VOC	1,1,2-Trichloroethane	79-00-5	5.1E-09			5.1E-09	3.6E-07	3.5E-10			3.5E-10		2.2E-05		1.2E-10			1.2E-10		2.1E-07		2.0E-10			2.0E-10	9.7E-10			9.7E-10	
VOC	1,1-Dichloroethane	75-34-3	1.4E-08	4.5E-10	7.4E-12	1.4E-08	9.8E-07	9.4E-10	7.5E-09	4.9E-11	8.5E-09	6.6E-07	4.3E-06		3.2E-10	1.0E-09	1.1E-09	2.4E-09	7.7E-08	5.7E-07	5.0E-08	5.4E-10	7.5E-11	1.9E-12	6.2E-10	2.6E-09	1.7E-10	4.1E-12	2.8E-09	
VOC	1,1-Dichloroethene	75-35-4											2.9E-09	2.9E-09																
VOC	1,2,4-Trimethylbenzene	95-63-6																												
VOC	1,2-Dichloroethane	107-06-2	2.5E-08	2.5E-10	3.5E-12	2.5E-08	1.8E-06	1.7E-09	4.1E-09	2.3E-11	5.8E-09	3.6E-07	6.0E-06		5.9E-10	5.5E-10	5.1E-10	1.6E-09	4.0E-08	2.7E-07		9.8E-10	4.1E-11	8.9E-13	1.0E-09	4.8E-09	9.2E-11	1.9E-12	4.9E-09	
VOC	1,2-Dichloroethene (total)	540-59-0	1.5E-07	6.3E-10	1.1E-10	1.5E-07	1.1E-05	1.0E-08	1.1E-08	7.5E-10	2.2E-08	9.3E-07	1.1E-05		3.5E-09	1.4E-09	1.6E-08	2.1E-08	1.2E-06	8.7E-06	2.5E-06	5.9E-09	1.1E-10	2.9E-11	6.0E-09	2.9E-08	2.4E-10	6.2E-11	2.9E-08	6.7E-10
VOC	1,2-Dichloropropane	78-87-5	1.4E-08	1.0E-10	2.4E-12	1.4E-08	9.8E-07	9.4E-10	1.7E-09	1.6E-11	2.7E-09	1.5E-07	9.0E-07		3.2E-10	2.3E-10	3.4E-10	8.9E-10	2.5E-08	1.8E-07	6.3E-09	5.4E-10	1.7E-11	6.0E-13	5.6E-10	2.6E-09	3.8E-11	1.3E-12	2.7E-09	
VOC	1,3,5-Trimethylbenzene	108-67-8																												
VOC	2-Butanone	78-93-3	2.5E-07	1.9E-08	4.0E-08	3.1E-07	1.8E-05	1.7E-08	3.1E-07	2.7E-07	5.9E-07	2.8E-05	1.5E-03	1.7E-04	5.8E-09	4.1E-08	5.8E-06	5.8E-06	1.5E-03	3.3E-02	8.0E-05	9.8E-09	3.1E-09	1.0E-08	2.3E-08	4.8E-08	7.0E-09	2.2E-08	7.7E-08	
VOC	2-Hexanone	591-78-6		1.2E-09	1.7E-12	1.2E-09			2.0E-08	1.1E-11	2.0E-08	1.8E-06	3.0E-05	3.0E-05		2.6E-09	2.4E-10	2.9E-09	2.2E-08	1.3E-07			2.0E-10	4.3E-13	2.0E-10		4.5E-10	9.4E-13	4.5E-10	
VOC	4-Methyl-2-pentanone	108-10-1	2.7E-07	3.1E-09	2.5E-08	2.9E-07	1.9E-05	1.8E-08	5.1E-08	1.6E-07	2.3E-07	4.5E-06	1.2E-04	1.2E-04	6.2E-09	6.8E-09	3.6E-06	3.6E-06	2.5E-04	2.0E-02	1.7E-04	1.0E-08	5.1E-10	6.3E-09	1.7E-08	5.1E-08	1.2E-09	1.4E-08	6.6E-08	
VOC	Acetone	67-64-1	2.5E-07	6.0E-09	1.4E-08	2.7E-07	1.8E-05	1.7E-08	1.0E-07	9.2E-08	2.1E-07	8.8E-06	4.0E-04	4.0E-04	5.9E-09	1.3E-08	2.0E-06	2.0E-06	1.4E-04	1.1E-02	3.2E-07	9.9E-09	1.0E-09	3.5E-09	1.4E-08	4.8E-08	2.2E-09	7.7E-09	5.8E-08	1.4E-09
VOC	Benzene	71-43-2	2.0E-07	5.8E-10	6.5E-10	2.0E-07	1.4E-05	1.4E-08	9.6E-09	4.3E-09	2.8E-08	8.5E-07	3.2E-05	1.5E-05	4.8E-09	1.3E-09	9.4E-08	1.0E-07	6.7E-06	5.0E-04	1.1E-06	8.0E-09	9.6E-11	1.7E-10	8.2E-09	3.9E-08	2.2E-10	3.6E-10	4.0E-08	
VOC	Bromodichloromethane	75-27-4																												
VOC	Carbon Disulfide	75-15-0					1.1E-10													1.0E-09										
VOC	Carbon Tetrachloride	56-23-5																												
VOC	Chlorobenzene	108-90-7	6.3E-09		4.5E-10	6.7E-09	4.5E-07	4.3E-10		3.0E-09	3.4E-09		8.3E-06		1.5E-10		6.5E-08	6.5E-08	4.7E-06	3.3E-04	2.1E-06	2.5E-10		1.1E-10	3.6E-10	1.2E-09		2.5E-10	1.5E-09	
VOC	Chloroethane	75-00-3																		4.0E-09										
VOC	Chloroform	67-66-3	1.8E-07	7.1E-10	1.3E-14	1.8E-07	1.3E-05	1.2E-08	1.2E-08	8.6E-14	2.4E-08	1.0E-06	4.7E-05		4.3E-09	1.6E-09	1.9E-12	5.8E-09	2.4E-10	1.0E-09	3.3E-09	7.2E-09	1.2E-10	3.3E-15	7.3E-09	3.5E-08	2.7E-10	7.2E-15	3.5E-08	
VOC	Chloromethane	74-87-3																												
VOC	Ethyl Benzene	100-41-4	3.7E-07	5.8E-09	1.0E-08	3.8E-07	2.6E-05	2.5E-08	9.6E-08	6.9E-08	1.9E-07	8.5E-06	2.3E-04	2.3E-04	8.6E-09	1.3E-08	1.5E-06	1.5E-06	1.1E-04	7.7E-03	1.4E-03	1.4E-08	9.6E-10	2.6E-09	1.8E-08	7.0E-08	2.2E-09	5.7E-09	7.8E-08	
VOC	Methylene Chloride	75-09-2	2.2E-07	5.6E-10	1.2E-11	2.2E-07	1.6E-05	1.5E-08	9.4E-09	7.8E-11	2.4E-08	8.3E-07	2.3E-05	6.7E-09	5.1E-09	1.2E-09	1.7E-09	8.0E-09	1.2E-07	9.0E-07	6.7E-08	8.6E-09	9.4E-11	3.0E-12	8.7E-09	4.2E-08	2.1E-10	6.5E-12	4.2E-08	
VOC	Styrene	100-42-5	5.6E-08	3.7E-10	1.1E-09	5.8E-08	4.0E-06	3.9E-09	6.2E-09	7.4E-09	1.7E-08	5.5E-07	1.7E-05		1.3E-09	8.3E-10	1.6E-07	1.6E-07	1.2E-05	1.0E-04	7.7E-06	2.2E-09	6.2E-11	2.8E-10	2.6E-09	1.1E-08	1.4E-10	6.2E-10	1.2E-08	
VOC	Tetrachloroethene	127-18-4	4.6E-07	4.8E-09	1.9E-08	4.8E-07	3.3E-05	3.1E-08	8.0E-08	1.2E-07	2.4E-07	7.1E-06	2.9E-04	2.9E-04	1.1E-08	1.1E-08	2.7E-06	2.7E-06	2.0E-04	1.5E-02	2.6E-04	1.8E-08	8.0E-10	4.8E-09	2.4E-08	8.8E-08	1.8E-09	1.0E-08	1.0E-07	
VOC	Tetrahydrofuran	109-99-9																												
VOC	Toluene	108-88-3	7.7E-06	2.5E-08	6.8E-08	7.8E-06	5.4E-04	5.2E-07	4.2E-07	4.5E-07	1.4E-06	3.7E-05	4.3E-04	4.3E-04	1.8E-07	5.6E-08	9.9E-06	1.0E-05	7.1E-04	4.3E-02	6.3E-03	3.0E-07	4.2E-09	1.7E-08	3.2E-07	1.5E-06	9.5E-09	3.8E-08	1.5E-06	
VOC	Trichloroethene	79-01-6	2.1E-07	2.1E-09	7.8E-09	2.2E-07	1.5E-05	1.5E-08	3.5E-08	5.1E-08	1.0E-07	3.1E-06	1.2E-04	1.2E-04	5.0E-09	4.6E-09	1.1E-06	1.1E-06	8.1E-05	6.3E-03	5.7E-05	8.4E-09	3.5E-10	2.0E-09	1.1E-08	4.1E-08	7.8E-10	4.3E-09	4.6E-08	
VOC	Vinyl Chloride	75-01-4		4.1E-12		4.1E-12			6.9E-11		6.9E-11	6.1E-09	3.7E-08			9.2E-12		9.2E-12		4.0E-09			6.9E-13		6.9E-13		1.6E-12		1.6E-12	
VOC	Xylenes (total)	1330-20-7	1.8E-06	5.2E-08	5.6E-08	1.9E-06	1.2E-04	1.2E-07	8.6E-07	3.7E-07	1.4E-06	7.6E-05	1.2E-03	1.2E-03	4.1E-08	1.2E-07	8.1E-06	8.3E-06	5.8E-04	3.3E-02	7.7E-03	6.9E-08	8.6E-09	1.4E-08	9.1E-08	3.4E-07	1.9E-08	3.1E-08	3.9E-07	
VOC	cis-1,2-Dichloroethene	156-59-2	7.5E-07	8.7E-12	9.5E-14	7.5E-07	5.3E-05	5.1E-08	1.4E-10	6.3E-13	5.2E-08	1.3E-08	7.7E-08	4.7E-08	1.8E-08	1.9E-11	1.4E-11	1.8E-08	9.8E-10	7.3E-09		2.9E-08	1.4E-12	2.4E-14	2.9E-08	1.4E-07	3.2E-12	5.3E-14	1.4E-07	
VOC	m,p-xylene	6777-61-2	1.0E-06	4.0E-11	4.8E-10	1.0E-06	7.1E-05	6.9E-08	6.7E-10	3.2E-09	7.3E-08	6.0E-08	1.6E-06	1.1E-08	2.3E-08	9.0E-11	6.9E-08	9.3E-08	4.9E-06	4.0E-05		3.9E-08	6.7E-12	1.2E-10	4.0E-08	1.9E-07	1.5E-11	2.7E-10	1.9E-07	
VOC	ortho-xylene	95-47-6	2.0E-07	2.0E-11	1.8E-10	2.1E-07	1.5E-05	1.4E-08	3.4E-10	1.2E-09	1.6E-08	3.0E-08	8.3E-07	4.0E-09	4.8E-09	4.5E-11	2.6E-08	3.1E-08	1.9E-06	2.2E-05	7.7E-09	8.0E-09	3.4E-12	4.6E-11	8.1E-09	3.9E-08	7.7E-12	1.0E-10	3.9E-08	
VOC	p-Cymene	99-87-6																												
VOC	trans-1,2-Dichloroethene	156-60-5																												
SVOC	1,2,4-Trichlorobenzene	120-82-1	2.7E-09	3.4E-10		3.0E-09	1.9E-07	1.8E-10	5.7E-09		5.9E-09	5.0E-07	3.3E-06		6.3E-11	7.6E-10		8.2E-10				1.1E-10	5.7E-11		1.6E-10	5.2E-10	1.3E-10		6.4E-10	
SVOC	1,2-Dichlorobenzene	95-50-1	9.5E-09	2.0E-09	1.1E-12	1.2E-08	6.8E-07	6.5E-10	3.4E-08	7.5E-12	3.4E-08	3.0E-06	7.0E-05	7.0E-05	2.2E-10	4.5E-09	1.6E-10	4.9E-09	1.8E-08	8.7E-08	2.0E-07	3.7E-10	3.4E-10	2.9E-13	7.1E-10	1.8E-09	7.6E-10	6.2E-13	2.6E-09	
SVOC	1,3-Dichlorobenzene	541-73-1	5.5E-10			5.5E-10	4.3E-08	3.8E-11			3.8E-11				1.3E-11			1.3E-11				2.2E-11			2.2E-11	1.1E-10			1.1E-10	
SVOC	1,4-Dichlorobenzene	106-46-7	3.3E-09	3.4E-11	4.0E-13	3.3E-09	2.3E-07	2.2E-10	5.7E-10	2.7E-12	8.0E-10	5.1E-08	3.0E-07		7.6E-11	7.6E-11	5.8E-11	2.1E-10	5.2E-09	3.1E-08		1.3E-10	5.7E-12	1.0E-13	1.3E-10	6.2E-10	1.3E-11	2.2E-13	6.4E-10	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																												
SVOC	2,4,5-Trichlorophenol	95-95-4																	9.4E-09		5.7E-08									
SVOC	2,4-Dichlorophenol	120-83-2	2.6E-09			2.6E-09	1.9E-07	1.8E-10			1.8E-10				6.0E-11			6.0E-11				1.0E-10			1.0E-10	4.9E-10			4.9E-10	
SVOC	2,4-Dimethylphenol	105-67-9	6.8E-09	1.2E-09	8.3E-11	8.1E-09	4.8E-07	4.6E-10	2.0E-08	5.5E-10	2.1E-08	1.8E-06	2.9E-05	2.9E-05	1.6E-10	2.7E-09	1.2E-08	1.5E-08	9.1E-07	2.1E-05	1.6E-06	2.7E-10	2.0E-10	2.1E-11	4.9E-10	1.3E-09	4.6E-10	4.6E-11	1.8E-09	
SVOC	2,4-Dinitrotoluene	121-14-2			3.6E-12	3.6E-12				2.4E-11	2.4E-11						5.3E-10	5.3E-10	4.7E-08	2.8E-07				9.2E-13	9.2E-13			2.0E-12	2.0E-12	
SVOC	2,6-Dinitrotoluene	606-20-2		1.3E-10		1.3E-10			2.2E-09		2.2E-09	1.9E-07	1.2E-06			2.9E-10		2.9E-10					2.2E-11		2.2E-11		4.9E-11		4.9E-11	
SVOC	2-Chloronaphthalene	91-58-7																												
SVOC	2-Methylnaphthalene	91-57-6	4.5E-08	2.0E-08	2.6E-10	6.5E-08	3.2E-06	3.1E-09	3.3E-07	1.7E-09	3.3E-07	2.9E-05	1.7E-04	1.9E-05	1.1E-09	4.3E-08	3.7E-08	8.2E-08	2.8E-06	7.0E-05	1.9E-05	1.8E-09	3.3E-09	6.5E-11	5.1E-09	8.6E-09	7.3E-09	1.4E-10	1.6E-08	1.7E-09
SVOC	2-Methylphenol	95-48-7	7.0E-09	1.4E-09	4.7E-11	8.5E-09	5.0E-07	4.8E-10	2.4E-08	3.1E-10	2.5E-08	2.1E-06	4.0E-05	4.0E-05	1.6E-10	3.2E-09	6.9E-09	1.0E-08	5.4E-07	7.0E-06	1.6E-06	2.7E-10	2.4E-10	1.2E-11	5.2E-10	1.3E-09	5.3E-10	2.6E-11	1.9E-09	
SVOC	3,3'-Dichlorobenzidine	91-94-1					1.2E-08																							
SVOC	4-Bromophenyl-phenylether	101-55-3																												
SVOC	4-Chloro-3-methylphenol	59-50-7																												
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																												
SVOC	4-Methylphenol	106-44-5	7.9E-09	2.0E-09	4.4E-11	1.0E-08	5.7E-07	5.4E-10	3.3E-08	2.9E-10	3.4E-08	2.9E-06	6.0E-05	6.0E-05	1.8E-10	4.4E-09	6.4E-09	1.1E-08	5.0E-07	7.3E-06	1.5E-06	3.1E-10	3.3E-10	1.1E-11	6.5E-10	1.5E-09	7.5E-10	2.4E-11	2.3E-09	
SVOC	4-Nitrophenol	100-02-7			2.9E-13	2.9E-13				1.9E-12	1.9E-12						4.1E-11	4.1E-11	3.7E-09	2.2E-08				7.2E-14	7.2E-14			1.6E-13	1.6E-13	
SVOC	Acenaphthene	83-32-9	6.9E-09	5.6E-10	3.1E-12	7.5E-09	4.9E-07	4.7E-10	9.4E-09	2.0E-11	9.9E-09	8.3E-07	5.0E-06		1.6E-10	1.3E-09	4.5E-10	1.9E-09	3.6E-08	2.4E-07	1.2E-07	2.7E-10	9.4E-11	7.8E-13	3.6E-10	1.3E-09	2.1E-10	1.7E-12	1.5E-09	
SVOC	Acenaphthylene	208-96-8	3.4E-09			3.4E-09	2.5E-07	2.4E-10			2.4E-10				8.0E-11			8.0E-11				1.4E-10			1.4E-10	6.6E-10			6.6E-10	1.6E-08
SVOC	Anthracene	120-12-7	6.9E-10	4.9E-11	5.2E-12	7.4E-10	5.0E-08	4.7E-11	8.1E-10	3.4E-11	9.0E-10	7.2E-08	4.3E-07		1.6E-11	1.1E-10	7.5E-10	8.8E-10	6.1E-08	4.0E-07	2.2E-07	2.7E-11	8.1E-12	1.3E-12	3.6E-11	1.3E-10	1.8E-11	2.9E-12	1.5E-10	1.4E-08
SVOC	Benzo(a)anthracene	56-55-3		1.0E-10	9.1E-12	1.1E-10	6.6E-10		1.7E-09	6.0E-11	1.8E-09	1.5E-07	9.0E-07			2.3E-10	1.3E-09	1.5E-07	1.2E-07	7.0E-07	8.0E-07		1.7E-11	2.3E-12	1.9E-11		3.8E-11	5.0E-12	4.3E-11	2.0E-08
SVOC	Benzo(a)pyrene	50-32-8		5.6E-11	6.1E-12	6.2E-11	9.2E-10		9.4E-10	4.0E-11	9.8E-10	8.3E-08	5.0E-07			1.3E-10	8.8E-10	1.0E-09	7.8E-08	4.7E-07	4.7E-07		9.4E-12	1.5E-12	1.1E-11		2.1E-11	3.4E-12	2.5E-11	2.2E-08
SVOC	Benzo(b)fluoranthene	205-99-2		2.0E-10	1.7E-11	2.2E-10	9.6E-10		3.3E-09	1.1E-10	3.4E-09	2.9E-07	1.8E-06			4.4E-10	2.4E-09	2.9E-09	1.8E-07	1.3E-06	1.3E-06		3.3E-11	4.3E-12	3.8E-11		7.5E-11	9.4E-12	8.4E-11	2.4E-08
SVOC	Benzo(g,h,i)perylene	191-24-2		5.6E-11	4.8E-12	6.1E-11			9.4E-10	3.2E-11	9.7E-10	8.3E-08	5.0E-07			1.3E-10	6.9E-10	8.1E-10	6.1E-08	3.7E-07	3.7E-07		9.4E-12	1.2E-12	1.1E-11		2.1E-11	2.6E-12	2.4E-11	1.6E-08
SVOC	Benzo(k)fluoranthene	207-08-9		2.0E-10	1.7E-11	2.2E-10	8.1E-10		3.3E-09	1.1E-10	3.4E-09	2.9E-07	1.8E-06			4.4E-10	2.4E-09	2.9E-09	1.8E-07	1.3E-06	1.3E-06		3.3E-11	4.3E-12	3.8E-11		7.5E-11	9.4E-12	8.4E-11	2.3E-08
SVOC	Benzoic Acid	65-85-0	8.1E-09	4.5E-09	1.0E-09	1.4E-08	7.2E-07	5.6E-10	7.5E-08	6.6E-09	8.2E-08	6.7E-06	8.0E-05		1.9E-10	1.0E-08	1.4E-07	1.5E-07	1.1E-05	7.7E-05		3.2E-10	7.5E-10	2.5E-10	1.3E-09	1.6E-09	1.7E-09	5.5E-10	3.8E-09	
SVOC	Benzyl Alcohol	100-51-6		1.0E-09		1.0E-09			1.7E-08		1.7E-08	1.5E-06	1.1E-05			2.2E-09		2.2E-09					1.7E-10		1.7E-10		3.7E-10		3.7E-10	
SVOC	Butylbenzylphthalate	85-68-7	7.9E-08	1.6E-08	1.5E-10	9.5E-08	5.6E-06	5.4E-09	2.6E-07	9.6E-10	2.7E-07	2.3E-05	1.4E-04		1.8E-09	3.5E-08	2.1E-08	5.8E-08	1.7E-06	2.2E-05	1.7E-05	3.1E-09	2.6E-09	3.7E-11	5.8E-09	1.5E-08	5.9E-09	8.1E-11	2.1E-08	
SVOC	Carbazole	86-74-8																												2.0E-09
SVOC	Chrysene	218-01-9		1.4E-10	6.9E-12	1.5E-10	8.2E-10		2.4E-09	4.6E-11	2.4E-09	2.1E-07	1.3E-06			3.2E-10	1.0E-09	1.3E-09	8.6E-08	5.3E-07	4.3E-07		2.4E-11	1.8E-12	2.6E-11		5.4E-11	3.8E-12	5.7E-11	2.2E-08
SVOC	Di-n-butylphthalate	84-74-2	5.4E-08	2.8E-09	2.9E-10	5.7E-08	3.8E-06	3.7E-09	4.7E-08	1.9E-09	5.3E-08	4.2E-06	1.3E-04	2.8E-05	1.3E-09	6.3E-09	4.2E-08	5.0E-08	3.1E-06	8.0E-05	3.1E-05	2.1E-09	4.7E-10	7.4E-11	2.6E-09	1.0E-08	1.1E-09	1.6E-10	1.2E-08	4.7E-09
SVOC	Di-n-octylphthalate	117-84-0	6.3E-09	4.9E-10	6.9E-11	6.9E-09	4.5E-07	4.3E-10	8.1E-09	4.6E-10	9.0E-09	7.2E-07	4.3E-06		1.5E-10	1.1E-09	9.9E-09	1.1E-08	7.2E-07	1.3E-05	1.3E-05	2.5E-10	8.1E-11	1.7E-11	3.5E-10	1.2E-09	1.8E-10	3.8E-11	1.4E-09	
SVOC	Dibenzo(a,h)anthracene	53-70-3			1.2E-12	1.2E-12				7.8E-12	7.8E-12		2.3E-08				1.7E-10	1.7E-10	1.5E-08	9.0E-08	9.0E-08			3.0E-13	3.0E-13		6.5E-13	6.5E-13	1.6E-08
SVOC	Dibenzofuran	132-64-9	2.6E-09	9.4E-11	2.8E-12	2.7E-09	1.9E-07	1.8E-10	1.6E-09	1.8E-11	1.8E-09	1.4E-07	8.3E-07		6.1E-11	2.1E-10	4.0E-10	6.7E-10	3.3E-08	2.1E-07	1.4E-07	1.0E-10	1.6E-11	7.0E-13	1.2E-10	5.0E-10	3.5E-11	1.5E-12	5.4E-10	

Table B-7c: Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use - Annual Average
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE					FUTURE							FUTURE								FUTURE					FUTURE				
	Location of Exposure:			AREA 1							AREA 2						AREA 3							AREA 4A					AREA 4B			
	Type of Activity at Emission Location:			Routine Industrial			Excavatio		Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavation	Const (0-10')	Const (0-4')	Routine Industrial				Routine Industrial			Excavation		
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	
	C/Q (kg/m^3 per kg/m^2/s)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01	
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Diethylphthalate	84-66-2	9.8E-09	9.3E-10	2.2E-11	1.1E-08	7.0E-07	6.7E-10	1.6E-08	1.4E-10	1.6E-08	1.4E-06	2.1E-05		2.3E-10	2.1E-09	3.1E-09	5.4E-09	2.2E-07	1.7E-06	1.7E-06	3.8E-10	1.6E-10	5.5E-12	5.4E-10	1.9E-09	3.5E-10	1.2E-11	2.2E-09			
SVOC	Dimethylphthalate	131-11-3	3.4E-08	9.8E-09	4.5E-11	4.4E-08	2.4E-06	2.3E-09	1.6E-07	3.0E-10	1.7E-07	1.4E-05	8.7E-05	3.7E-05	7.9E-10	2.2E-08	6.5E-09	2.9E-08	4.8E-07	5.3E-06	4.7E-07	1.3E-09	1.6E-09	1.1E-11	3.0E-09	6.5E-09	3.7E-09	2.5E-11	1.0E-08			
SVOC	Fluoranthene	206-44-0	2.4E-09	1.5E-10	2.6E-11	2.6E-09	1.7E-07	1.6E-10	2.6E-09	1.8E-10	2.9E-09	2.3E-07	1.4E-06		5.6E-11	3.4E-10	3.8E-09	4.2E-09	3.1E-07	2.0E-06	1.1E-06	9.3E-11	2.6E-11	6.7E-12	1.3E-10	4.6E-10	5.8E-11	1.5E-11	5.3E-10	2.2E-08		
SVOC	Fluorene	86-73-7	6.6E-09	6.7E-10	4.2E-12	7.3E-09	4.7E-07	4.5E-10	1.1E-08	2.8E-11	1.2E-08	9.9E-07	6.0E-06		1.5E-10	1.5E-09	6.1E-10	2.3E-09	5.0E-08	3.3E-07	2.1E-07	2.6E-10	1.1E-10	1.1E-12	3.7E-10	1.3E-09	2.5E-10	2.4E-12	1.5E-09			
SVOC	Hexachlorobenzene	118-74-1					3.2E-10						3.1E-07																		
SVOC	Hexachlorobutadiene	87-68-3	3.8E-09	5.1E-10		4.3E-09	2.7E-07	2.6E-10	8.6E-09		8.8E-09	7.6E-07	2.0E-05		8.8E-11	1.1E-09		1.2E-09				1.5E-10	8.6E-11		2.3E-10	7.2E-10	1.9E-10		9.2E-10			
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5		5.3E-11	3.6E-12	5.6E-11	4.9E-10		8.8E-10	2.4E-11	9.0E-10	7.8E-08	4.7E-07			1.2E-10	5.1E-10	6.3E-10	4.6E-08	2.7E-07	2.7E-07		8.8E-12	9.0E-13	9.7E-12		2.0E-11	2.0E-12	2.2E-11	1.9E-08		
SVOC	Isophorone	78-59-1	1.3E-07	8.7E-09	2.6E-09	1.5E-07	9.6E-06	9.2E-09	1.4E-07	1.7E-08	1.7E-07	1.3E-05	6.0E-04	7.0E-05	3.1E-09	1.9E-08	3.8E-07	4.0E-07	2.7E-05	1.2E-03	6.3E-05	5.3E-09	1.4E-09	6.6E-10	7.4E-09	2.6E-08	3.2E-09	1.5E-09	3.1E-08	2.3E-09		
SVOC	N-Nitroso-di-n-propylamine	621-64-7																													
SVOC	N-Nitrosodiphenylamine	86-30-6			8.2E-12	8.2E-12				5.5E-11	5.5E-11		2.3E-06				1.2E-09	1.2E-09	1.3E-07	6.3E-07	1.4E-06			2.1E-12	2.1E-12			4.6E-12	4.6E-12		
SVOC	Naphthalene	91-20-3	7.2E-08	3.8E-09	5.5E-10	7.7E-08	5.1E-06	5.0E-09	6.4E-08	3.6E-09	7.2E-08	5.6E-06	1.6E-04	4.7E-05	1.7E-09	8.5E-09	8.0E-08	9.0E-08	6.0E-06	2.3E-04	3.2E-05	2.8E-09	6.4E-10	1.4E-10	3.6E-09	1.4E-08	1.4E-09	3.1E-10	1.6E-08	1.4E-09		
SVOC	Pentachlorophenol	87-86-5	1.2E-08	1.7E-09	6.9E-11	1.4E-08	8.8E-07	8.4E-10	2.9E-08	4.6E-10	3.0E-08	2.6E-06	2.1E-05		2.9E-10	3.9E-09	1.0E-08	1.4E-08	7.3E-07	5.3E-06	5.0E-07	4.8E-10	2.9E-10	1.8E-11	7.9E-10	2.4E-09	6.5E-10	3.8E-11	3.0E-09			
SVOC	Phenanthrene	85-01-8	5.7E-09	6.7E-10	2.8E-11	6.4E-09	4.0E-07	3.9E-10	1.1E-08	1.8E-10	1.2E-08	9.8E-07	7.0E-06		1.3E-10	1.5E-09	4.0E-09	5.6E-09	3.2E-07	2.1E-06	1.4E-06	2.2E-10	1.1E-10	7.0E-12	3.4E-10	1.1E-09	2.5E-10	1.5E-11	1.4E-09	8.3E-09		
SVOC	Phenol	108-95-2	1.3E-08	2.1E-09	8.9E-10	1.6E-08	9.3E-07	9.0E-10	3.4E-08	5.9E-09	4.1E-08	3.1E-06	5.7E-05	5.7E-05	3.1E-10	4.6E-09	1.3E-07	1.3E-07	9.2E-06	2.9E-04	9.3E-06	5.1E-10	3.4E-10	2.3E-10	1.1E-09	2.5E-09	7.8E-10	4.9E-10	3.8E-09			
SVOC	Pyrene	129-00-0	3.7E-09	3.0E-10	1.8E-11	4.0E-09	2.6E-07	2.5E-10	5.0E-09	1.2E-10	5.4E-09	4.4E-07	2.7E-06		8.6E-11	6.7E-10	2.6E-09	3.4E-09	2.1E-07	1.4E-06	7.7E-07	1.4E-10	5.0E-11	4.6E-12	2.0E-10	7.1E-10	1.1E-10	1.0E-11	8.3E-10	2.1E-08		
SVOC	bis(2-Chloroethyl) ether	111-44-4	6.4E-09	7.1E-10		7.1E-09	4.5E-07	4.3E-10	1.2E-08		1.2E-08	1.0E-06	3.7E-05		1.5E-10	1.6E-09		1.7E-09				2.5E-10	1.2E-10		3.7E-10	1.2E-09	2.7E-10		1.5E-09			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.1E-07	1.3E-08	6.7E-09	2.3E-07	1.5E-05	1.4E-08	2.1E-07	4.4E-08	2.7E-07	1.9E-05	7.7E-04	8.0E-05	4.8E-09	2.9E-08	9.6E-07	1.0E-06	7.3E-05	3.0E-03	1.8E-04	8.1E-09	2.1E-09	1.7E-09	1.2E-08	4.0E-08	4.8E-09	3.7E-09	4.8E-08	2.2E-07		
P/PCB	4,4'-DDD	72-54-8	2.3E-09	5.5E-11		2.3E-09	1.6E-07	1.5E-10	9.1E-10		1.1E-09	8.1E-08	1.1E-06		5.3E-11	1.2E-10		1.7E-10	8.3E-09		5.0E-08	8.8E-11	9.1E-12		9.8E-11	4.3E-10	2.1E-11		4.5E-10	4.3E-09		
P/PCB	4,4'-DDE	72-55-9		3.3E-11		3.3E-11			5.5E-10		5.5E-10	4.9E-08	2.9E-07			7.4E-11		7.4E-11					5.5E-12		5.5E-12		1.2E-11		1.2E-11	1.6E-08		
P/PCB	4,4'-DDT	50-29-3	3.0E-09	4.7E-11		3.1E-09	2.1E-07	2.1E-10	7.8E-10		9.9E-10	6.9E-08	5.7E-07		7.0E-11	1.0E-10		1.7E-10				1.2E-10	7.8E-12		1.3E-10	5.8E-10	1.8E-11		5.9E-10	1.3E-08		
P/PCB	Aldrin	309-00-2		2.3E-10		2.3E-10			3.8E-09		3.8E-09	3.4E-07	2.6E-06			5.0E-10		5.0E-10					3.8E-11		3.8E-11		8.5E-11		8.5E-11			
P/PCB	Aroclor-1242	3469-21-9	1.9E-08		1.3E-10	1.9E-08	1.4E-06	1.3E-09		8.4E-10	2.2E-09		2.9E-06		4.5E-10		1.8E-08	1.9E-08	1.4E-06	9.3E-05	9.3E-05	7.5E-10		3.2E-11	7.9E-10	3.7E-09		7.0E-11	3.8E-09		
P/PCB	Aroclor-1248	2672-29-6	1.3E-08	1.9E-09	6.9E-11	1.5E-08	9.4E-07	9.0E-10	3.1E-08	4.6E-10	3.2E-08	2.8E-06	1.1E-04	1.1E-04	3.1E-10	4.1E-09	9.9E-09	1.4E-08	7.8E-07	4.2E-05	4.2E-05	5.2E-10	3.1E-10	1.7E-11	8.4E-10	2.5E-09	7.0E-10	3.8E-11	3.3E-09	1.2E-08		
P/PCB	Aroclor-1254	1097-69-1	2.2E-08	1.4E-09	4.1E-11	2.3E-08	1.6E-06	1.5E-09	2.3E-08	2.7E-10	2.4E-08	2.0E-06	1.2E-05	1.6E-06	5.1E-10	3.0E-09	6.0E-09	9.5E-09	5.3E-07	1.5E-05	7.3E-06	8.6E-10	2.3E-10	1.0E-11	1.1E-09	4.2E-09	5.1E-10	2.3E-11	4.7E-09	4.9E-07		
P/PCB	Aroclor-1260	1096-82-5	1.4E-08	1.3E-08	2.8E-11	2.7E-08	9.8E-07	9.4E-10	2.2E-07	1.9E-10	2.2E-07	1.9E-05	1.1E-03	2.1E-05	3.2E-10	2.9E-08	4.1E-09	3.3E-08	3.2E-07	1.2E-05	1.2E-05	5.4E-10	2.2E-09	7.1E-12	2.7E-09	2.6E-09	4.9E-09	1.6E-11	7.5E-09	5.4E-08		
P/PCB	Dieldrin	60-57-1	1.5E-10			1.5E-10	1.1E-08	1.0E-11			1.0E-11				3.5E-12			3.5E-12				5.9E-12			5.9E-12	2.9E-11			2.9E-11			
P/PCB	Endosulfan I	959-98-8	7.5E-10			7.5E-10	5.3E-08	5.1E-11			5.1E-11				1.8E-11			1.8E-11				2.9E-11			2.9E-11	1.4E-10			1.4E-10	2.2E-08		
P/PCB	Endosulfan sulfate	1031-07-8																													3.3E-09		
P/PCB	Endrin	72-20-8	1.0E-09			1.0E-09	7.1E-08	6.9E-11			6.9E-11				2.3E-11			2.3E-11				3.9E-11			3.9E-11	1.9E-10			1.9E-10	8.3E-09		
P/PCB	Endrin aldehyde	7421-93-4																															
P/PCB	Endrin ketone	3494-70-5					6.1E-10																										
P/PCB	Heptachlor	76-44-8																	4.9E-09		2.9E-08										3.4E-09		
P/PCB	Heptachlor epoxide	1024-57-3																	2.3E-09		1.4E-08												
P/PCB	Methoxychlor	72-43-5																													1.6E-08		
P/PCB	alpha-BHC	319-84-6		1.2E-11		1.2E-11			2.1E-10		2.1E-10	1.8E-08	1.1E-07			2.8E-11		2.8E-11					2.1E-12		2.1E-12		4.7E-12		4.7E-12			
P/PCB	alpha-Chlordane	5103-71-9																													1.2E-08		
P/PCB	beta-BHC	319-85-7		2.4E-11		2.4E-11			3.9E-10		3.9E-10	3.5E-08	2.7E-07			5.3E-11		5.3E-11					3.9E-12		3.9E-12		8.9E-12		8.9E-12	1.4E-09		
P/PCB	gamma-BHC	58-89-9																													1.6E-09		
P/PCB	gamma-Chlordane	5103-74-2	7.5E-10			7.5E-10	5.4E-08	5.1E-11			5.1E-11				1.8E-11			1.8E-11				2.9E-11			2.9E-11	1.4E-10			1.4E-10	2.7E-09		
INORG	Antimony	7440-36-0	1.0E-08	2.5E-09	6.6E-10	1.3E-08	7.3E-07	6.9E-10	4.1E-08	4.4E-09	4.6E-08	3.6E-06	5.5E-05	5.5E-05	2.4E-10	5.5E-09	9.5E-08	1.0E-07	7.5E-06	5.1E-05	2.8E-05	4.0E-10	4.1E-10	1.7E-10	9.7E-10	1.9E-09	9.2E-10	3.7E-10	3.2E-09			
INORG	Arsenic	7440-38-2	2.7E-09	1.8E-10	1.6E-11	2.9E-09	2.2E-07	1.8E-10	3.0E-09	1.1E-10	3.3E-09	2.7E-07	2.6E-06	2.6E-06	6.3E-11	4.1E-10	2.3E-09	2.8E-09	5.1E-07	1.8E-06	1.0E-05	1.1E-10	3.0E-11	4.1E-12	1.4E-10	5.2E-10	6.9E-11	8.9E-12	5.9E-10	4.2E-07		
INORG	Barium	7440-39-3	1.5E-07	3.7E-08	1.1E-08	1.9E-07	1.2E-05	1.0E-08	6.1E-07	7.0E-08	6.9E-07	5.4E-05	9.0E-04	9.0E-04	3.4E-09	8.1E-08	1.5E-06	1.6E-06	1.4E-04	2.1E-03	1.9E-03	5.7E-09	6.1E-09	2.7E-09	1.4E-08	2.8E-08	1.4E-08	5.8E-09	4.8E-08			
INORG	Beryllium	7440-41-7	1.3E-10	1.2E-11	1.7E-12	1.4E-10	4.4E-08	8.9E-12	2.0E-10	1.1E-11	2.2E-10	1.7E-08	1.1E-07		3.0E-12	2.6E-11	2.5E-10	2.7E-10	3.4E-08	2.7E-07	5.0E-07	5.1E-12	2.0E-12	4.3E-13	7.5E-12	2.5E-11	4.4E-12	9.4E-13	3.0E-11			
INORG	Cadmium	7440-43-9	9.2E-09	4.0E-09	1.8E-09	1.5E-08	6.7E-07	6.3E-10	6.6E-08	1.2E-08	7.9E-08	5.9E-06	3.5E-05	3.5E-05	2.1E-10	8.9E-09	2.6E-07	2.7E-07	2.0E-05	5.7E-04	5.8E-05	3.6E-10	6.6E-10	4.6E-10	1.5E-09	1.8E-09	1.5E-09	1.0E-09	4.3E-09	3.3E-07		
INORG	Chromium 3+	6065-83-1	1.0E-07	4.8E-08	5.2E-09	1.6E-07	7.6E-06	7.0E-09	8.0E-07	3.4E-08	8.4E-07	7.0E-05	4.2E-04	4.2E-04	2.4E-09	1.1E-07	7.5E-07	8.6E-07	6.6E-05	1.1E-03	8.8E-04	4.0E-09	8.0E-09	1.3E-09	1.3E-08	2.0E-08	1.8E-08	2.9E-09	4.0E-08	1.6E-06		
INORG	Chromium 6+	8540-29-9	1.7E-08	8.0E-09	8.7E-10	2.6E-08	1.3E-06	1.2E-09	1.3E-07	5.7E-09	1.4E-07	1.2E-05	7.0E-05	7.0E-05	4.0E-10	1.8E-08	1.3E-07	1.4E-07	1.1E-05	1.8E-04	1.5E-04	6.7E-10	1.3E-09	2.2E-10	2.2E-09	3.3E-09	3.0E-09	4.8E-10	6.7E-09	2.6E-07		
INORG	Cobalt	7440-48-4	6.6E-09	5.3E-10	2.1E-10	7.4E-09	5.1E-07	4.5E-10	8.9E-09	1.4E-09	1.1E-08	7.9E-07	1.1E-05	1.1E-05	1.6E-10	1.2E-09	3.0E-08	3.1E-08	2.7E-06	4.9E-05	4.9E-05	2.6E-10	8.9E-11	5.2E-11	4.0E-10	1.3E-09	2.0E-10	1.1E-10	1.6E-09			
INORG	Copper	7440-50-8	4.1E-08	5.0E-08	8.5E-09	9.9E-08	3.2E-06	2.8E-09	8.3E-07	5.7E-08	8.9E-07	7.3E-05	4.4E-04	4.4E-04	9.5E-10	1.1E-07	1.2E-06	1.3E-06	1.0E-04	1.9E-03	1.5E-03	1.6E-09	8.3E-09	2.2E-09	1.2E-08	7.8E-09	1.9E-08	4.7E-09	3.1E-08	2.1E-06		
INORG	Cyanide (total)	57-12-5	6.0E-09		1.2E-10	6.1E-09	4.3E-07	4.1E-10		8.1E-10	1.2E-09				1.4E-10		1.8E-08	1.8E-08	1.8E-06	2.2E-05	2.2E-05	2.3E-10		3.1E-11	2.6E-10	1.1E-09		6.8E-11	1.2E-09			
INORG	Lead	7439-92-1	5.3E-07	3.8E-07	2.9E-08	9.4E-07	3.9E-05	3.6E-08	6.4E-06	1.9E-07	6.6E-06	5.7E-04	3.4E-03	3.4E-03	1.2E-08	8.5E-07	4.2E-06	5.1E-06	4.2E-04	5.7E-03	5.4E-03	2.1E-08	6.4E-08	7.4E-09	9.2E-08	1.0E-07	1.4E-07	1.6E-08	2.6E-07	8.0E-06		
INORG	Manganese	7439-96-5	2.3E-07	8.9E-09	2.9E-09	2.4E-07	3.0E-05	1.6E-08	1.5E-07	1.9E-08	1.8E-07	1.3E-05	1.3E-04	1.3E-04	5.3E-09	2.0E-08	4.1E-07	4.4E-07	4.6E-05	2.4E-04	5.1E-04	8.9E-09	1.5E-09	7.2E-10	1.1E-08	4.4E-08	3.3E-09	1.6E-09	4.9E-08			
INORG	Mercury	7439-97-6	1.4E-09	3.0E-10	4.5E-11	1.8E-09	1.5E-07	9.9E-11	4.9E-09	3.0E-10	5.3E-09	4.4E-07	2.6E-06	2.6E-06	3.4E-11	6.6E-10	6.5E-09	7.2E-09	5.7E-07	1.2E-05	3.2E-06	5.7E-11	4.9E-11	1.1E-11	1.2E-10	2.8E-10	1.1E-10	2.5E-11	4.1E-10	2.5E-08		
INORG	Nickel	7440-02-0	5.4E-09	9.3E-10	2.4E-10	6.6E-09	4.7E-07	3.7E-10	1.5E-08	1.6E-09	1.7E-08	1.4E-06	1.8E-05	1.8E-05	1.3E-10	2.1E-09	3.5E-08	3.7E-08	3.0E-06	6.6E-05	6.6E-05	2.1E-10	1.5E-10	6.1E-11	4.3E-10	1.0E-09	3.5E-10	1.3E-10	1.5E-09			
INORG	Selenium	7782-49-2	3.8E-10	1.0E-10	1.6E-10	6.5E-10	3.2E-08	2.6E-11	1.7E-09	1.1E-09	2.8E-09	1.5E-07	2.8E-06	2.8E-06	8.8E-12	2.3E-10	2.4E-08	2.4E-08	1.9E-06	5.2E-05	5.7E-06	1.5E-11	1.7E-11	4.1E-11	7.4E-11	7.2E-11	3.9E-11	9.1E-11	2.0E-10			
INORG	Silver	7440-22-4		3.7E-10	3.5E-10	7.2E-10	1.6E-08		6.2E-09	2.3E-09	8.5E-09	5.5E-07	1.2E-05	1.2E-05		8.2E-10	5.1E-08	5.1E-08	3.7E-06	1.0E-04	8.3E-06		6.2E-11	8.9E-11	1.5E-10		1.4E-10	1.9E-10	3.3E-10			
INORG	Thallium	7440-28-0		2.7E-11	3.5E-12	3.1E-11			4.5E-10	2.3E-11	4.8E-10	4.0E-08	3.3E-07			6.0E-11	5.0E-10	5.6E-10	4.2E-08	5.0E-07		4.5E-12	8.7E-13	5.4E-12		1.0E-11	1.9E-12	1.2E-11			
INORG	Vanadium	7440-62-2	6.9E-09	3.6E-10	8.2E-11	7.4E-09	6.2E-07	4.7E-10	6.0E-09	5.4E-10	7.0E-09	5.3E-07	4.1E-06	4.1E-06	1.6E-10	8.0E-10	1.2E-08	1.3E-08	1.1E-06	1.6E-05	1.6E-05	2.7E-10	6.0E-11	2.1E-11	3.5E-10	1.3E-09	1.4E-10	4.5E-11	1.5E-09			
INORG	Zinc	7440-66-6	2.3E-07	1.2E-07	6.9E-08	4.2E-07	1.7E-05	1.5E-08	2.1E-06	4.5E-07	2.5E-06	1.8E-04	2.8E-03	2.8E-03	5.3E-09	2.8E-07	9.9E-06	1.0E-05	8.7E-04	5.3E-03	5.3E-03	8.8E-09	2.1E-08	1.7E-08	4.7E-08	4.3E-08	4.7E-08	3.8E-08	1.3E-07	1.7E-05		
TIC	Acetaldehyde	75-07-0																															
TIC	Acetophenone	98-86-2																															
TIC	Butanol, 1-	71-36-3																															
TIC	Caprolactam	105-60-2																															
TIC	Chlorodifluoromethane	75-45-6																															
TIC	Cyclohexanone	108-94-1																															
TIC	Diethyl ether	60-29-7																															
TIC	Dioxane, 1,4-	123-91-1																															
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																															
TIC	Hexane, n-	110-54-3		5.6E-12		5.6E-12			9.4E-11		9.4E-11	8.3E-09				1.2E-11		1.2E-11					9.4E-13		9.4E-13		2.1E-12		2.1E-12			
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																															
TIC	Phthalic anhydride	85-44-9	3.6E-09			3.6E-09	2.5E-07	2.4E-10			2.4E-10				8.4E-11			8.4E-11				1.4E-10			1.4E-10	6.9E-10			6.9E-10			

Table B-7c (cont.): Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario: FUTURE (AREA 5A, Area 5A); FUTURE (AREA 6, Area 6)

Analyte Group	Substance	CASRN	AREA 5A Routine Industrial				AREA 5A Excavation					Area 5A Construction (0-10')			Area 5A Construction (0-4')			AREA 6 Routine Industrial				AREA 6 Excavation					Area 6 Construction (0-10')			Area 6 Construction (0-4')		
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max
C/Q (kg/m^3 per kg/m^2/s)			3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
			C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	2.5E-08	6.9E-10	2.7E-08	5.3E-08	2.4E-08	1.1E-09	9.8E-08		9.8E-08	2.1E-07	4.4E-05	4.4E-05	1.0E-10	5.2E-11	1.0E-10	1.4E-08	1.5E-10	3.8E-09	1.8E-08	1.4E-08	2.7E-10	2.2E-08		2.2E-08	5.8E-08	1.3E-05	1.3E-05	2.8E-11	1.5E-11	2.8E-11
VOC	1,1,2,2-Tetrachloroethane	79-34-5	6.5E-11	1.8E-12		6.7E-11	6.3E-11	2.9E-12			6.3E-11	1.2E-10		1.2E-10				3.7E-11	3.9E-13		3.7E-11	3.8E-11	7.2E-13			3.8E-11	3.2E-11		3.2E-11			
VOC	1,1,2-Trichloroethane	79-00-5	1.4E-10			1.4E-10	1.3E-10				1.3E-10	2.2E-07	3.7E-09	2.2E-07				7.6E-11			7.6E-11	7.8E-11				7.8E-11	5.9E-08	1.1E-09	5.9E-08			
VOC	1,1-Dichloroethane	75-34-3	3.7E-10	6.1E-10	6.4E-11	1.0E-09	3.5E-10	9.6E-10	2.3E-10		9.6E-10	4.3E-08	9.9E-09	4.3E-08		8.7E-10	8.7E-10	2.1E-10	1.3E-10	8.9E-12	3.5E-10	2.1E-10	2.4E-10	5.4E-11		2.4E-10	1.2E-08	2.9E-09	1.2E-08		2.6E-10	2.6E-10
VOC	1,1-Dichloroethene	75-35-4										2.8E-11		2.8E-11	2.8E-11		2.8E-11										7.7E-12		7.7E-12	7.7E-12		7.7E-12
VOC	1,2,4-Trimethylbenzene	95-63-6																														
VOC	1,2-Dichloroethane	107-06-2	6.7E-10	3.3E-10	3.0E-11	1.0E-09	6.4E-10	5.2E-10	1.2E-10		6.4E-10	5.9E-08	4.7E-09	5.9E-08				3.8E-10	7.2E-11	4.2E-12	4.5E-10	3.8E-10	1.3E-10	2.8E-11		3.8E-10	1.6E-08	1.4E-09	1.6E-08			
VOC	1,2-Dichloroethene (total)	540-59-0	4.0E-09	8.5E-10	9.8E-10	5.8E-09	3.8E-09	1.3E-09	3.8E-09	1.2E-13	3.8E-09	1.1E-07	1.5E-07	1.5E-07		4.4E-08	4.4E-08	2.3E-09	1.8E-10	1.4E-10	2.6E-09	2.3E-09	3.4E-10	8.7E-10	9.2E-14	2.3E-09	3.0E-08	4.4E-08	4.4E-08		1.3E-08	1.3E-08
VOC	1,2-Dichloropropane	78-87-5	3.7E-10	1.4E-10	2.1E-11	5.3E-10	3.5E-10	2.2E-10	7.5E-11		3.5E-10	8.9E-09	3.2E-09	8.9E-09		1.1E-10	1.1E-10	2.1E-10	3.0E-11	2.9E-12	2.4E-10	2.1E-10	5.4E-11	1.7E-11		2.1E-10	2.4E-09	9.4E-10	2.4E-09		3.2E-11	3.2E-11
VOC	1,3,5-Trimethylbenzene	108-67-8																														
VOC	2-Butanone	78-93-3	6.7E-09	2.5E-08	3.5E-07	3.8E-07	6.4E-09	4.0E-08	4.6E-06		4.6E-06	1.5E-05	5.7E-04	5.7E-04	1.7E-06	1.4E-06	1.7E-06	3.7E-09	5.4E-09	4.8E-08	5.7E-08	3.8E-09	9.9E-09	1.1E-06		1.1E-06	4.0E-06	1.7E-04	1.7E-04	4.6E-07	4.1E-07	4.6E-07
VOC	2-Hexanone	591-78-6		1.6E-09	1.5E-11	1.6E-09		2.5E-09	6.6E-11		2.5E-09	3.0E-07	2.3E-09	3.0E-07	3.0E-07		3.0E-07		3.5E-10	2.0E-12	3.5E-10		6.3E-10	1.5E-11		6.3E-10	8.1E-08	6.6E-10	8.1E-08	8.1E-08		8.1E-08
VOC	4-Methyl-2-pentanone	108-10-1	7.1E-09	4.1E-09	2.2E-07	2.3E-07	6.8E-09	6.6E-09	7.8E-07		7.8E-07	1.2E-06	3.5E-04	3.5E-04	1.2E-06	2.9E-06	2.9E-06	4.0E-09	9.0E-10	3.0E-08	3.5E-08	4.1E-09	1.6E-09	1.8E-07		1.8E-07	3.2E-07	1.0E-04	1.0E-04	3.2E-07	8.5E-07	8.5E-07
VOC	Acetone	67-64-1	6.7E-09	8.1E-09	1.2E-07	1.4E-07	6.4E-09	1.3E-08	4.4E-07	2.4E-13	4.4E-07	4.0E-06	2.0E-04	2.0E-04	4.0E-06	5.6E-09	4.0E-06	3.8E-09	1.7E-09	1.7E-08	2.2E-08	3.9E-09	3.2E-09	1.0E-07	1.9E-13	1.0E-07	1.1E-06	5.8E-05	5.8E-05	1.1E-06	1.6E-09	1.1E-06
VOC	Benzene	71-43-2	5.4E-09	7.8E-10	5.7E-09	1.2E-08	5.2E-09	1.2E-09	2.1E-08		2.1E-08	3.2E-07	8.7E-06	8.7E-06	1.5E-07	1.9E-08	1.5E-07	3.1E-09	1.7E-10	7.9E-10	4.0E-09	3.1E-09	3.1E-10	4.7E-09		4.7E-09	8.5E-08	2.6E-06	2.6E-06	4.0E-08	5.4E-09	4.0E-08
VOC	Bromodichloromethane	75-27-4																														
VOC	Carbon Disulfide	75-15-0					4.0E-14				4.0E-14		1.7E-11	1.7E-11								2.4E-14				2.4E-14		5.1E-12	5.1E-12			
VOC	Carbon Tetrachloride	56-23-5																														
VOC	Chlorobenzene	108-90-7	1.7E-10		3.9E-09	4.1E-09	1.6E-10		1.4E-08		1.4E-08	8.3E-08	5.8E-06	5.8E-06		3.6E-08	3.6E-08	9.4E-11		5.4E-10	6.4E-10	9.6E-11		3.3E-09		3.3E-09	2.2E-08	1.7E-06	1.7E-06		1.1E-08	1.1E-08
VOC	Chloroethane	75-00-3											7.0E-11	7.0E-11														2.0E-11	2.0E-11			
VOC	Chloroform	67-66-3	4.9E-09	9.6E-10	1.1E-13	5.8E-09	4.7E-09	1.5E-09	7.5E-13		4.7E-09	4.6E-07	1.7E-11	4.6E-07		5.8E-11	5.8E-11	2.7E-09	2.1E-10	1.6E-14	2.9E-09	2.8E-09	3.8E-10	1.7E-13		2.8E-09	1.2E-07	5.1E-12	1.2E-07		1.7E-11	1.7E-11
VOC	Chloromethane	74-87-3																														
VOC	Ethyl Benzene	100-41-4	9.8E-09	7.8E-09	9.0E-08	1.1E-07	9.4E-09	1.2E-08	3.3E-07		3.3E-07	2.2E-06	1.3E-04	1.3E-04	2.2E-06	2.5E-05	2.5E-05	5.5E-09	1.7E-09	1.2E-08	2.0E-08	5.6E-09	3.1E-09	7.6E-08		7.6E-08	6.1E-07	3.9E-05	3.9E-05	6.1E-07	7.3E-06	7.3E-06
VOC	Methylene Chloride	75-09-2	5.8E-09	7.6E-10	1.0E-10	6.7E-09	5.6E-09	1.2E-09	3.7E-10		5.6E-09	2.2E-07	1.6E-08	2.2E-07	6.6E-11	1.2E-09	1.2E-09	3.3E-09	1.6E-10	1.4E-11	3.5E-09	3.4E-09	3.0E-10	8.6E-11		3.4E-09	6.1E-08	4.6E-09	6.1E-08	1.8E-11	3.4E-10	3.4E-10
VOC	Styrene	100-42-5	1.5E-09	5.0E-10	9.7E-09	1.2E-08	1.4E-09	7.9E-10	3.6E-08		3.6E-08	1.7E-07	1.8E-06	1.8E-06		1.3E-07	1.3E-07	8.5E-10	1.1E-10	1.3E-09	2.3E-09	8.6E-10	2.0E-10	8.2E-09		8.2E-09	4.6E-08	5.3E-07	5.3E-07		3.9E-08	3.9E-08
VOC	Tetrachloroethene	127-18-4	1.2E-08	6.5E-09	1.6E-07	1.8E-07	1.2E-08	1.0E-08	6.0E-07		6.0E-07	2.9E-06	2.7E-04	2.7E-04	2.9E-06	4.6E-06	4.6E-06	6.9E-09	1.4E-09	2.3E-08	3.1E-08	7.1E-09	2.6E-09	1.4E-07		1.4E-07	7.8E-07	7.8E-05	7.8E-05	7.8E-07	1.3E-06	1.3E-06
VOC	Tetrahydrofuran	109-99-9																														
VOC	Toluene	108-88-3	2.0E-07	3.4E-08	5.9E-07	8.3E-07	2.0E-07	5.4E-08	2.2E-06		2.2E-06	4.3E-06	7.5E-04	7.5E-04	4.3E-06	1.1E-04	1.1E-04	1.1E-07	7.4E-09	8.2E-08	2.0E-07	1.2E-07	1.3E-08	5.0E-07		5.0E-07	1.2E-06	2.2E-04	2.2E-04	1.2E-06	3.2E-05	3.2E-05
VOC	Trichloroethene	79-01-6	5.7E-09	2.8E-09	6.7E-08	7.6E-08	5.5E-09	4.4E-09	2.5E-07		2.5E-07	1.2E-06	1.1E-04	1.1E-04	1.2E-06	9.9E-07	1.2E-06	3.2E-09	6.0E-10	9.3E-09	1.3E-08	3.3E-09	1.1E-09	5.7E-08		5.7E-08	3.1E-07	3.2E-05	3.2E-05	3.1E-07	2.9E-07	3.1E-07
VOC	Vinyl Chloride	75-01-4		5.6E-12		5.6E-12		8.8E-12			8.8E-12	3.6E-10	7.0E-11	3.6E-10					1.2E-12		1.2E-12		2.2E-12			2.2E-12	9.8E-11	2.0E-11	9.8E-11			
VOC	Xylenes (total)	1330-20-7	4.7E-08	7.0E-08	4.9E-07	6.0E-07	4.5E-08	1.1E-07	1.8E-06		1.8E-06	1.2E-05	5.8E-04	5.8E-04	1.2E-05	1.3E-04	1.3E-04	2.6E-08	1.5E-08	6.8E-08	1.1E-07	2.7E-08	2.8E-08	4.1E-07		4.1E-07	3.2E-06	1.7E-04	1.7E-04	3.2E-06	3.9E-05	3.9E-05
VOC	cis-1,2-Dichloroethene	156-59-2	2.0E-08	1.2E-11	8.3E-13	2.0E-08	1.9E-08	1.8E-11	3.0E-12		1.9E-08	7.6E-10	1.3E-10	7.6E-10	4.6E-10		4.6E-10	1.1E-08	2.5E-12	1.1E-13	1.1E-08	1.2E-08	4.6E-12	6.9E-13		1.2E-08	2.0E-10	3.7E-11	2.0E-10	1.2E-10		1.2E-10
VOC	m,p-xylene	6777-61-2	2.7E-08	5.4E-11	4.2E-09	3.1E-08	2.6E-08	8.6E-11	1.5E-08		2.6E-08	1.6E-08	7.0E-07	7.0E-07	1.1E-10		1.1E-10	1.5E-08	1.2E-11	5.8E-10	1.6E-08	1.5E-08	2.1E-11	3.5E-09		1.5E-08	4.4E-09	2.0E-07	2.0E-07	2.8E-11		2.8E-11
VOC	ortho-xylene	95-47-6	5.5E-09	2.8E-11	1.6E-09	7.1E-09	5.2E-09	4.4E-11	5.7E-09		5.7E-09	8.3E-09	3.9E-07	3.9E-07	4.0E-11	1.3E-10	1.3E-10	3.1E-09	6.0E-12	2.2E-10	3.3E-09	3.1E-09	1.1E-11	1.3E-09		3.1E-09	2.2E-09	1.1E-07	1.1E-07	1.1E-11	3.9E-11	3.9E-11
VOC	p-Cymene	99-87-6																														
VOC	trans-1,2-Dichloroethene	156-60-5																														
SVOC	1,2,4-Trichlorobenzene	120-82-1	7.2E-11	4.6E-10		5.3E-10	7.0E-11	7.2E-10			7.2E-10	3.3E-08		3.3E-08				4.0E-11	9.9E-11		1.4E-10	4.2E-11	1.8E-10			1.8E-10	8.9E-09		8.9E-09			
SVOC	1,2-Dichlorobenzene	95-50-1	2.5E-10	2.7E-09	9.8E-12	3.0E-09	2.5E-10	4.3E-09	5.5E-11		4.3E-09	6.9E-07	1.5E-09	6.9E-07	6.9E-07	3.4E-09	6.9E-07	1.4E-10	5.9E-10	1.4E-12	7.4E-10	1.5E-10	1.1E-09	1.3E-11		1.1E-09	1.9E-07	4.4E-10	1.9E-07	1.9E-07	1.0E-09	1.9E-07
SVOC	1,3-Dichlorobenzene	541-73-1	1.5E-11			1.5E-11	1.5E-11				1.5E-11							8.3E-12			8.3E-12	9.2E-12				9.2E-12						
SVOC	1,4-Dichlorobenzene	106-46-7	8.7E-11	4.6E-11	3.5E-12	1.4E-10	8.5E-11	7.3E-11	1.6E-11		8.5E-11	3.0E-09	5.4E-10	3.0E-09				4.9E-11	1.0E-11	4.9E-13	5.9E-11	5.1E-11	1.8E-11	3.6E-12		5.1E-11	8.1E-10	1.6E-10	8.1E-10			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																														
SVOC	2,4,5-Trichlorophenol	95-95-4							2.9E-11		2.9E-11					9.9E-10	9.9E-10							6.6E-12		6.6E-12					2.9E-10	2.9E-10
SVOC	2,4-Dichlorophenol	120-83-2	6.9E-11			6.9E-11	6.7E-11				6.7E-11							3.9E-11			3.9E-11	4.0E-11				4.0E-11						
SVOC	2,4-Dimethylphenol	105-67-9	1.8E-10	1.7E-09	7.2E-10	2.6E-09	1.7E-10	2.6E-09	2.8E-09		2.8E-09	2.9E-07	3.6E-07	3.6E-07	2.9E-07	2.8E-08	2.9E-07	1.0E-10	3.6E-10	1.0E-10	5.6E-10	1.0E-10	6.5E-10	6.4E-10		6.5E-10	7.8E-08	1.1E-07	1.1E-07	7.8E-08	8.3E-09	7.8E-08
SVOC	2,4-Dinitrotoluene	121-14-2			3.2E-11	3.2E-11			1.4E-10		1.4E-10		4.9E-09	4.9E-09						4.4E-12	4.4E-12			3.3E-11		3.3E-11		1.4E-09	1.4E-09			
SVOC	2,6-Dinitrotoluene	606-20-2		1.8E-10		1.8E-10		2.8E-10			2.8E-10	1.2E-08		1.2E-08					3.8E-11		3.8E-11		7.0E-11			7.0E-11	3.1E-09		3.1E-09			
SVOC	2-Chloronaphthalene	91-58-7																														
SVOC	2-Methylnaphthalene	91-57-6	1.2E-09	2.6E-08	2.2E-09	3.0E-08	1.2E-09	4.2E-08	8.7E-09	3.0E-13	4.2E-08	1.7E-06	1.2E-06	1.7E-06	1.9E-07	3.2E-07	3.2E-07	6.8E-10	5.7E-09	3.1E-10	6.7E-09	6.9E-10	1.0E-08	2.0E-09	2.4E-13	1.0E-08	4.6E-07	3.6E-07	4.6E-07	5.2E-08	9.5E-08	9.5E-08
SVOC	2-Methylphenol	95-48-7	1.9E-10	1.9E-09	4.1E-10	2.5E-09	1.8E-10	3.0E-09	1.6E-09		3.0E-09	4.0E-07	1.2E-07	4.0E-07	4.0E-07	2.7E-08	4.0E-07	1.0E-10	4.2E-10	5.7E-11	5.8E-10	1.1E-10	7.6E-10	3.8E-10		7.6E-10	1.1E-07	3.6E-08	1.1E-07	1.1E-07	8.0E-09	1.1E-07
SVOC	3,3'-Dichlorobenzidine	91-94-1					4.2E-12				4.2E-12											2.5E-12				2.5E-12						
SVOC	4-Bromophenyl-phenylether	101-55-3																														
SVOC	4-Chloro-3-methylphenol	59-50-7																														
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																														
SVOC	4-Methylphenol	106-44-5	2.1E-10	2.7E-09	3.8E-10	3.3E-09	2.0E-10	4.2E-09	1.5E-09		4.2E-09	5.9E-07	1.3E-07	5.9E-07	5.9E-07	2.7E-08	5.9E-07	1.2E-10	5.8E-10	5.3E-11	7.5E-10	1.2E-10	1.1E-09	3.5E-10		1.1E-09	1.6E-07	3.7E-08	1.6E-07	1.6E-07	7.8E-09	1.6E-07
SVOC	4-Nitrophenol	100-02-7			2.5E-12	2.5E-12			1.1E-11		1.1E-11		3.8E-10	3.8E-10						3.4E-13	3.4E-13			2.6E-12		2.6E-12		1.1E-10	1.1E-10			
SVOC	Acenaphthene	83-32-9	1.8E-10	7.6E-10	2.7E-11	9.7E-10	1.8E-10	1.2E-09	1.1E-10		1.2E-09	5.0E-08	4.1E-09	5.0E-08		2.1E-09	2.1E-09	1.0E-10	1.6E-10	3.7E-12	2.7E-10	1.1E-10	3.0E-10	2.5E-11		3.0E-10	1.3E-08	1.2E-09	1.3E-08		6.1E-10	6.1E-10
SVOC	Acenaphthylene	208-96-8	9.2E-11			9.2E-11	8.9E-11			2.7E-12	8.9E-11							5.2E-11			5.2E-11	5.4E-11			2.2E-12	5.4E-11						
SVOC	Anthracene	120-12-7	1.8E-11	6.6E-11	4.5E-11	1.3E-10	1.8E-11	1.0E-10	1.9E-10	2.4E-12	1.9E-10	4.3E-09	7.0E-09	7.0E-09		3.8E-09	3.8E-09	1.0E-11	1.4E-11	6.3E-12	3.1E-11	1.1E-11	2.6E-11	4.3E-11	2.0E-12	4.3E-11	1.2E-09	2.0E-09	2.0E-09		1.1E-09	1.1E-09
SVOC	Benzo(a)anthracene	56-55-3		1.4E-10	7.9E-11	2.2E-10	2.4E-13	2.2E-10	3.7E-10	3.5E-12	3.7E-10	8.9E-09	1.2E-08	1.2E-08		1.4E-08	1.4E-08		3.0E-11	1.1E-11	4.1E-11	1.4E-13	5.4E-11	8.4E-11	2.8E-12	8.4E-11	2.4E-09	3.6E-09	3.6E-09		4.1E-09	4.1E-09
SVOC	Benzo(a)pyrene	50-32-8		7.6E-11	5.3E-11	1.3E-10	3.3E-13	1.2E-10	2.4E-10	3.8E-12	2.4E-10	5.0E-09	8.1E-09	8.1E-09		8.1E-09	8.1E-09		1.6E-11	7.3E-12	2.4E-11	2.0E-13	3.0E-11	5.5E-11	3.1E-12	5.5E-11	1.3E-09	2.4E-09	2.4E-09		2.4E-09	2.4E-09
SVOC	Benzo(b)fluoranthene	205-99-2		2.7E-10	1.5E-10	4.2E-10	3.4E-13	4.2E-10	5.5E-10	4.2E-12	5.5E-10	1.7E-08	2.3E-08	2.3E-08		2.3E-08	2.3E-08		5.8E-11	2.0E-11	7.9E-11	2.1E-13	1.1E-10	1.3E-10	3.4E-12	1.3E-10	4.7E-09	6.6E-09	6.6E-09		6.6E-09	6.6E-09
SVOC	Benzo(g,h,i)perylene	191-24-2		7.6E-11	4.1E-11	1.2E-10		1.2E-10	1.9E-10	2.8E-12	1.9E-10	5.0E-09	6.4E-09	6.4E-09		6.4E-09	6.4E-09		1.6E-11	5.7E-12	2.2E-11		3.0E-11	4.3E-11	2.3E-12	4.3E-11	1.3E-09	1.9E-09	1.9E-09		1.9E-09	1.9E-09
SVOC	Benzo(k)fluoranthene	207-08-9		2.7E-10	1.5E-10	4.2E-10	2.9E-13	4.2E-10	5.5E-10	3.9E-12	5.5E-10	1.7E-08	2.3E-08	2.3E-08		2.3E-08	2.3E-08		5.8E-11	2.0E-11	7.9E-11	1.7E-13	1.1E-10	1.3E-10	3.2E-12	1.3E-10	4.7E-09	6.6E-09	6.6E-09		6.6E-09	6.6E-09
SVOC	Benzoic Acid	65-85-0	2.2E-10	6.1E-09	8.7E-09	1.5E-08	2.6E-10	9.6E-09	3.2E-08		3.2E-08	7.9E-07	1.3E-06	1.3E-06				1.2E-10	1.3E-09	1.2E-09	2.6E-09	1.6E-10	2.4E-09	7.4E-09		7.4E-09	2.1E-07	3.9E-07	3.9E-07			
SVOC	Benzyl Alcohol	100-51-6		1.3E-09		1.3E-09		2.1E-09			2.1E-09	1.1E-07		1.1E-07					2.9E-10		2.9E-10		5.3E-10			5.3E-10	3.0E-08		3.0E-08			
SVOC	Butylbenzylphthalate	85-68-7	2.1E-09	2.1E-08	1.3E-09	2.5E-08	2.0E-09	3.4E-08	5.1E-09		3.4E-08	1.4E-06	3.8E-07	1.4E-06		3.0E-07	3.0E-07	1.2E-09	4.6E-09	1.8E-10	6.0E-09	1.2E-09	8.4E-09	1.2E-09		8.4E-09	3.7E-07	1.1E-07	3.7E-07		8.7E-08	8.7E-08
SVOC	Carbazole	86-74-8								3.5E-13	3.5E-13														2.8E-13	2.8E-13						
SVOC	Chrysene	218-01-9		1.9E-10	6.0E-11	2.5E-10	3.0E-13	3.0E-10	2.6E-10	3.7E-12	3.0E-10	1.3E-08	9.3E-09	1.3E-08		7.5E-09	7.5E-09		4.2E-11	8.4E-12	5.0E-11	1.8E-13	7.6E-11	6.0E-11	3.0E-12	7.6E-11	3.4E-09	2.7E-09	3.4E-09		2.2E-09	2.2E-09
SVOC	Di-n-butylphthalate	84-74-2	1.4E-09	3.8E-09	2.5E-09	7.8E-09	1.4E-09	6.0E-09	9.6E-09	8.1E-13	9.6E-09	1.3E-06	1.4E-06	1.4E-06	2.8E-07	5.5E-07	5.5E-07	8.0E-10	8.3E-10	3.5E-10	2.0E-09	8.2E-10	1.5E-09	2.2E-09	6.5E-13	2.2E-09	3.5E-07	4.1E-07	4.1E-07	7.5E-08	1.6E-07	1.6E-07
SVOC	Di-n-octylphthalate	117-84-0	1.7E-10	6.6E-10	6.0E-10	1.4E-09	1.6E-10	1.0E-09	2.2E-09		2.2E-09	4.3E-08	2.2E-07	2.2E-07		2.2E-07	2.2E-07	9.4E-11	1.4E-10	8.3E-11	3.2E-10	9.7E-11	2.6E-10	5.0E-10		5.0E-10	1.2E-08	6.5E-08	6.5E-08		6.5E-08	6.5E-08
SVOC	Dibenzo(a,h)anthracene	53-70-3			1.0E-11	1.0E-11			4.6E-11	2.8E-12	4.6E-11	2.3E-10	1.6E-09	1.6E-09		1.6E-09	1.6E-09			1.4E-12	1.4E-12			1.1E-11	2.2E-12	1.1E-11	6.2E-11	4.6E-10	4.6E-10		4.6E-10	4.6E-10
SVOC	Dibenzofuran	132-64-9	7.0E-11	1.3E-10	2.4E-11	2.2E-10	6.9E-11	2.0E-10	1.0E-10		2.0E-10	8.3E-09	3.7E-09	8.3E-09		2.5E-09	2.5E-09	3.9E-11	2.7E-11	3.3E-12	7.0E-11	4.1E-11	5.0E-11	2.3E-11		5.0E-11	2.2E-09	1.1E-09	2.2E-09		7.3E-10	7.3E-10

Table B-7c (cont.): Particulate Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario: FUTURE

Location of Exposure:			AREA 5A				Area 5A												AREA 6								Area 6							
Type of Activity at Emission Location:			Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')			Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')		
Location of Emission:			From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max
C/Q (kg/m^3 per kg/m^2/s)			3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Diethylphthalate	84-66-2	2.6E-10	1.3E-09	1.9E-10	1.7E-09	2.5E-10	2.0E-09	6.9E-10		2.0E-09	2.1E-07	2.9E-08	2.1E-07		2.9E-08	2.9E-08	1.5E-10	2.7E-10	2.6E-11	4.4E-10	1.5E-10	4.9E-10	1.6E-10			4.9E-10	5.7E-08	8.5E-09	5.7E-08		8.5E-09	8.5E-09
SVOC	Dimethylphthalate	131-11-3	9.1E-10	1.3E-08	3.9E-10	1.4E-08	8.7E-10	2.1E-08	1.5E-09		2.1E-08	8.6E-07	9.3E-08	8.6E-07	3.6E-07	8.1E-09	3.6E-07	5.1E-10	2.9E-09	5.4E-11	3.4E-09	5.2E-10	5.2E-09	3.3E-10			5.2E-09	2.3E-07	2.7E-08	2.3E-07	9.8E-08	2.4E-09	9.8E-08
SVOC	Fluoranthene	206-44-0	6.4E-11	2.1E-10	2.3E-10	5.0E-10	6.1E-11	3.3E-10	9.5E-10	3.8E-12	9.5E-10	1.4E-08	3.5E-08	3.5E-08		2.0E-08	2.0E-08	3.6E-11	4.5E-11	3.2E-11	1.1E-10	3.7E-11	8.2E-11	2.2E-10	3.0E-12	2.2E-10	3.6E-09	1.0E-08	1.0E-08		5.8E-09	5.8E-09
SVOC	Fluorene	86-73-7	1.8E-10	9.0E-10	3.7E-11	1.1E-09	1.7E-10	1.4E-09	1.5E-10		1.4E-09	5.9E-08	5.7E-09	5.9E-08		3.6E-09	3.6E-09	9.9E-11	1.9E-10	5.1E-12	3.0E-10	1.0E-10	3.6E-10	3.5E-11			3.6E-10	1.6E-08	1.7E-09	1.6E-08		1.1E-09	1.1E-09
SVOC	Hexachlorobenzene	118-74-1					1.2E-13				1.2E-13	3.1E-09		3.1E-09								7.0E-14				7.0E-14	8.3E-10		8.3E-10			
SVOC	Hexachlorobutadiene	87-68-3	1.0E-10	6.9E-10		7.9E-10	9.8E-11	1.1E-09			1.1E-09	2.0E-07		2.0E-07				5.7E-11	1.5E-10		2.1E-10	5.9E-11	2.7E-10				2.7E-10	5.3E-08		5.3E-08			
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5		7.1E-11	3.1E-11	1.0E-10	1.8E-13	1.1E-10	1.4E-10	3.3E-12	1.4E-10	4.6E-09	4.8E-09	4.8E-09		4.8E-09	4.8E-09		1.5E-11	4.3E-12	2.0E-11	1.1E-13	2.8E-11	3.2E-11	2.6E-12	3.2E-11	1.2E-09	1.4E-09	1.4E-09		1.4E-09	1.4E-09
SVOC	Isophorone	78-59-1	3.6E-09	1.2E-08	2.3E-08	3.8E-08	3.4E-09	1.8E-08	8.4E-08	4.0E-13	8.4E-08	5.9E-06	2.1E-05	2.1E-05	6.9E-07	1.1E-06	1.1E-06	2.0E-09	2.5E-09	3.2E-09	7.7E-09	2.1E-09	4.6E-09	1.9E-08	3.2E-13	1.9E-08	1.6E-06	6.1E-06	6.1E-06	1.9E-07	3.2E-07	3.2E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7																															
SVOC	N-Nitrosodiphenylamine	86-30-6			7.1E-11	7.1E-11			4.0E-10		4.0E-10	2.3E-08	1.1E-08	2.3E-08		2.5E-08	2.5E-08			9.9E-12	9.9E-12			9.3E-11		9.3E-11	6.1E-09	3.2E-09	6.1E-09		7.3E-09	7.3E-09
SVOC	Naphthalene	91-20-3	1.9E-09	5.1E-09	4.8E-09	1.2E-08	1.9E-09	8.1E-09	1.8E-08	2.4E-13	1.8E-08	1.6E-06	3.9E-06	3.9E-06	4.6E-07	5.6E-07	5.6E-07	1.1E-09	1.1E-09	6.6E-10	2.9E-09	1.1E-09	2.0E-09	4.2E-09	1.9E-13	4.2E-09	4.4E-07	1.2E-06	1.2E-06	1.2E-07	1.6E-07	1.6E-07
SVOC	Pentachlorophenol	87-86-5	3.3E-10	2.3E-09	6.0E-10	3.3E-09	3.2E-10	3.7E-09	2.2E-09		3.7E-09	2.1E-07	9.3E-08	2.1E-07		8.7E-09	8.7E-09	1.8E-10	5.1E-10	8.4E-11	7.7E-10	1.9E-10	9.2E-10	5.1E-10			9.2E-10	5.6E-08	2.7E-08	5.6E-08		2.6E-09	2.6E-09
SVOC	Phenanthrene	85-01-8	1.5E-10	9.0E-10	2.4E-10	1.3E-09	1.5E-10	1.4E-09	9.8E-10	1.4E-12	1.4E-09	6.9E-08	3.7E-08	6.9E-08		2.5E-08	2.5E-08	8.5E-11	1.9E-10	3.3E-11	3.1E-10	8.7E-11	3.5E-10	2.2E-10	1.2E-12	3.5E-10	1.9E-08	1.1E-08	1.9E-08		7.3E-09	7.3E-09
SVOC	Phenol	108-95-2	3.5E-10	2.8E-09	7.7E-09	1.1E-08	3.4E-10	4.4E-09	2.8E-08		2.8E-08	5.6E-07	5.0E-06	5.0E-06	5.6E-07	1.6E-07	5.6E-07	2.0E-10	6.0E-10	1.1E-09	1.9E-09	2.0E-10	1.1E-09	6.5E-09		6.5E-09	1.5E-07	1.5E-06	1.5E-06	1.5E-07	4.8E-08	1.5E-07
SVOC	Pyrene	129-00-0	9.9E-11	4.1E-10	1.6E-10	6.6E-10	9.5E-11	6.4E-10	6.5E-10	3.7E-12	6.5E-10	2.6E-08	2.4E-08	2.6E-08		1.3E-08	1.3E-08	5.5E-11	8.8E-11	2.2E-11	1.7E-10	5.7E-11	1.6E-10	1.5E-10	3.0E-12	1.6E-10	7.1E-09	7.1E-09	7.1E-09		3.9E-09	3.9E-09
SVOC	bis(2-Chloroethyl) ether	111-44-4	1.7E-10	9.6E-10		1.1E-09	1.6E-10	1.5E-09			1.5E-09	3.6E-07		3.6E-07				9.5E-11	2.1E-10		3.0E-10	9.8E-11	3.8E-10			3.8E-10	9.8E-08		9.8E-08			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	5.5E-09	1.7E-08	5.8E-08	8.1E-08	5.3E-09	2.7E-08	2.2E-07	3.8E-11	2.2E-07	7.6E-06	5.2E-05	5.2E-05	7.9E-07	3.1E-06	3.1E-06	3.1E-09	3.8E-09	8.0E-09	1.5E-08	3.2E-09	6.9E-09	5.1E-08	3.1E-11	5.1E-08	2.0E-06	1.5E-05	1.5E-05	2.1E-07	9.2E-07	9.2E-07
P/PCB	4,4'-DDD	72-54-8	6.0E-11	7.4E-11		1.3E-10	5.8E-11	1.2E-10	2.6E-11	7.5E-13	1.2E-10	1.1E-08		1.1E-08		8.7E-10	8.7E-10	3.4E-11	1.6E-11		5.0E-11	3.5E-11	2.9E-11	5.9E-12	6.0E-13	3.5E-11	2.9E-09		2.9E-09		2.6E-10	2.6E-10
P/PCB	4,4'-DDE	72-55-9		4.5E-11		4.5E-11		7.0E-11		2.8E-12	7.0E-11	2.9E-09		2.9E-09					9.7E-12		9.7E-12		1.8E-11		2.2E-12	1.8E-11	7.8E-10		7.8E-10			
P/PCB	4,4'-DDT	50-29-3	8.0E-11	6.3E-11		1.4E-10	7.7E-11	1.0E-10		2.3E-12	1.0E-10	5.6E-09		5.6E-09				4.5E-11	1.4E-11		5.9E-11	4.6E-11	2.5E-11		1.8E-12	4.6E-11	1.5E-09		1.5E-09			
P/PCB	Aldrin	309-00-2		3.1E-10		3.1E-10		4.8E-10			4.8E-10	2.5E-08		2.5E-08					6.6E-11		6.6E-11		1.2E-10			1.2E-10	6.9E-09		6.9E-09			
P/PCB	Aroclor-1242	3469-21-9	5.1E-10		1.1E-09	1.6E-09	4.9E-10		4.4E-09		4.4E-09	2.9E-08	1.6E-06	1.6E-06		1.6E-06	1.6E-06	2.9E-10		1.5E-10	4.4E-10	3.0E-10		1.0E-09		1.0E-09	7.7E-09	4.8E-07	4.8E-07		4.8E-07	4.8E-07
P/PCB	Aroclor-1248	2672-29-6	3.5E-10	2.5E-09	6.0E-10	3.5E-09	3.4E-10	4.0E-09	2.4E-09	2.1E-12	4.0E-09	1.1E-06	7.4E-07	1.1E-06	1.1E-06	7.4E-07	1.1E-06	2.0E-10	5.4E-10	8.3E-11	8.2E-10	2.0E-10	9.9E-10	5.5E-10	1.7E-12	9.9E-10	2.9E-07	2.2E-07	2.9E-07	2.9E-07	2.2E-07	2.9E-07
P/PCB	Aroclor-1254	1097-69-1	5.9E-10	1.8E-09	3.6E-10	2.8E-09	5.7E-10	2.9E-09	1.6E-09	8.4E-11	2.9E-09	1.2E-07	2.6E-07	2.6E-07	1.6E-08	1.3E-07	1.3E-07	3.3E-10	3.9E-10	5.0E-11	7.7E-10	3.4E-10	7.2E-10	3.7E-10	6.8E-11	7.2E-10	3.2E-08	7.5E-08	7.5E-08	4.2E-09	3.7E-08	3.7E-08
P/PCB	Aroclor-1260	1096-82-5	3.7E-10	1.7E-08	2.4E-10	1.8E-08	3.5E-10	2.8E-08	9.9E-10	9.3E-12	2.8E-08	1.1E-05	2.1E-07	1.1E-05	2.0E-07	2.1E-07	2.1E-07	2.1E-10	3.8E-09	3.4E-11	4.0E-09	2.1E-10	6.9E-09	2.3E-10	7.5E-12	6.9E-09	3.0E-06	6.1E-08	3.0E-06	5.5E-08	6.1E-08	6.1E-08
P/PCB	Dieldrin	60-57-1	4.0E-12			4.0E-12	3.9E-12				3.9E-12							2.3E-12			2.3E-12	2.4E-12				2.4E-12						
P/PCB	Endosulfan I	959-98-8	2.0E-11			2.0E-11	1.9E-11			3.7E-12	1.9E-11							1.1E-11			1.1E-11	1.2E-11			3.0E-12	1.2E-11						
P/PCB	Endosulfan sulfate	1031-07-8								5.8E-13	5.8E-13														4.6E-13	4.6E-13						
P/PCB	Endrin	72-20-8	2.7E-11			2.7E-11	2.6E-11			1.4E-12	2.6E-11							1.5E-11			1.5E-11	1.5E-11			1.2E-12	1.5E-11						
P/PCB	Endrin aldehyde	7421-93-4																															
P/PCB	Endrin ketone	3494-70-5					2.2E-13				2.2E-13											1.3E-13				1.3E-13						
P/PCB	Heptachlor	76-44-8							1.5E-11	6.0E-13	1.5E-11					5.1E-10	5.1E-10							3.4E-12	4.8E-13	3.4E-12				1.5E-10	1.5E-10
P/PCB	Heptachlor epoxide	1024-57-3							7.1E-12		7.1E-12					2.4E-10	2.4E-10							1.6E-12		1.6E-12				7.1E-11	7.1E-11
P/PCB	Methoxychlor	72-43-5								2.8E-12	2.8E-12														2.2E-12	2.2E-12						
P/PCB	alpha-BHC	319-84-6		1.7E-11		1.7E-11		2.6E-11			2.6E-11	1.1E-09		1.1E-09					3.6E-12		3.6E-12		6.6E-12			6.6E-12	2.9E-10		2.9E-10			
P/PCB	alpha-Chlordane	5103-71-9								2.1E-12	2.1E-12														1.7E-12	1.7E-12						
P/PCB	beta-BHC	319-85-7		3.2E-11		3.2E-11		5.0E-11		2.5E-13	5.0E-11	2.6E-09		2.6E-09					6.9E-12		6.9E-12		1.3E-11		2.0E-13	1.3E-11	7.1E-10		7.1E-10			
P/PCB	gamma-BHC	58-89-9								2.8E-13	2.8E-13														2.2E-13	2.2E-13						
P/PCB	gamma-Chlordane	5103-74-2	2.0E-11			2.0E-11	2.0E-11			4.6E-13	2.0E-11							1.1E-11			1.1E-11	1.2E-11			3.7E-13	1.2E-11						
INORG	Antimony	7440-36-0	2.7E-10	3.3E-09	5.7E-09	9.3E-09	2.6E-10	5.2E-09	2.3E-08		2.3E-08	5.4E-07	8.8E-07	8.8E-07	5.4E-07	4.9E-07	5.4E-07	1.5E-10	7.2E-10	7.9E-10	1.7E-09	1.6E-10	1.3E-09	5.3E-09			5.3E-09	1.5E-07	2.6E-07	2.6E-07	1.5E-07	1.4E-07	1.5E-07
INORG	Arsenic	7440-38-2	7.2E-11	2.5E-10	1.4E-10	4.6E-10	8.0E-11	3.9E-10	1.5E-09	7.3E-11	1.5E-09	2.6E-08	3.1E-08	3.1E-08	2.6E-08	1.8E-07	1.8E-07	4.0E-11	5.3E-11	1.9E-11	1.1E-10	4.8E-11	9.7E-11	3.5E-10	5.9E-11	3.5E-10	6.9E-09	9.2E-09	9.2E-09	6.9E-09	5.2E-08	5.2E-08
INORG	Barium	7440-39-3	3.9E-09	4.9E-08	9.1E-08	1.4E-07	4.3E-09	7.8E-08	4.1E-07		4.1E-07	8.9E-06	3.7E-05	3.7E-05	8.9E-06	3.3E-05	3.3E-05	2.2E-09	1.1E-08	1.3E-08	2.6E-08	2.6E-09	1.9E-08	9.5E-08			9.5E-08	2.4E-06	1.1E-05	1.1E-05	2.4E-06	9.7E-06	9.7E-06
INORG	Beryllium	7440-41-7	3.5E-12	1.6E-11	1.5E-11	3.4E-11	1.6E-11	2.5E-11	1.0E-10		1.0E-10	1.1E-09	4.6E-09	4.6E-09		8.7E-09	8.7E-09	1.9E-12	3.4E-12	2.0E-12	7.4E-12	9.5E-12	6.3E-12	2.4E-11			2.4E-11	3.0E-10	1.4E-09	1.4E-09		2.6E-09	2.6E-09
INORG	Cadmium	7440-43-9	2.4E-10	5.4E-09	1.6E-08	2.1E-08	2.4E-10	8.5E-09	6.2E-08	5.7E-11	6.2E-08	3.5E-07	9.9E-06	9.9E-06	3.5E-07	1.0E-06	1.0E-06	1.4E-10	1.2E-09	2.2E-09	3.5E-09	1.4E-10	2.1E-09	1.4E-08	4.5E-11	1.4E-08	9.4E-08	2.9E-06	2.9E-06	9.4E-08	3.0E-07	3.0E-07
INORG	Chromium 3+	6065-83-1	2.7E-09	6.4E-08	4.5E-08	1.1E-07	2.7E-09	1.0E-07	2.0E-07	2.7E-10	2.0E-07	4.2E-06	1.9E-05	1.9E-05	4.2E-06	1.5E-05	1.5E-05	1.5E-09	1.4E-08	6.3E-09	2.2E-08	1.6E-09	2.5E-08	4.6E-08	2.2E-10	4.6E-08	1.1E-06	5.5E-06	5.5E-06	1.1E-06	4.5E-06	4.5E-06
INORG	Chromium 6+	8540-29-9	4.5E-10	1.1E-08	7.5E-09	1.9E-08	4.5E-10	1.7E-08	3.3E-08	4.5E-11	3.3E-08	7.0E-07	3.1E-06	3.1E-06	7.0E-07	2.6E-06	2.6E-06	2.6E-10	2.3E-09	1.0E-09	3.6E-09	2.7E-10	4.2E-09	7.7E-09	3.6E-11	7.7E-09	1.9E-07	9.1E-07	9.1E-07	1.9E-07	7.5E-07	7.5E-07
INORG	Cobalt	7440-48-4	1.8E-10	7.2E-10	1.8E-09	2.7E-09	1.8E-10	1.1E-09	8.4E-09		8.4E-09	1.1E-07	8.6E-07	8.6E-07	1.1E-07	8.6E-07	8.6E-07	1.0E-10	1.6E-10	2.5E-10	5.0E-10	1.1E-10	2.8E-10	1.9E-09		1.9E-09	2.9E-08	2.5E-07	2.5E-07	2.9E-08	2.5E-07	2.5E-07
INORG	Copper	7440-50-8	1.1E-09	6.7E-08	7.4E-08	1.4E-07	1.1E-09	1.1E-07	3.1E-07	3.6E-10	3.1E-07	4.4E-06	3.4E-05	3.4E-05	4.4E-06	2.6E-05	2.6E-05	6.1E-10	1.4E-08	1.0E-08	2.5E-08	6.9E-10	2.6E-08	7.1E-08	2.8E-10	7.1E-08	1.2E-06	9.8E-06	9.8E-06	1.2E-06	7.6E-06	7.6E-06
INORG	Cyanide (total)	57-12-5	1.6E-10		1.1E-09	1.2E-09	1.6E-10		5.5E-09		5.5E-09		3.8E-07	3.8E-07		3.8E-07	3.8E-07	9.0E-11		1.5E-10	2.4E-10	9.3E-11		1.3E-09		1.3E-09		1.1E-07	1.1E-07		1.1E-07	1.1E-07
INORG	Lead	7439-92-1	1.4E-08	5.2E-07	2.5E-07	7.8E-07	1.4E-08	8.2E-07	1.3E-06	1.4E-09	1.3E-06	3.4E-05	1.0E-04	1.0E-04	3.4E-05	9.4E-05	9.4E-05	7.9E-09	1.1E-07	3.5E-08	1.5E-07	8.4E-09	2.0E-07	2.9E-07	1.1E-09	2.9E-07	9.1E-06	2.9E-05	2.9E-05	9.1E-06	2.8E-05	2.8E-05
INORG	Manganese	7439-96-5	6.1E-09	1.2E-08	2.5E-08	4.3E-08	1.1E-08	1.9E-08	1.4E-07		1.4E-07	1.3E-06	4.2E-06	4.2E-06	1.3E-06	8.9E-06	8.9E-06	3.4E-09	2.6E-09	3.4E-09	9.5E-09	6.5E-09	4.7E-09	3.3E-08		3.3E-08	3.6E-07	1.2E-06	1.2E-06	3.6E-07	2.6E-06	2.6E-06
INORG	Mercury	7439-97-6	3.8E-11	4.0E-10	3.9E-10	8.3E-10	5.2E-11	6.3E-10	1.7E-09	4.3E-12	1.7E-09	2.6E-08	2.1E-07	2.1E-07	2.6E-08	5.5E-08	5.5E-08	2.2E-11	8.6E-11	5.4E-11	1.6E-10	3.1E-11	1.6E-10	4.0E-10	3.5E-12	4.0E-10	7.0E-09	6.1E-08	6.1E-08	7.0E-09	1.6E-08	1.6E-08
INORG	Nickel	7440-02-0	1.4E-10	1.2E-09	2.1E-09	3.5E-09	1.7E-10	2.0E-09	9.3E-09		9.3E-09	1.8E-07	1.1E-06	1.1E-06	1.8E-07	1.1E-06	1.1E-06	8.1E-11	2.7E-10	2.9E-10	6.4E-10	1.0E-10	4.9E-10	2.1E-09		2.1E-09	4.7E-08	3.3E-07	3.3E-07	4.7E-08	3.3E-07	3.3E-07
INORG	Selenium	7782-49-2	1.0E-11	1.4E-10	1.4E-09	1.6E-09	1.1E-11	2.2E-10	5.7E-09		5.7E-09	2.7E-08	9.1E-07	9.1E-07	2.7E-08	1.0E-07	1.0E-07	5.7E-12	3.0E-11	2.0E-10	2.3E-10	6.8E-12	5.5E-11	1.3E-09		1.3E-09	7.4E-09	2.7E-07	2.7E-07	7.4E-09	2.9E-08	2.9E-08
INORG	Silver	7440-22-4		5.0E-10	3.0E-09	3.5E-09	5.8E-12	7.9E-10	1.1E-08		1.1E-08	1.2E-07	1.8E-06	1.8E-06	1.2E-07	1.4E-07	1.4E-07		1.1E-10	4.2E-10	5.3E-10	3.5E-12	2.0E-10	2.6E-09		2.6E-09	3.1E-08	5.3E-07	5.3E-07	3.1E-08	4.2E-08	4.2E-08
INORG	Thallium	7440-28-0		3.7E-11	3.0E-11	6.7E-11		5.8E-11	1.3E-10		1.3E-10	3.3E-09	8.7E-09	8.7E-09					7.9E-12	4.2E-12	1.2E-11		1.4E-11	3.0E-11		3.0E-11	8.9E-10	2.6E-09	2.6E-09			
INORG	Vanadium	7440-62-2	1.8E-10	4.9E-10	7.1E-10	1.4E-09	2.2E-10	7.7E-10	3.5E-09		3.5E-09	4.0E-08	2.8E-07	2.8E-07	4.0E-08	2.8E-07	2.8E-07	1.0E-10	1.1E-10	9.9E-11	3.1E-10	1.3E-10	1.9E-10	7.9E-10		7.9E-10	1.1E-08	8.1E-08	8.1E-08	1.1E-08	8.1E-08	8.1E-08
INORG	Zinc	7440-66-6	6.0E-09	1.7E-07	5.9E-07	7.7E-07	6.1E-09	2.7E-07	2.7E-06	2.9E-09	2.7E-06	2.7E-05	9.2E-05	9.2E-05	2.7E-05	9.2E-05	9.2E-05	3.4E-09	3.6E-08	8.3E-08	1.2E-07	3.7E-09	6.6E-08	6.1E-07	2.3E-09	6.1E-07	7.4E-06	2.7E-05	2.7E-05	7.4E-06	2.7E-05	2.7E-05
TIC	Acetaldehyde	75-07-0																															
TIC	Acetophenone	98-86-2																															
TIC	Butanol, 1-	71-36-3																															
TIC	Caprolactam	105-60-2																															
TIC	Chlorodifluoromethane	75-45-6																															
TIC	Cyclohexanone	108-94-1																															
TIC	Diethyl ether	60-29-7																															
TIC	Dioxane, 1,4-	123-91-1																															
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																															
TIC	Hexane, n-	110-54-3		7.6E-12		7.6E-12		1.2E-11			1.2E-11								1.6E-12		1.6E-12		3.0E-12			3.0E-12						
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																															
TIC	Phthalic anhydride	85-44-9	9.7E-11			9.7E-11	9.2E-11				9.2E-11							5.4E-11			5.4E-11	5.5E-11				5.5E-11						

Table B-8a: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Current Land Use
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		**CURRENT**					**CURRENT**					**CURRENT**					**CURRENT**					**CURRENT**				
	Location of Exposure:		**AREA 1**					**AREA 4A**					**AREA 4B**					**AREA 5**					**AREA 6**				
	Type of Activity at Emission Location:		Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped					Routine Industrial/Undeveloped					Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped				Excavatio
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	Area 1	From Area 1	From Area 2	From Area 3	Total At Area	Area 1
	C/Q (kg/m^3 per kg/m^2/s)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		3.2E-01	9.7E-01	7.2E-01		2.0E-04	1.8E-01	2.1E-01	1.0E-01		1.2E-04
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6		1.2E-04	9.1E-09	1.2E-04	3.3E-01		2.0E-05	2.3E-09	2.0E-05		4.5E-05	5.0E-09	4.5E-05		1.6E-04	7.9E-08	1.6E-04	1.2E-04		3.5E-05	1.1E-08	3.5E-05	7.2E-05
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.3E-07		1.3E-07	1.3E-04		2.2E-08		2.2E-08		5.0E-08		5.0E-08		1.8E-07		1.8E-07	4.8E-08		3.9E-08		3.9E-08	2.9E-08
VOC	1,1,2-Trichloroethane	79-00-5	4.0E-07			4.0E-07	6.1E-04	1.6E-08			1.6E-08	7.7E-08			7.7E-08	1.1E-08			1.1E-08	2.2E-07	6.1E-09			6.1E-09	1.3E-07
VOC	1,1-Dichloroethane	75-34-3		1.0E-04	8.6E-08	1.0E-04	4.7E-03		1.7E-05	2.2E-08	1.7E-05		3.9E-05	4.7E-08	3.9E-05		1.4E-04	7.4E-07	1.4E-04	1.7E-06		3.0E-05	1.0E-07	3.0E-05	1.0E-06
VOC	1,1-Dichloroethene	75-35-4																							
VOC	1,2,4-Trimethylbenzene	95-63-6																							
VOC	1,2-Dichloroethane	107-06-2		4.1E-05		4.1E-05	5.3E-03		6.9E-06		6.9E-06		1.5E-05		1.5E-05		5.6E-05		5.6E-05	1.9E-06		1.2E-05		1.2E-05	1.1E-06
VOC	1,2-Dichloroethene (total)	540-59-0	4.8E-07	1.7E-04	8.8E-06	1.8E-04	4.2E-02	1.9E-08	2.8E-05	2.2E-06	3.0E-05	9.3E-08	6.3E-05	4.9E-06	6.8E-05	1.3E-08	2.3E-04	7.6E-05	3.0E-04	1.5E-05	7.2E-09	4.9E-05	1.1E-05	6.0E-05	9.0E-06
VOC	1,2-Dichloropropane	78-87-5		4.1E-05	3.3E-08	4.1E-05	3.0E-03		6.8E-06	8.4E-09	6.8E-06		1.5E-05	1.8E-08	1.5E-05		5.5E-05	2.9E-07	5.5E-05	1.1E-06		1.2E-05	4.0E-08	1.2E-05	6.6E-07
VOC	1,3,5-Trimethylbenzene	108-67-8																							
VOC	2-Butanone	78-93-3																							
VOC	2-Hexanone	591-78-6		8.9E-04		8.9E-04			1.5E-04		1.5E-04		3.3E-04		3.3E-04		1.2E-03		1.2E-03			2.6E-04		2.6E-04	
VOC	4-Methyl-2-pentanone	108-10-1		1.1E-04		1.1E-04	1.1E-02		1.8E-05		1.8E-05		4.0E-05		4.0E-05		1.4E-04		1.4E-04	4.1E-06		3.1E-05		3.1E-05	2.5E-06
VOC	Acetone	67-64-1		1.5E-04	1.4E-08	1.5E-04	1.9E-02		2.5E-05	3.6E-09	2.5E-05		5.7E-05	8.0E-09	5.7E-05		2.1E-04	1.2E-07	2.1E-04	7.0E-06		4.5E-05	1.7E-08	4.5E-05	4.2E-06
VOC	Benzene	71-43-2		1.0E-04	2.5E-06	1.1E-04	5.9E-02		1.7E-05	6.4E-07	1.8E-05		3.9E-05	1.4E-06	4.1E-05		1.4E-04	2.2E-05	1.6E-04	2.1E-05		3.1E-05	3.0E-06	3.4E-05	1.3E-05
VOC	Bromodichloromethane	75-27-4																							
VOC	Carbon Disulfide	75-15-0	6.1E-08			6.1E-08	1.2E-06	2.4E-09			2.4E-09	1.2E-08			1.2E-08	1.6E-09			1.6E-09	4.2E-10	9.2E-10			9.2E-10	2.5E-10
VOC	Carbon Tetrachloride	56-23-5																							
VOC	Chlorobenzene	108-90-7			5.8E-06	5.8E-06	7.5E-04			1.5E-06	1.5E-06			3.2E-06	3.2E-06			5.1E-05	5.1E-05	2.7E-07			7.0E-06	7.0E-06	1.6E-07
VOC	Chloroethane	75-00-3																							
VOC	Chloroform	67-66-3	8.3E-08	1.4E-04	8.8E-09	1.4E-04	5.5E-02	3.3E-09	2.4E-05	2.2E-09	2.4E-05	1.6E-08	5.4E-05	4.9E-09	5.4E-05	2.2E-09	1.9E-04	7.6E-08	1.9E-04	2.0E-05	1.2E-09	4.2E-05	1.1E-08	4.2E-05	1.2E-05
VOC	Chloromethane	74-87-3																							
VOC	Ethyl Benzene	100-41-4		6.0E-04	6.4E-05	6.7E-04	5.1E-02		1.0E-04	1.6E-05	1.2E-04		2.3E-04	3.5E-05	2.6E-04		8.1E-04	5.5E-04	1.4E-03	1.8E-05		1.8E-04	7.7E-05	2.5E-04	1.1E-05
VOC	Methylene Chloride	75-09-2		3.5E-04	5.5E-07	3.5E-04	7.5E-02		5.9E-05	1.4E-07	5.9E-05		1.3E-04	3.0E-07	1.3E-04		4.8E-04	4.7E-06	4.8E-04	2.7E-05		1.0E-04	6.6E-07	1.0E-04	1.6E-05
VOC	Styrene	100-42-5		2.2E-05	5.9E-06	2.8E-05	3.1E-03		3.7E-06	1.5E-06	5.1E-06		8.2E-06	3.3E-06	1.1E-05		3.0E-05	5.1E-05	8.0E-05	1.1E-06		6.4E-06	7.1E-06	1.3E-05	6.7E-07
VOC	Tetrachloroethene	127-18-4	1.5E-05	1.3E-03	3.0E-04	1.7E-03	6.6E-02	5.8E-07	2.2E-04	7.6E-05	3.0E-04	2.8E-06	5.0E-04	1.7E-04	6.7E-04	3.9E-07	1.8E-03	2.6E-03	4.4E-03	2.4E-05	2.2E-07	3.9E-04	3.6E-04	7.6E-04	1.4E-05
VOC	Tetrahydrofuran	109-99-9																							
VOC	Toluene	108-88-3	6.2E-06	6.7E-03	7.4E-04	7.5E-03	1.2E-01	2.4E-07	1.1E-03	1.9E-04	1.3E-03	1.2E-06	2.5E-03	4.1E-04	2.9E-03	1.7E-07	9.0E-03	6.4E-03	1.5E-02	4.4E-05	9.4E-08	2.0E-03	8.9E-04	2.8E-03	2.6E-05
VOC	Trichloroethene	79-01-6	2.5E-06	4.0E-04	8.4E-05	4.9E-04	5.0E-02	1.0E-07	6.7E-05	2.1E-05	8.8E-05	4.9E-07	1.5E-04	4.7E-05	2.0E-04	6.8E-08	5.4E-04	7.3E-04	1.3E-03	1.8E-05	3.8E-08	1.2E-04	1.0E-04	2.2E-04	1.1E-05
VOC	Vinyl Chloride	75-01-4		5.5E-06		5.5E-06			9.1E-07		9.1E-07		2.1E-06		2.1E-06		7.4E-06		7.4E-06			1.6E-06		1.6E-06	
VOC	Xylenes (total)	1330-20-7	1.5E-04	3.7E-03	4.3E-04	4.3E-03	5.5E-02	5.9E-06	6.2E-04	1.1E-04	7.3E-04	2.9E-05	1.4E-03	2.4E-04	1.7E-03	4.0E-06	5.0E-03	3.7E-03	8.7E-03	2.0E-05	2.3E-06	1.1E-03	5.2E-04	1.6E-03	1.2E-05
VOC	cis-1,2-Dichloroethene	156-59-2		1.6E-06		1.6E-06	2.1E-01		2.7E-07		2.7E-07		6.1E-07		6.1E-07		2.2E-06		2.2E-06	7.5E-05		4.7E-07		4.7E-07	4.5E-05
VOC	m,p-xylene	6777-61-2		9.4E-06		9.4E-06	5.7E-02		1.6E-06		1.6E-06		3.5E-06		3.5E-06		1.3E-05		1.3E-05	2.0E-05		2.7E-06		2.7E-06	1.2E-05
VOC	ortho-xylene	95-47-6		4.5E-06		4.5E-06	2.5E-02		7.5E-07		7.5E-07		1.7E-06		1.7E-06		6.1E-06		6.1E-06	8.9E-06		1.3E-06		1.3E-06	5.3E-06
VOC	p-Cymene	99-87-6																							
VOC	trans-1,2-Dichloroethene	156-60-5																							
SVOC	1,2,4-Trichlorobenzene	120-82-1		9.6E-06		9.6E-06	4.7E-05		1.6E-06		1.6E-06		3.6E-06		3.6E-06		1.3E-05		1.3E-05	1.7E-08		2.8E-06		2.8E-06	1.0E-08
SVOC	1,2-Dichlorobenzene	95-50-1		1.9E-04	2.3E-07	1.9E-04	4.8E-04		3.1E-05	5.9E-08	3.1E-05		7.0E-05	1.3E-07	7.0E-05		2.5E-04	2.0E-06	2.5E-04	1.7E-07		5.4E-05	2.8E-07	5.5E-05	1.0E-07
SVOC	1,3-Dichlorobenzene	541-73-1																							
SVOC	1,4-Dichlorobenzene	106-46-7		3.6E-06		3.6E-06	1.9E-04		5.9E-07		5.9E-07		1.3E-06		1.3E-06		4.8E-06		4.8E-06	6.8E-08		1.0E-06		1.0E-06	4.1E-08
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																							
SVOC	2,4,5-Trichlorophenol	95-95-4			2.2E-09	2.2E-09				5.5E-10	5.5E-10			1.2E-09	1.2E-09			1.9E-08	1.9E-08				2.6E-09	2.6E-09	
SVOC	2,4-Dichlorophenol	120-83-2					1.4E-05													5.1E-09					3.1E-09
SVOC	2,4-Dimethylphenol	105-67-9		6.1E-06	1.0E-07	6.2E-06	3.1E-05		1.0E-06	2.7E-08	1.0E-06		2.3E-06	5.8E-08	2.3E-06		8.2E-06	9.1E-07	9.1E-06	1.1E-08		1.8E-06	1.3E-07	1.9E-06	6.8E-09
SVOC	2,4-Dinitrotoluene	121-14-2																							
SVOC	2,6-Dinitrotoluene	606-20-2		9.8E-07		9.8E-07			1.6E-07		1.6E-07		3.7E-07		3.7E-07		1.3E-06		1.3E-06			2.9E-07		2.9E-07	
SVOC	2-Chloronaphthalene	91-58-7																							
SVOC	2-Methylnaphthalene	91-57-6	1.9E-05	2.0E-05	2.3E-06	4.1E-05	2.8E-04	7.3E-07	3.4E-06	5.9E-07	4.7E-06	3.6E-06	7.6E-06	1.3E-06	1.2E-05	5.0E-07	2.7E-05	2.0E-05	4.8E-05	1.0E-07	2.8E-07	5.9E-06	2.8E-06	9.0E-06	6.0E-08
SVOC	2-Methylphenol	95-48-7		1.7E-05	2.4E-07	1.7E-05	4.5E-05		2.8E-06	6.0E-08	2.8E-06		6.3E-06	1.3E-07	6.4E-06		2.2E-05	2.1E-06	2.5E-05	1.6E-08		4.9E-06	2.9E-07	5.1E-06	9.8E-09
SVOC	3,3'-Dichlorobenzidine	91-94-1																							
SVOC	4-Bromophenyl-phenylether	101-55-3																							
SVOC	4-Chloro-3-methylphenol	59-50-7																							
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																							
SVOC	4-Methylphenol	106-44-5		6.1E-05	6.1E-07	6.2E-05	1.3E-04		1.0E-05	1.6E-07	1.0E-05		2.3E-05	3.4E-07	2.3E-05		8.3E-05	5.3E-06	8.8E-05	4.8E-08		1.8E-05	7.4E-07	1.9E-05	2.9E-08
SVOC	4-Nitrophenol	100-02-7																							
SVOC	Acenaphthene	83-32-9		3.5E-06	9.7E-09	3.5E-06	2.4E-05		5.8E-07	2.4E-09	5.9E-07		1.3E-06	5.4E-09	1.3E-06		4.7E-06	8.4E-08	4.8E-06	8.5E-09		1.0E-06	1.2E-08	1.0E-06	5.1E-09
SVOC	Acenaphthylene	208-96-8	1.1E-06			1.1E-06	9.1E-06	4.3E-08			4.3E-08	2.1E-07			2.1E-07	2.9E-08			2.9E-08	3.3E-09	1.6E-08			1.6E-08	2.0E-09
SVOC	Anthracene	120-12-7	1.0E-07	8.7E-08	5.1E-09	1.9E-07	6.9E-07	3.9E-09	1.5E-08	1.3E-09	2.0E-08	1.9E-08	3.3E-08	2.8E-09	5.5E-08	2.7E-09	1.2E-07	4.4E-08	1.6E-07	2.5E-10	1.5E-09	2.6E-08	6.2E-09	3.3E-08	1.5E-10
SVOC	Benzo(a)anthracene	56-55-3																							
SVOC	Benzo(a)pyrene	50-32-8																							
SVOC	Benzo(b)fluoranthene	205-99-2																							
SVOC	Benzo(g,h,i)perylene	191-24-2																							
SVOC	Benzo(k)fluoranthene	207-08-9																							
SVOC	Benzoic Acid	65-85-0		1.6E-04		1.6E-04	2.0E-04		2.6E-05		2.6E-05		6.0E-05		6.0E-05		2.1E-04		2.1E-04	7.1E-08		4.6E-05		4.6E-05	4.3E-08
SVOC	Benzyl Alcohol	100-51-6																							
SVOC	Butylbenzylphthalate	85-68-7																							
SVOC	Carbazole	86-74-8																							
SVOC	Chrysene	218-01-9																							
SVOC	Di-n-butylphthalate	84-74-2																							
SVOC	Di-n-octylphthalate	117-84-0																							
SVOC	Dibenzo(a,h)anthracene	53-70-3																							
SVOC	Dibenzofuran	132-64-9																							
SVOC	Diethylphthalate	84-66-2																							

Table B-8a: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Current Land Use
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		CURRENT					CURRENT					CURRENT					CURRENT					CURRENT				
	Location of Exposure:		AREA 1					AREA 4A					AREA 4B					AREA 5					AREA 6				
	Type of Activity at Emission Location:		Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped					Routine Industrial/Undeveloped					Routine Industrial/Undeveloped				Excavatio	Routine Industrial/Undeveloped				Excavatio
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area		From Area 1	From Area 2	From Area 3	Total At Area		From Area 1	From Area 2	From Area 3	Total At Area	Area 1	From Area 1	From Area 2	From Area 3	Total At Area	Area 1
	C/Q (kg/m^3 per $kg/m^2/s$)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	4.7E-01	1.2E-01	2.1E-02			2.3E+00	2.7E-01	4.6E-02			3.2E-01	9.7E-01	7.2E-01		2.0E-04	1.8E-01	2.1E-01	1.0E-01		1.2E-04
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Dimethylphthalate	131-11-3																								
SVOC	Fluoranthene	206-44-0																								
SVOC	Fluorene	86-73-7		1.8E-06	7.2E-09	1.8E-06	9.9E-06		3.0E-07	1.8E-09	3.1E-07			6.8E-07	4.0E-09	6.9E-07			2.5E-06	6.3E-08	2.5E-06	3.6E-09		5.3E-07	8.7E-09	5.4E-07	2.1E-09
SVOC	Hexachlorobenzene	118-74-1																								
SVOC	Hexachlorobutadiene	87-68-3																								
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5																								
SVOC	Isophorone	78-59-1	1.8E-06	1.8E-04	3.6E-06	1.9E-04	1.6E-03	7.2E-08	3.0E-05	9.2E-07	3.1E-05		3.5E-07	6.8E-05	2.0E-06	7.1E-05		4.9E-08	2.4E-04	3.2E-05	2.8E-04	5.6E-07	2.8E-08	5.3E-05	4.4E-06	5.7E-05	3.4E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7																								
SVOC	N-Nitrosodiphenylamine	86-30-6			6.1E-08	6.1E-08				1.6E-08	1.6E-08				3.4E-08	3.4E-08				5.3E-07	5.3E-07				7.4E-08	7.4E-08	
SVOC	Naphthalene	91-20-3		9.1E-05	2.9E-06	9.4E-05	9.5E-04		1.5E-05	7.4E-07	1.6E-05			3.4E-05	1.6E-06	3.6E-05			1.2E-04	2.5E-05	1.5E-04	3.4E-07		2.7E-05	3.5E-06	3.0E-05	2.1E-07
SVOC	Pentachlorophenol	87-86-5																								
SVOC	Phenanthrene	85-01-8																								
SVOC	Phenol	108-95-2		3.7E-05	5.0E-07	3.8E-05	1.3E-04		6.2E-06	1.3E-07	6.3E-06			1.4E-05	2.8E-07	1.4E-05			5.0E-05	4.3E-06	5.4E-05	4.7E-08		1.1E-05	6.0E-07	1.1E-05	2.8E-08
SVOC	Pyrene	129-00-0																								
SVOC	bis(2-Chloroethyl) ether	111-44-4		3.4E-05		3.4E-05	1.7E-04		5.7E-06		5.7E-06			1.3E-05		1.3E-05			4.6E-05		4.6E-05	6.1E-08		1.0E-05		1.0E-05	3.7E-08
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7																								
P/PCB	4,4'-DDD	72-54-8																								
P/PCB	4,4'-DDE	72-55-9																								
P/PCB	4,4'-DDT	50-29-3																								
P/PCB	Aldrin	309-00-2																								
P/PCB	Aroclor-1242	3469-21-9																								
P/PCB	Aroclor-1248	2672-29-6																								
P/PCB	Aroclor-1254	1097-69-1																								
P/PCB	Aroclor-1260	1096-82-5																								
P/PCB	Dieldrin	60-57-1																								
P/PCB	Endosulfan I	959-98-8																								
P/PCB	Endosulfan sulfate	1031-07-8																								
P/PCB	Endrin	72-20-8																								
P/PCB	Endrin aldehyde	7421-93-4																								
P/PCB	Endrin ketone	3494-70-5																								
P/PCB	Heptachlor	76-44-8																								
P/PCB	Heptachlor epoxide	1024-57-3																								
P/PCB	Methoxychlor	72-43-5																								
P/PCB	alpha-BHC	319-84-6																								
P/PCB	alpha-Chlordane	5103-71-9																								
P/PCB	beta-BHC	319-85-7																								
P/PCB	gamma-BHC	58-89-9																								
P/PCB	gamma-Chlordane	5103-74-2																								
INORG	Antimony	7440-36-0																								
INORG	Arsenic	7440-38-2																								
INORG	Barium	7440-39-3																								
INORG	Beryllium	7440-41-7																								
INORG	Cadmium	7440-43-9																								
INORG	Chromium 3+	6065-83-1																								
INORG	Chromium 6+	8540-29-9																								
INORG	Cobalt	7440-48-4																								
INORG	Copper	7440-50-8																								
INORG	Cyanide (total)	57-12-5																								
INORG	Lead	7439-92-1																								
INORG	Manganese	7439-96-5																								
INORG	Mercury	7439-97-6																								
INORG	Nickel	7440-02-0																								
INORG	Selenium	7782-49-2																								
INORG	Silver	7440-22-4																								
INORG	Thallium	7440-28-0																								
INORG	Vanadium	7440-62-2																								
INORG	Zinc	7440-66-6																								
TIC	Acetaldehyde	75-07-0																								
TIC	Acetophenone	98-86-2																								
TIC	Butanol, 1-	71-36-3																								
TIC	Caprolactam	105-60-2																								
TIC	Chlorodifluoromethane	75-45-6																								
TIC	Cyclohexanone	108-94-1																								
TIC	Diethyl ether	60-29-7																								
TIC	Dioxane, 1,4-	123-91-1																								
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																								
TIC	Hexane, n-	110-54-3																								
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																								
TIC	Phthalic anhydride	85-44-9																								

Table B-8b: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:	FUTURE						FUTURE							FUTURE								FUTURE					FUTURE							
	Location of Exposure:		AREA 1						AREA 2							AREA 3							AREA 4A					AREA 4B							
	Type of Activity at Emission Location:		Routine Industrial			Excavatio			Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavatio		Routine Industrial			Excavatio				
	Location of Emission:	From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area							
	C/Q (kg/m^3 per kg/m^2/s)	1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01						
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6		1.2E-04	9.1E-09	1.2E-04	3.3E-01		2.0E-03	6.0E-08	2.0E-03	3.8E-03	4.4E-03	1.0E-05		2.7E-04	1.3E-06	2.7E-04	1.6E-01	1.8E-01	2.9E-06		2.0E-05	2.3E-09	2.0E-05		4.5E-05	5.0E-09	4.5E-05						
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.3E-07		1.3E-07	1.3E-04		2.2E-06		2.2E-06	1.5E-06	1.7E-06			2.9E-07		2.9E-07					2.2E-08		2.2E-08		5.0E-08		5.0E-08						
VOC	1,1,2-Trichloroethane	79-00-5	4.0E-07			4.0E-07	6.1E-04	2.8E-08			2.8E-08				9.4E-09			9.4E-09				1.6E-08		1.6E-08	7.7E-08			7.7E-08						
VOC	1,1-Dichloroethane	75-34-3		1.0E-04	8.6E-08	1.0E-04	4.7E-03		1.7E-03	5.7E-07	1.7E-03	3.2E-03	3.6E-03			2.3E-04	1.2E-05	2.4E-04	3.7E-04	4.2E-04	3.6E-05		1.7E-05	2.2E-08	1.7E-05		3.9E-05	4.7E-08	3.9E-05						
VOC	1,1-Dichloroethene	75-35-4												4.6E-06																					
VOC	1,2,4-Trimethylbenzene	95-63-6																																	
VOC	1,2-Dichloroethane	107-06-2		4.1E-05		4.1E-05	5.3E-03		6.9E-04		6.9E-04	1.1E-03	1.2E-03			9.2E-05		9.2E-05	1.2E-04	1.4E-04			6.9E-06		6.9E-06		1.5E-05		1.5E-05						
VOC	1,2-Dichloroethene (total)	540-59-0	4.8E-07	1.7E-04	8.8E-06	1.8E-04	4.2E-02	3.3E-08	2.8E-03	5.8E-05	2.9E-03	3.7E-03	4.2E-03		1.1E-08	3.7E-04	1.3E-03	1.6E-03	4.9E-03	5.6E-03	1.9E-03	1.9E-08	2.8E-05	2.2E-06	3.0E-05	9.3E-08	6.3E-05	4.9E-06	6.8E-05	2.6E-06					
VOC	1,2-Dichloropropane	78-87-5		4.1E-05	3.3E-08	4.1E-05	3.0E-03		6.8E-04	2.2E-07	6.8E-04	4.7E-04	5.3E-04			9.1E-05	4.8E-06	9.5E-05	7.7E-05	8.8E-05	3.8E-06		6.8E-06	8.4E-09	6.8E-06		1.5E-05	1.8E-08	1.5E-05						
VOC	1,3,5-Trimethylbenzene	108-67-8																																	
VOC	2-Butanone	78-93-3																																	
VOC	2-Hexanone	591-78-6		8.9E-04		8.9E-04			1.5E-02		1.5E-02	1.0E-02	1.2E-02	1.8E-02		2.0E-03		2.0E-03	1.3E-04	1.4E-04			1.5E-04		1.5E-04		3.3E-04		3.3E-04						
VOC	4-Methyl-2-pentanone	108-10-1		1.1E-04		1.1E-04	1.1E-02		1.8E-03		1.8E-03	2.8E-03	3.2E-03	5.8E-03		2.3E-04		2.3E-04	5.2E-02	5.9E-02	7.4E-03		1.8E-05		1.8E-05		4.0E-05		4.0E-05						
VOC	Acetone	67-64-1		1.5E-04	1.4E-08	1.5E-04	1.9E-02		2.5E-03	9.5E-08	2.5E-03	9.6E-03	1.1E-02	3.3E-02		3.4E-04	2.1E-06	3.4E-04	1.5E-01	1.8E-01	3.8E-05		2.5E-05	3.6E-09	2.5E-05		5.7E-05	8.0E-09	5.7E-05	1.5E-06					
VOC	Benzene	71-43-2		1.0E-04	2.5E-06	1.1E-04	5.9E-02		1.7E-03	1.7E-05	1.8E-03	3.5E-03	4.0E-03	5.7E-03		2.3E-04	3.6E-04	6.0E-04	2.7E-02	3.1E-02	8.3E-04		1.7E-05	6.4E-07	1.8E-05		3.9E-05	1.4E-06	4.1E-05						
VOC	Bromodichloromethane	75-27-4																																	
VOC	Carbon Disulfide	75-15-0	6.1E-08			6.1E-08	1.2E-06	4.2E-09			4.2E-09				1.4E-09			1.4E-09				2.4E-09		2.4E-09	1.2E-08			1.2E-08						
VOC	Carbon Tetrachloride	56-23-5																																	
VOC	Chlorobenzene	108-90-7			5.8E-06	5.8E-06	7.5E-04			3.9E-05	3.9E-05						8.5E-04	8.5E-04	7.9E-03	9.1E-03	6.6E-04			1.5E-06	1.5E-06			3.2E-06	3.2E-06						
VOC	Chloroethane	75-00-3																																	
VOC	Chloroform	67-66-3	8.3E-08	1.4E-04	8.8E-09	1.4E-04	5.5E-02	5.7E-09	2.4E-03	5.8E-08	2.4E-03	4.4E-03	5.1E-03		1.9E-09	3.2E-04	1.3E-06	3.2E-04	1.0E-06	1.2E-06	2.7E-06	3.3E-09	2.4E-05	2.2E-09	2.4E-05	1.6E-08	5.4E-05	4.9E-09	5.4E-05						
VOC	Chloromethane	74-87-3																																	
VOC	Ethyl Benzene	100-41-4		6.0E-04	6.4E-05	6.7E-04	5.1E-02		1.0E-02	4.2E-04	1.0E-02	1.7E-02	1.9E-02	3.7E-02		1.3E-03	9.2E-03	1.1E-02	5.5E-02	6.3E-02	6.3E-02		1.0E-04	1.6E-05	1.2E-04		2.3E-04	3.5E-05	2.6E-04						
VOC	Methylene Chloride	75-09-2		3.5E-04	5.5E-07	3.5E-04	7.5E-02		5.9E-03	3.6E-06	5.9E-03	4.0E-03	4.6E-03	6.2E-06		7.9E-04	7.9E-05	8.7E-04	5.9E-04	6.8E-04	3.5E-05		5.9E-05	1.4E-07	5.9E-05		1.3E-04	3.0E-07	1.3E-04						
VOC	Styrene	100-42-5		2.2E-05	5.9E-06	2.8E-05	3.1E-03		3.7E-04	3.9E-05	4.0E-04	4.3E-04	4.9E-04			4.9E-05	8.5E-04	9.0E-04	9.0E-03	1.0E-02	1.1E-03		3.7E-06	1.5E-06	5.1E-06		8.2E-06	3.3E-06	1.1E-05						
VOC	Tetrachloroethene	127-18-4	1.5E-05	1.3E-03	3.0E-04	1.7E-03	6.6E-02	1.0E-06	2.2E-02	2.0E-03	2.4E-02	3.1E-02	3.5E-02	7.5E-02	3.4E-07	3.0E-03	4.4E-02	4.7E-02	6.6E-02	7.5E-02	7.5E-02	5.8E-07	2.2E-04	7.6E-05	3.0E-04	2.8E-06	5.0E-04	1.7E-04	6.7E-04						
VOC	Tetrahydrofuran	109-99-9																																	
VOC	Toluene	108-88-3	6.2E-06	6.7E-03	7.4E-04	7.5E-03	1.2E-01	4.3E-07	1.1E-01	4.9E-03	1.2E-01	1.0E-01	1.1E-01	1.3E-01	1.5E-07	1.5E-02	1.1E-01	1.2E-01	1.2E-01	1.4E-01	1.4E-01	2.4E-07	1.1E-03	1.9E-04	1.3E-03	1.2E-06	2.5E-03	4.1E-04	2.9E-03						
VOC	Trichloroethene	79-01-6	2.5E-06	4.0E-04	8.4E-05	4.9E-04	5.0E-02	1.7E-07	6.7E-03	5.6E-04	7.3E-03	1.0E-02	1.2E-02	3.2E-02	5.9E-08	8.9E-04	1.2E-02	1.3E-02	2.7E-01	3.0E-01	2.0E-02	1.0E-07	6.7E-05	2.1E-05	8.8E-05	4.9E-07	1.5E-04	4.7E-05	2.0E-04						
VOC	Vinyl Chloride	75-01-4		5.5E-06		5.5E-06			9.1E-05		9.1E-05	8.1E-05	9.3E-05			1.2E-05		1.2E-05					9.1E-07		9.1E-07		2.1E-06		2.1E-06						
VOC	Xylenes (total)	1330-20-7	1.5E-04	3.7E-03	4.3E-04	4.3E-03	5.5E-02	1.0E-05	6.2E-02	2.8E-03	6.5E-02	5.5E-02	6.3E-02	6.3E-02	3.5E-06	8.3E-03	6.2E-02	7.0E-02	5.5E-02	6.3E-02	6.3E-02	5.9E-06	6.2E-04	1.1E-04	7.3E-04	2.9E-05	1.4E-03	2.4E-04	1.7E-03						
VOC	cis-1,2-Dichloroethene	156-59-2		1.6E-06		1.6E-06	2.1E-01		2.7E-05		2.7E-05	5.0E-05	5.7E-05	3.5E-05		3.6E-06		3.6E-06	3.8E-06	4.4E-06			2.7E-07		2.7E-07		6.1E-07		6.1E-07						
VOC	m,p-xylene	6777-61-2		9.4E-06		9.4E-06	5.7E-02		1.6E-04		1.6E-04	1.1E-04	1.2E-04	3.7E-06		2.1E-05		2.1E-05	8.8E-03	1.0E-02			1.6E-06		1.6E-06		3.5E-06		3.5E-06						
VOC	ortho-xylene	95-47-6		4.5E-06		4.5E-06	2.5E-02		7.5E-05		7.5E-05	5.1E-05	5.9E-05	1.3E-06		1.0E-05		1.0E-05	3.2E-03	3.7E-03	1.2E-06		7.5E-07		7.5E-07		1.7E-06		1.7E-06						
VOC	p-Cymene	99-87-6																																	
VOC	trans-1,2-Dichloroethene	156-60-5																																	
SVOC	1,2,4-Trichlorobenzene	120-82-1		9.6E-06		9.6E-06	4.7E-05		1.6E-04		1.6E-04	1.2E-04	1.4E-04			2.1E-05		2.1E-05					1.6E-06		1.6E-06		3.6E-06		3.6E-06						
SVOC	1,2-Dichlorobenzene	95-50-1		1.9E-04	2.3E-07	1.9E-04	4.8E-04		3.1E-03	1.6E-06	3.1E-03	2.1E-03	2.4E-03	9.5E-03		4.1E-04	3.4E-05	4.5E-04	1.3E-05	1.5E-05	1.8E-05		3.1E-05	5.9E-08	3.1E-05		7.0E-05	1.3E-07	7.0E-05						
SVOC	1,3-Dichlorobenzene	541-73-1																																	
SVOC	1,4-Dichlorobenzene	106-46-7		3.6E-06		3.6E-06	1.9E-04		5.9E-05		5.9E-05	4.1E-05	4.6E-05			7.9E-06		7.9E-06	4.1E-06	4.8E-06			5.9E-07		5.9E-07		1.3E-06		1.3E-06						
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																																	
SVOC	2,4,5-Trichlorophenol	95-95-4			2.2E-09	2.2E-09				1.4E-08	1.4E-08						3.1E-07	3.1E-07	2.1E-07	2.5E-07	2.5E-07			5.5E-10	5.5E-10			1.2E-09	1.2E-09						
SVOC	2,4-Dichlorophenol	120-83-2				1.4E-05																													
SVOC	2,4-Dimethylphenol	105-67-9		6.1E-06	1.0E-07	6.2E-06	3.1E-05		1.0E-04	7.0E-07	1.0E-04	1.2E-04	1.3E-04	3.6E-04		1.3E-05	1.5E-05	2.9E-05	5.9E-05	6.8E-05	2.0E-05		1.0E-06	2.7E-08	1.0E-06		2.3E-06	5.8E-08	2.3E-06						
SVOC	2,4-Dinitrotoluene	121-14-2																	3.4E-06	3.9E-06															
SVOC	2,6-Dinitrotoluene	606-20-2		9.8E-07		9.8E-07			1.6E-05		1.6E-05	1.7E-05	1.9E-05			2.2E-06		2.2E-06					1.6E-07		1.6E-07		3.7E-07		3.7E-07						
SVOC	2-Chloronaphthalene	91-58-7																																	
SVOC	2-Methylnaphthalene	91-57-6	1.9E-05	2.0E-05	2.3E-06	4.1E-05	2.8E-04	1.3E-06	3.4E-04	1.5E-05	3.5E-04	2.8E-04	3.2E-04	3.2E-04	4.3E-07	4.5E-05	3.4E-04	3.8E-04	2.8E-04	3.2E-04	3.2E-04	7.3E-07	3.4E-06	5.9E-07	4.7E-06	3.6E-06	7.6E-06	1.3E-06	1.2E-05	4.1E-06					
SVOC	2-Methylphenol	95-48-7		1.7E-05	2.4E-07	1.7E-05	4.5E-05		2.8E-04	1.6E-06	2.8E-04	1.9E-04	2.2E-04	6.9E-04		3.7E-05	3.4E-05	7.1E-05	4.9E-05	5.6E-05	2.7E-05		2.8E-06	6.0E-08	2.8E-06		6.3E-06	1.3E-07	6.4E-06						
SVOC	3,3'-Dichlorobenzidine	91-94-1																																	
SVOC	4-Bromophenyl-phenylether	101-55-3																																	
SVOC	4-Chloro-3-methylphenol	59-50-7																																	
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																																	
SVOC	4-Methylphenol	106-44-5		6.1E-05	6.1E-07	6.2E-05	1.3E-04		1.0E-03	4.1E-06	1.0E-03	7.0E-04	8.0E-04	2.7E-03		1.4E-04	8.9E-05	2.2E-04	1.2E-04	1.4E-04	3.7E-05		1.0E-05	1.6E-07	1.0E-05		2.3E-05	3.4E-07	2.3E-05						
SVOC	4-Nitrophenol	100-02-7																	2.3E-06	2.6E-06															
SVOC	Acenaphthene	83-32-9		3.5E-06	9.7E-09	3.5E-06	2.4E-05		5.8E-05	6.4E-08	5.8E-05	4.0E-05	4.6E-05			7.8E-06	1.4E-06	9.2E-06	1.7E-06	2.0E-06	1.1E-06		5.8E-07	2.4E-09	5.9E-07		1.3E-06	5.4E-09	1.3E-06						
SVOC	Acenaphthylene	208-96-8	1.1E-06			1.1E-06	9.1E-06	7.5E-08			7.5E-08				2.5E-08			2.5E-08				4.3E-08		4.3E-08	2.1E-07			2.1E-07	5.7E-07						
SVOC	Anthracene	120-12-7	1.0E-07	8.7E-08	5.1E-09	1.9E-07	6.9E-07	6.8E-09	1.5E-06	3.4E-08	1.5E-06	1.0E-06	1.1E-06		2.3E-09	1.9E-07	7.4E-07	9.4E-07	8.4E-07	9.6E-07	5.8E-07	3.9E-09	1.5E-08	1.3E-09	2.0E-08	1.9E-08	3.3E-08	2.8E-09	5.5E-08	2.0E-07					
SVOC	Benzo(a)anthracene	56-55-3																																	
SVOC	Benzo(a)pyrene	50-32-8																																	
SVOC	Benzo(b)fluoranthene	205-99-2																																	
SVOC	Benzo(g,h,i)perylene	191-24-2																																	
SVOC	Benzo(k)fluoranthene	207-08-9																																	
SVOC	Benzoic Acid	65-85-0		1.6E-04		1.6E-04	2.0E-04		2.6E-03		2.6E-03	1.8E-03	2.1E-03			3.5E-04		3.5E-04	2.9E-03	3.3E-03			2.6E-05		2.6E-05		6.0E-05		6.0E-05						
SVOC	Benzyl Alcohol	100-51-6																																	
SVOC	Butylbenzylphthalate	85-68-7																																	
SVOC	Carbazole	86-74-8																																	2.5E-08
SVOC	Chrysene	218-01-9																																	
SVOC	Di-n-butylphthalate	84-74-2																																	
SVOC	Di-n-octylphthalate	117-84-0																																	
SVOC	Dibenzo(a,h)anthracene	53-70-3																																	
SVOC	Dibenzofuran	132-64-9																																	

Table B-8b: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE						FUTURE						FUTURE						FUTURE						FUTURE				
	Location of Exposure:		AREA 1						AREA 2						AREA 3						AREA 4A						AREA 4B				
	Type of Activity at Emission Location:			Routine Industrial			Excavatio			Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial				Routine Industrial			Excavatio
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area
	C/Q (kg/m^3 per $kg/m^2/s$)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Diethylphthalate	84-66-2																													
SVOC	Dimethylphthalate	131-11-3																													
SVOC	Fluoranthene	206-44-0																													
SVOC	Fluorene	86-73-7		1.8E-06	7.2E-09	1.8E-06	9.9E-06		3.0E-05	4.8E-08	3.0E-05	2.1E-05	2.4E-05			4.0E-06	1.0E-06	5.1E-06	1.1E-06	1.2E-06	8.3E-07		3.0E-07	1.8E-09	3.1E-07		6.8E-07	4.0E-09	6.9E-07	
SVOC	Hexachlorobenzene	118-74-1																													
SVOC	Hexachlorobutadiene	87-68-3																													
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5																													
SVOC	Isophorone	78-59-1	1.8E-06	1.8E-04	3.6E-06	1.9E-04	1.6E-03	1.3E-07	3.0E-03	2.4E-05	3.1E-03	2.1E-03	2.4E-03	2.2E-03	4.3E-08	4.0E-04	5.3E-04	9.3E-04	4.4E-03	5.1E-03	1.2E-03	7.2E-08	3.0E-05	9.2E-07	3.1E-05	3.5E-07	6.8E-05	2.0E-06	7.1E-05	3.8E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7																													
SVOC	N-Nitrosodiphenylamine	86-30-6			6.1E-08	6.1E-08				4.1E-07	4.1E-07						8.9E-06	8.9E-06	3.4E-06	3.9E-06	5.0E-06			1.6E-08	1.6E-08			3.4E-08	3.4E-08	
SVOC	Naphthalene	91-20-3		9.1E-05	2.9E-06	9.4E-05	9.5E-04		1.5E-03	1.9E-05	1.5E-03	1.0E-03	1.2E-03	1.7E-03		2.0E-04	4.2E-04	6.2E-04	1.1E-03	1.3E-03	5.6E-04		1.5E-05	7.4E-07	1.6E-05		3.4E-05	1.6E-06	3.6E-05	2.6E-07
SVOC	Pentachlorophenol	87-86-5																													
SVOC	Phenanthrene	85-01-8																													
SVOC	Phenol	108-95-2		3.7E-05	5.0E-07	3.8E-05	1.3E-04		6.2E-04	3.3E-06	6.2E-04	4.3E-04	4.9E-04	1.5E-03		8.3E-05	7.2E-05	1.5E-04	1.3E-03	1.5E-03	1.3E-04		6.2E-06	1.3E-07	6.3E-06		1.4E-05	2.8E-07	1.4E-05	
SVOC	Pyrene	129-00-0																													
SVOC	bis(2-Chloroethyl) ether	111-44-4		3.4E-05		3.4E-05	1.7E-04		5.7E-04		5.7E-04	3.9E-04	4.5E-04			7.6E-05		7.6E-05					5.7E-06		5.7E-06		1.3E-05		1.3E-05	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7																													
P/PCB	4,4'-DDD	72-54-8																													
P/PCB	4,4'-DDE	72-55-9																													
P/PCB	4,4'-DDT	50-29-3																													
P/PCB	Aldrin	309-00-2																													
P/PCB	Aroclor-1242	3469-21-9																													
P/PCB	Aroclor-1248	2672-29-6																													
P/PCB	Aroclor-1254	1097-69-1																													
P/PCB	Aroclor-1260	1096-82-5																													
P/PCB	Dieldrin	60-57-1																													
P/PCB	Endosulfan I	959-98-8																													
P/PCB	Endosulfan sulfate	1031-07-8																													
P/PCB	Endrin	72-20-8																													
P/PCB	Endrin aldehyde	7421-93-4																													
P/PCB	Endrin ketone	3494-70-5																													
P/PCB	Heptachlor	76-44-8																													
P/PCB	Heptachlor epoxide	1024-57-3																													
P/PCB	Methoxychlor	72-43-5																													
P/PCB	alpha-BHC	319-84-6																													
P/PCB	alpha-Chlordane	5103-71-9																													
P/PCB	beta-BHC	319-85-7																													
P/PCB	gamma-BHC	58-89-9																													
P/PCB	gamma-Chlordane	5103-74-2																													
INORG	Antimony	7440-36-0																													
INORG	Arsenic	7440-38-2																													
INORG	Barium	7440-39-3																													
INORG	Beryllium	7440-41-7																													
INORG	Cadmium	7440-43-9																													
INORG	Chromium 3+	6065-83-1																													
INORG	Chromium 6+	8540-29-9																													
INORG	Cobalt	7440-48-4																													
INORG	Copper	7440-50-8																													
INORG	Cyanide (total)	57-12-5																													
INORG	Lead	7439-92-1																													
INORG	Manganese	7439-96-5																													
INORG	Mercury	7439-97-6																													
INORG	Nickel	7440-02-0																													
INORG	Selenium	7782-49-2																													
INORG	Silver	7440-22-4																													
INORG	Thallium	7440-28-0																													
INORG	Vanadium	7440-62-2																													
INORG	Zinc	7440-66-6																													
TIC	Acetaldehyde	75-07-0																													
TIC	Acetophenone	98-86-2																													
TIC	Butanol, 1-	71-36-3																													
TIC	Caprolactam	105-60-2																													
TIC	Chlorodifluoromethane	75-45-6																													
TIC	Cyclohexanone	108-94-1																													
TIC	Diethyl ether	60-29-7																													
TIC	Dioxane, 1,4-	123-91-1																													
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																													
TIC	Hexane, n-	110-54-3																													
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																													
TIC	Phthalic anhydride	85-44-9																													

Table B-8b: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario: FUTURE

Location of Exposure:	AREA 5A				Area 5A												AREA 6				Area 6									
Type of Activity at Emission Location:	Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')			Routine Industrial				Excavation					Construction (0-10')			Construction (0-4')		
	From	From	From	Total At	From Area	From Area	From Area	From Area		From Area	From Area			From Area	From Area		From Area	From	From	Total At	From Area	From Area	From Area	From Area		From Area	From Area		From Area	From Area	
Location of Emission:	Area 1	Area 2	Area 3	Area	1	2	3	4B	Max	2	3	Max		2	3	Max	1	Area 2	Area 3	Area	1	2	3	4B	Max	2	3	Max	2	3	Max
C/Q (kg/m^3 per $kg/m^2/s$):	3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02			3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	

Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6		1.6E-04	7.9E-08	1.6E-04	1.2E-04	5.5E-06	4.9E-04		4.9E-04	4.3E-05	3.2E-03	3.2E-03	9.9E-08	5.0E-08	9.9E-08		3.5E-05	1.1E-08	3.5E-05	7.2E-05	1.4E-06	1.1E-04		1.1E-04	1.2E-05	9.4E-04	9.4E-04	2.7E-08	1.5E-08	2.7E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5		1.8E-07		1.8E-07	4.8E-08	2.2E-09			4.8E-08	1.7E-08		1.7E-08					3.9E-08		3.9E-08	2.9E-08	5.5E-10			2.9E-08	4.6E-09		4.6E-09		
VOC	1,1,2-Trichloroethane	79-00-5	1.1E-08			1.1E-08	2.2E-07				2.2E-07							6.1E-09			6.1E-09	1.3E-07				1.3E-07					
VOC	1,1-Dichloroethane	75-34-3		1.4E-04	7.4E-07	1.4E-04	1.7E-06	4.6E-06	1.1E-06		4.6E-06	3.6E-05	7.3E-06	3.6E-05		6.3E-07	6.3E-07		3.0E-05	1.0E-07	3.0E-05	1.0E-06	1.1E-06	2.6E-07		1.1E-06	9.7E-06	2.1E-06	9.7E-06		1.8E-07	1.8E-07
VOC	1,1-Dichloroethene	75-35-4													4.6E-08		4.6E-08												1.2E-08		1.2E-08
VOC	1,2,4-Trimethylbenzene	95-63-6																													
VOC	1,2-Dichloroethane	107-06-2		5.6E-05		5.6E-05	1.9E-06	1.6E-06	3.7E-07		1.9E-06	1.2E-05	2.4E-06	1.2E-05					1.2E-05		1.2E-05	1.1E-06	3.9E-07	8.4E-08		1.1E-06	3.3E-06	7.0E-07	3.3E-06			
VOC	1,2-Dichloroethene (total)	540-59-0	1.3E-08	2.3E-04	7.6E-05	3.0E-04	1.5E-05	5.3E-06	1.5E-05	4.5E-10	1.5E-05	4.1E-05	9.7E-05	9.7E-05		3.3E-05	3.3E-05	7.2E-09	4.9E-05	1.1E-05	6.0E-05	9.0E-06	1.3E-06	3.4E-06	3.6E-10	9.0E-06	1.1E-05	2.8E-05	2.8E-05		9.7E-06	9.7E-06
VOC	1,2-Dichloropropane	78-87-5		5.5E-05	2.9E-07	5.5E-05	1.1E-06	6.7E-07	2.3E-07		1.1E-06	5.3E-06	1.5E-06	5.3E-06		6.5E-08	6.5E-08		1.2E-05	4.0E-08	1.2E-05	6.6E-07	1.7E-07	5.4E-08		6.6E-07	1.4E-06	4.5E-07	1.4E-06		1.9E-08	1.9E-08
VOC	1,3,5-Trimethylbenzene	108-67-8																													
VOC	2-Butanone	78-93-3																													
VOC	2-Hexanone	591-78-6		1.2E-03		1.2E-03		1.5E-05	3.8E-07		1.5E-05	1.2E-04	2.5E-06	1.2E-04	1.8E-04		1.8E-04		2.6E-04		2.6E-04		3.7E-06	8.8E-08		3.7E-06	3.1E-05	7.3E-07	3.1E-05	4.9E-05		4.9E-05
VOC	4-Methyl-2-pentanone	108-10-1		1.4E-04		1.4E-04	4.1E-06	4.0E-06	1.6E-04		1.6E-04	3.1E-05	1.0E-03	1.0E-03	5.8E-05	1.3E-04	1.3E-04		3.1E-05		3.1E-05	2.5E-06	1.0E-06	3.6E-05		3.6E-05	8.5E-06	3.0E-04	3.0E-04	1.6E-05	3.8E-05	3.8E-05
VOC	Acetone	67-64-1		2.1E-04	1.2E-07	2.1E-04	7.0E-06	1.4E-05	4.7E-04	2.6E-10	4.7E-04	1.1E-04	3.1E-03	3.1E-03	3.3E-04	6.6E-07	3.3E-04		4.5E-05	1.7E-08	4.5E-05	4.2E-06	3.5E-06	1.1E-04	2.1E-10	1.1E-04	2.9E-05	9.0E-04	9.0E-04	8.8E-05	1.9E-07	8.8E-05
VOC	Benzene	71-43-2		1.4E-04	2.2E-05	1.6E-04	2.1E-05	5.0E-06	8.4E-05		8.4E-05	3.9E-05	5.5E-04	5.5E-04	5.7E-05	1.4E-05	5.7E-05		3.1E-05	3.0E-06	3.4E-05	1.3E-05	1.3E-06	1.9E-05		1.9E-05	1.1E-05	1.6E-04	1.6E-04	1.5E-05	4.2E-06	1.5E-05
VOC	Bromodichloromethane	75-27-4																													
VOC	Carbon Disulfide	75-15-0	1.6E-09			1.6E-09	4.2E-10				4.2E-10							9.2E-10			9.2E-10	2.5E-10				2.5E-10					
VOC	Carbon Tetrachloride	56-23-5																													
VOC	Chlorobenzene	108-90-7			5.1E-05	5.1E-05	2.7E-07		2.4E-05		2.4E-05		1.6E-04	1.6E-04		1.2E-05	1.2E-05			7.0E-06	7.0E-06	1.6E-07		5.5E-06		5.5E-06		4.6E-05	4.6E-05		3.4E-06	3.4E-06
VOC	Chloroethane	75-00-3																													
VOC	Chloroform	67-66-3	2.2E-09	1.9E-04	7.6E-08	1.9E-04	2.0E-05	6.4E-06	3.2E-09		2.0E-05	5.0E-05	2.1E-08	5.0E-05		4.7E-08	4.7E-08	1.2E-09	4.2E-05	1.1E-08	4.2E-05	1.2E-05	1.6E-06	7.3E-10		1.2E-05	1.4E-05	6.0E-09	1.4E-05		1.4E-08	1.4E-08
VOC	Chloromethane	74-87-3																													
VOC	Ethyl Benzene	100-41-4		8.1E-04	5.5E-04	1.4E-03	1.8E-05	2.4E-05	1.7E-04		1.7E-04	1.9E-04	1.1E-03	1.1E-03	3.7E-04	1.1E-03	1.1E-03		1.8E-04	7.7E-05	2.5E-04	1.1E-05	6.0E-06	3.9E-05		3.9E-05	5.1E-05	3.2E-04	3.2E-04	9.9E-05	3.2E-04	3.2E-04
VOC	Methylene Chloride	75-09-2		4.8E-04	4.7E-06	4.8E-04	2.7E-05	5.8E-06	1.8E-06		2.7E-05	4.6E-05	1.2E-05	4.6E-05	6.1E-08	6.0E-07	6.0E-07		1.0E-04	6.6E-07	1.0E-04	1.6E-05	1.5E-06	4.2E-07		1.6E-05	1.2E-05	3.5E-06	1.2E-05	1.7E-08	1.8E-07	1.8E-07
VOC	Styrene	100-42-5		3.0E-05	5.1E-05	8.0E-05	1.1E-06	6.1E-07	2.8E-05		2.8E-05	4.8E-06	1.8E-04	1.8E-04		2.0E-05	2.0E-05		6.4E-06	7.1E-06	1.3E-05	6.7E-07	1.5E-07	6.3E-06		6.3E-06	1.3E-06	5.3E-05	5.3E-05		5.8E-06	5.8E-06
VOC	Tetrachloroethene	127-18-4	3.9E-07	1.8E-03	2.6E-03	4.4E-03	2.4E-05	4.4E-05	2.0E-04		2.0E-04	3.5E-04	1.3E-03	1.3E-03	7.5E-04	1.3E-03	1.3E-03	2.2E-07	3.9E-04	3.6E-04	7.6E-04	1.4E-05	1.1E-05	4.6E-05		4.6E-05	9.4E-05	3.8E-04	3.8E-04	2.0E-04	3.8E-04	3.8E-04
VOC	Tetrahydrofuran	109-99-9																													
VOC	Toluene	108-88-3	1.7E-07	9.0E-03	6.4E-03	1.5E-02	4.4E-05	1.4E-04	3.7E-04		3.7E-04	1.1E-03	2.4E-03	2.4E-03	1.3E-03	2.4E-03	2.4E-03	9.4E-08	2.0E-03	8.9E-04	2.8E-03	2.6E-05	3.6E-05	8.5E-05		8.5E-05	3.0E-04	7.1E-04	7.1E-04	3.4E-04	7.1E-04	7.1E-04
VOC	Trichloroethene	79-01-6	6.8E-08	5.4E-04	7.3E-04	1.3E-03	1.8E-05	1.5E-05	8.1E-04		8.1E-04	1.1E-04	5.3E-03	5.3E-03	3.1E-04	3.6E-04	3.6E-04	3.8E-08	1.2E-04	1.0E-04	2.2E-04	1.1E-05	3.6E-06	1.9E-04		1.9E-04	3.1E-05	1.6E-03	1.6E-03	8.4E-05	1.0E-04	1.0E-04
VOC	Vinyl Chloride	75-01-4		7.4E-06		7.4E-06		1.2E-07			1.2E-07	9.2E-07		9.2E-07					1.6E-06		1.6E-06		2.9E-08			2.9E-08	2.5E-07		2.5E-07			
VOC	Xylenes (total)	1330-20-7	4.0E-06	5.0E-03	3.7E-03	8.7E-03	2.0E-05	7.9E-05	1.7E-04		1.7E-04	6.3E-04	1.1E-03	1.1E-03	6.3E-04	1.1E-03	1.1E-03	2.3E-06	1.1E-03	5.2E-04	1.6E-03	1.2E-05	2.0E-05	3.9E-05		3.9E-05	1.7E-04	3.2E-04	3.2E-04	1.7E-04	3.2E-04	3.2E-04
VOC	cis-1,2-Dichloroethene	156-59-2		2.2E-06		2.2E-06	7.5E-05	7.2E-08	1.2E-08		7.5E-05	5.7E-07	7.6E-08	5.7E-07	3.5E-07		3.5E-07		4.7E-07		4.7E-07	4.5E-05	1.8E-08	2.7E-09		4.5E-05	1.5E-07	2.2E-08	1.5E-07	9.3E-08		9.3E-08
VOC	m,p-xylene	6777-61-2		1.3E-05		1.3E-05	2.0E-05	1.5E-07	2.7E-05		2.7E-05	1.2E-06	1.8E-04	1.8E-04	3.6E-08		3.6E-08		2.7E-06		2.7E-06	1.2E-05	3.9E-08	6.2E-06		1.2E-05	3.3E-07	5.2E-05	5.2E-05	9.8E-09		9.8E-09
VOC	ortho-xylene	95-47-6		6.1E-06		6.1E-06	8.9E-06	7.4E-08	9.8E-06		9.8E-06	5.8E-07	6.4E-05	6.4E-05	1.3E-08	2.2E-08	2.2E-08		1.3E-06		1.3E-06	5.3E-06	1.9E-08	2.2E-06		5.3E-06	1.6E-07	1.9E-05	1.9E-05	3.5E-09	6.4E-09	6.4E-09
VOC	p-Cymene	99-87-6																													
VOC	trans-1,2-Dichloroethene	156-60-5																													
SVOC	1,2,4-Trichlorobenzene	120-82-1		1.3E-05		1.3E-05	1.7E-08	1.7E-07			1.7E-07	1.4E-06		1.4E-06					2.8E-06		2.8E-06	1.0E-08	4.3E-08			4.3E-08	3.7E-07		3.7E-07		
SVOC	1,2-Dichlorobenzene	95-50-1		2.5E-04	2.0E-06	2.5E-04	1.7E-07	3.1E-06	3.9E-08		3.1E-06	2.4E-05	2.6E-07	2.4E-05	9.4E-05	3.1E-07	9.4E-05		5.4E-05	2.8E-07	5.5E-05	1.0E-07	7.7E-07	9.0E-09		7.7E-07	6.5E-06	7.5E-08	6.5E-06	2.5E-05	9.1E-08	2.5E-05
SVOC	1,3-Dichlorobenzene	541-73-1																													
SVOC	1,4-Dichlorobenzene	106-46-7		4.8E-06		4.8E-06	6.8E-08	5.8E-08	1.3E-08		6.8E-08	4.6E-07	8.3E-08	4.6E-07					1.0E-06		1.0E-06	4.1E-08	1.5E-08	2.9E-09		4.1E-08	1.2E-07	2.4E-08	1.2E-07			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																													
SVOC	2,4,5-Trichlorophenol	95-95-4			1.9E-08	1.9E-08			6.5E-10		6.5E-10		4.3E-09	4.3E-09		4.3E-09	4.3E-09			2.6E-09	2.6E-09			1.5E-10		1.5E-10		1.3E-09	1.3E-09		1.3E-09	1.3E-09
SVOC	2,4-Dichlorophenol	120-83-2					5.1E-09				5.1E-09											3.1E-09				3.1E-09					
SVOC	2,4-Dimethylphenol	105-67-9		8.2E-06	9.1E-07	9.1E-06	1.1E-08	1.7E-07	1.8E-07		1.8E-07	1.3E-06	1.2E-06	1.3E-06	3.6E-06	3.5E-07	3.6E-06		1.8E-06	1.3E-07	1.9E-06	6.8E-09	4.2E-08	4.1E-08		4.2E-08	3.6E-07	3.4E-07	3.6E-07	9.7E-07	1.0E-07	9.7E-07
SVOC	2,4-Dinitrotoluene	121-14-2							1.0E-08		1.0E-08		6.8E-08	6.8E-08										2.4E-09		2.4E-09		2.0E-08	2.0E-08			
SVOC	2,6-Dinitrotoluene	606-20-2		1.3E-06		1.3E-06		2.4E-08			2.4E-08	1.9E-07		1.9E-07					2.9E-07		2.9E-07		6.1E-09		6.1E-09	5.2E-08		5.2E-08			
SVOC	2-Chloronaphthalene	91-58-7																													
SVOC	2-Methylnaphthalene	91-57-6	5.0E-07	2.7E-05	2.0E-05	4.8E-05	1.0E-07	4.0E-07	8.5E-07	7.0E-10	8.5E-07	3.1E-06	5.5E-06	5.5E-06	3.1E-06	5.5E-06	5.5E-06	2.8E-07	5.9E-06	2.8E-06	9.0E-06	6.0E-08	1.0E-07	1.9E-07	5.6E-10	1.9E-07	8.5E-07	1.6E-06	1.6E-06	8.5E-07	1.6E-06	1.6E-06
SVOC	2-Methylphenol	95-48-7		2.2E-05	2.1E-06	2.5E-05	1.6E-08	2.7E-07	1.5E-07		2.7E-07	2.2E-06	9.7E-07	2.2E-06	6.8E-06	4.7E-07	6.8E-06		4.9E-06	2.9E-07	5.1E-06	9.8E-09	6.9E-08	3.4E-08		6.9E-08	5.8E-07	2.8E-07	5.8E-07	1.8E-06	1.4E-07	1.8E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1																													
SVOC	4-Bromophenyl-phenylether	101-55-3																													
SVOC	4-Chloro-3-methylphenol	59-50-7																													
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																													
SVOC	4-Methylphenol	106-44-5		8.3E-05	5.3E-06	8.8E-05	4.8E-08	1.0E-06	3.7E-07		1.0E-06	7.9E-06	2.4E-06	7.9E-06	2.7E-05	6.4E-07	2.7E-05		1.8E-05	7.4E-07	1.9E-05	2.9E-08	2.5E-07	8.4E-08		2.5E-07	2.1E-06	7.0E-07	2.1E-06	7.3E-06	1.9E-07	7.3E-06
SVOC	4-Nitrophenol	100-02-7							7.0E-09		7.0E-09		4.6E-08	4.6E-08										1.6E-09		1.6E-09		1.3E-08	1.3E-08			
SVOC	Acenaphthene	83-32-9		4.7E-06	8.4E-08	4.8E-06	8.5E-09	5.7E-08	5.2E-09		5.7E-08	4.5E-07	3.4E-08	4.5E-07		1.9E-08	1.9E-08		1.0E-06	1.2E-08	1.0E-06	5.1E-09	1.4E-08	1.2E-09		1.4E-08	1.2E-07	1.0E-08	1.2E-07		5.6E-09	5.6E-09
SVOC	Acenaphthylene	208-96-8	2.9E-08			2.9E-08	3.3E-09			9.8E-11	3.3E-09							1.6E-08			1.6E-08	2.0E-09			7.9E-11	2.0E-09					
SVOC	Anthracene	120-12-7	2.7E-09	1.2E-07	4.4E-08	1.6E-07	2.5E-10	1.4E-09	2.6E-09	3.4E-11	2.6E-09	1.1E-08	1.7E-08	1.7E-08		1.0E-08	1.0E-08	1.5E-09	2.6E-08	6.2E-09	3.3E-08	1.5E-10	3.6E-10	5.9E-10	2.7E-11	5.9E-10	3.1E-09	4.9E-09	4.9E-09		3.0E-09	3.0E-09
SVOC	Benzo(a)anthracene	56-55-3																													
SVOC	Benzo(a)pyrene	50-32-8																													
SVOC	Benzo(b)fluoranthene	205-99-2																													
SVOC	Benzo(g,h,i)perylene	191-24-2																													
SVOC	Benzo(k)fluoranthene	207-08-9																													
SVOC	Benzoic Acid	65-85-0		2.1E-04		2.1E-04	7.1E-08	2.6E-06	8.8E-06		8.8E-06	2.1E-05	5.8E-05	5.8E-05					4.6E-05		4.6E-05	4.3E-08	6.5E-07	2.0E-06		2.0E-06	5.6E-06	1.7E-05	1.7E-05			
SVOC	Benzyl Alcohol	100-51-6																													
SVOC	Butylbenzylphthalate	85-68-7																													
SVOC	Carbazole	86-74-8								4.3E-12	4.3E-12														3.4E-12	3.4E-12					
SVOC	Chrysene	218-01-9																													
SVOC	Di-n-butylphthalate	84-74-2																													
SVOC	Di-n-octylphthalate	117-84-0																													
SVOC	Dibenzo(a,h)anthracene	53-70-3																													
SVOC	Dibenzofuran	132-64-9																													

Table B-8b: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario: FUTURE

Location of Exposure:	AREA 5A									Area 5A							AREA 6									Area 6						
Type of Activity at Emission Location:	Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')			Routine Industrial				Excavation					Construction (0-10')				Construction (0-4')		
	From	From	From	Total At	From Area	From Area	From Area	From Area		From Area	From Area			From Area	From Area		From Area	From	From	Total At	From Area	From Area	From Area	From Area		From Area	From Area			From Area	From Area	
Location of Emission:	Area 1	Area 2	Area 3	Area	1	2	3	4B	Max	2	3	Max		2	3	Max	1	Area 2	Area 3	Area	1	2	3	4B	Max	2	3	Max		2	3	Max
C/Q (kg/m^3 per $kg/m^2/s$):	3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02			3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02			8.9E-03	1.7E-02	

Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Diethylphthalate	84-66-2																													
SVOC	Dimethylphthalate	131-11-3																													
SVOC	Fluoranthene	206-44-0																													
SVOC	Fluorene	86-73-7		2.5E-06	6.3E-08	2.5E-06	3.6E-09	3.0E-08	3.2E-09		3.0E-08	2.4E-07	2.1E-08	2.4E-07			1.4E-08	1.4E-08		5.3E-07	8.7E-09	5.4E-07	2.1E-09	7.5E-09	7.5E-10		7.5E-09	6.4E-08	6.2E-09	6.4E-08		4.2E-09	4.2E-09
SVOC	Hexachlorobenzene	118-74-1																													
SVOC	Hexachlorobutadiene	87-68-3																													
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5																													
SVOC	Isophorone	78-59-1	4.9E-08	2.4E-04	3.2E-05	2.8E-04	5.6E-07	3.0E-06	1.4E-05	6.5E-11	1.4E-05	2.4E-05	8.8E-05	8.8E-05	2.1E-05	2.1E-05	2.1E-05	2.8E-08	5.3E-05	4.4E-06	5.7E-05	3.4E-07	7.5E-07	3.1E-06	5.2E-11	3.1E-06	6.4E-06	2.6E-05	2.6E-05	5.8E-06	6.1E-06	6.1E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7																													
SVOC	N-Nitrosodiphenylamine	86-30-6			5.3E-07	5.3E-07			1.0E-08		1.0E-08		6.7E-08	6.7E-08		8.8E-08	8.8E-08			7.4E-08	7.4E-08			2.4E-09		2.4E-09		2.0E-08	2.0E-08		2.6E-08	2.6E-08
SVOC	Naphthalene	91-20-3		1.2E-04	2.5E-05	1.5E-04	3.4E-07	1.5E-06	3.4E-06	4.4E-11	3.4E-06	1.2E-05	2.2E-05	2.2E-05	1.6E-05	9.7E-06	1.6E-05		2.7E-05	3.5E-06	3.0E-05	2.1E-07	3.8E-07	7.8E-07	3.6E-11	7.8E-07	3.2E-06	6.5E-06	6.5E-06	4.4E-06	2.8E-06	4.4E-06
SVOC	Pentachlorophenol	87-86-5																													
SVOC	Phenanthrene	85-01-8																													
SVOC	Phenol	108-95-2		5.0E-05	4.3E-06	5.4E-05	4.7E-08	6.1E-07	3.9E-06		3.9E-06	4.8E-06	2.6E-05	2.6E-05	1.5E-05	2.2E-06	1.5E-05		1.1E-05	6.0E-07	1.1E-05	2.8E-08	1.5E-07	9.0E-07		9.0E-07	1.3E-06	7.5E-06	7.5E-06	4.0E-06	6.4E-07	4.0E-06
SVOC	Pyrene	129-00-0																													
SVOC	bis(2-Chloroethyl) ether	111-44-4		4.6E-05		4.6E-05	6.1E-08	5.6E-07			5.6E-07	4.4E-06		4.4E-06					1.0E-05		1.0E-05	3.7E-08	1.4E-07			1.4E-07	1.2E-06		1.2E-06			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7																													
P/PCB	4,4'-DDD	72-54-8																													
P/PCB	4,4'-DDE	72-55-9																													
P/PCB	4,4'-DDT	50-29-3																													
P/PCB	Aldrin	309-00-2																													
P/PCB	Aroclor-1242	3469-21-9																													
P/PCB	Aroclor-1248	2672-29-6																													
P/PCB	Aroclor-1254	1097-69-1																													
P/PCB	Aroclor-1260	1096-82-5																													
P/PCB	Dieldrin	60-57-1																													
P/PCB	Endosulfan I	959-98-8																													
P/PCB	Endosulfan sulfate	1031-07-8																													
P/PCB	Endrin	72-20-8																													
P/PCB	Endrin aldehyde	7421-93-4																													
P/PCB	Endrin ketone	3494-70-5																													
P/PCB	Heptachlor	76-44-8																													
P/PCB	Heptachlor epoxide	1024-57-3																													
P/PCB	Methoxychlor	72-43-5																													
P/PCB	alpha-BHC	319-84-6																													
P/PCB	alpha-Chlordane	5103-71-9																													
P/PCB	beta-BHC	319-85-7																													
P/PCB	gamma-BHC	58-89-9																													
P/PCB	gamma-Chlordane	5103-74-2																													
INORG	Antimony	7440-36-0																													
INORG	Arsenic	7440-38-2																													
INORG	Barium	7440-39-3																													
INORG	Beryllium	7440-41-7																													
INORG	Cadmium	7440-43-9																													
INORG	Chromium 3+	6065-83-1																													
INORG	Chromium 6+	8540-29-9																													
INORG	Cobalt	7440-48-4																													
INORG	Copper	7440-50-8																													
INORG	Cyanide (total)	57-12-5																													
INORG	Lead	7439-92-1																													
INORG	Manganese	7439-96-5																													
INORG	Mercury	7439-97-6																													
INORG	Nickel	7440-02-0																													
INORG	Selenium	7782-49-2																													
INORG	Silver	7440-22-4																													
INORG	Thallium	7440-28-0																													
INORG	Vanadium	7440-62-2																													
INORG	Zinc	7440-66-6																													
TIC	Acetaldehyde	75-07-0																													
TIC	Acetophenone	98-86-2																													
TIC	Butanol, 1-	71-36-3																													
TIC	Caprolactam	105-60-2																													
TIC	Chlorodifluoromethane	75-45-6																													
TIC	Cyclohexanone	108-94-1																													
TIC	Diethyl ether	60-29-7																													
TIC	Dioxane, 1,4-	123-91-1																													
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																													
TIC	Hexane, n-	110-54-3																													
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																													
TIC	Phthalic anhydride	85-44-9																													

Table B-8c: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE						FUTURE						FUTURE							FUTURE						FUTURE					
	Location of Exposure:		AREA 1							AREA 2							AREA 3						AREA 4A					AREA 4B					
	Type of Activity at Emission Location:		Routine Industrial				Excavatio		Routine Industrial				Excavatio	Const (0-10')	Const (0-4')	Routine Industrial				Excavatio	Const (0-10')	Const (0-4')	Routine Industrial					Routine Industrial				Excavatio	
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area		From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	
	C/Q (kg/m^3 per $kg/m^2/s$)		1.2E+01	7.2E-01	8.3E-02		5.6E-01		8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00	2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00	4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01	
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)		C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	
VOC	1,1,1-Trichloroethane	71-55-6	4.3E-02	1.2E-04	7.3E-04	4.4E-02	3.3E-01		2.9E-03	2.0E-03	4.8E-03	9.7E-03	3.8E-03	4.4E-03	1.0E-05	1.0E-03	2.7E-04	1.1E-01	1.1E-01	1.6E-01	2.3E-01	2.9E-06	1.7E-03	2.0E-05	1.8E-04	1.9E-03	8.2E-03	4.5E-05	4.0E-04	8.6E-03		
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.1E-04	1.3E-07		1.1E-04	1.3E-04		7.4E-06	2.2E-06		9.7E-06	1.5E-06	1.7E-06		2.5E-06	2.9E-07		2.8E-06				4.3E-06	2.2E-08		4.3E-06	2.1E-05	5.0E-08		2.1E-05		
VOC	1,1,2-Trichloroethane	79-00-5	2.5E-04			2.5E-04	6.1E-04		1.7E-05			1.7E-05				5.9E-06			5.9E-06				9.9E-06			9.9E-06	4.8E-05			4.8E-05		
VOC	1,1-Dichloroethane	75-34-3	7.0E-04	1.0E-04	1.7E-06	8.0E-04	4.7E-03		4.8E-05	1.7E-03	1.1E-05	1.8E-03	3.2E-03	3.6E-03		1.6E-05	2.3E-04	2.4E-04	4.9E-04	3.7E-04	5.2E-04	4.6E-05	2.7E-05	1.7E-05	4.3E-07	4.5E-05	1.3E-04	3.9E-05	9.4E-07	1.7E-04		
VOC	1,1-Dichloroethene	75-35-4												4.6E-06																		
VOC	1,2,4-Trimethylbenzene	95-63-6																														
VOC	1,2-Dichloroethane	107-06-2	9.6E-04	4.1E-05	5.9E-07	1.0E-03	5.3E-03		6.6E-05	6.9E-04	3.9E-06	7.6E-04	1.1E-03	1.2E-03		2.3E-05	9.2E-05	8.5E-05	2.0E-04	1.2E-04	1.5E-04		3.8E-05	6.9E-06	1.5E-07	4.5E-05	1.8E-04	1.5E-05	3.3E-07	2.0E-04		
VOC	1,2-Dichloroethene (total)	540-59-0	9.7E-03	1.7E-04	3.0E-05	9.9E-03	4.2E-02		6.6E-04	2.8E-03	2.0E-04	3.7E-03	3.7E-03	4.2E-03		2.3E-04	3.7E-04	4.4E-03	5.0E-03	4.9E-03	6.5E-03	1.9E-03	3.8E-04	2.8E-05	7.6E-06	4.1E-04	1.9E-03	6.3E-05	1.7E-05	1.9E-03	2.6E-06	
VOC	1,2-Dichloropropane	78-87-5	2.0E-03	4.1E-05	9.6E-07	2.0E-03	3.0E-03		1.4E-04	6.8E-04	6.3E-06	8.2E-04	4.7E-04	5.3E-04		4.6E-05	9.1E-05	1.4E-04	2.8E-04	7.7E-05	1.1E-04	3.8E-06	7.8E-05	6.8E-06	2.4E-07	8.5E-05	3.8E-04	1.5E-05	5.3E-07	4.0E-04		
VOC	1,3,5-Trimethylbenzene	108-67-8																														
VOC	2-Butanone	78-93-3																														
VOC	2-Hexanone	591-78-6		8.9E-04	1.3E-06	8.9E-04				1.5E-02	8.4E-06	1.5E-02	1.0E-02	1.2E-02	2.0E-02		2.0E-03	1.8E-04	2.2E-03	1.3E-04	1.4E-04			1.5E-04	3.2E-07	1.5E-04		3.3E-04	7.0E-07	3.3E-04		
VOC	4-Methyl-2-pentanone	108-10-1	2.0E-03	1.1E-04	2.3E-04	2.3E-03	1.1E-02		1.4E-04	1.8E-03	1.5E-03	3.4E-03	2.8E-03	3.2E-03	4.7E-05	2.3E-04	3.3E-02	3.3E-02	5.2E-02	5.9E-02		1.1E-02	7.9E-05	1.8E-05	5.7E-05	1.5E-04	3.9E-04	4.0E-05	1.3E-04	5.5E-04		
VOC	Acetone	67-64-1	1.3E-03	1.5E-04	3.5E-04	1.8E-03	1.9E-02		8.6E-05	2.5E-03	2.3E-03	5.0E-03	9.6E-03	1.1E-02	8.3E-02	2.9E-05	3.4E-04	5.1E-02	5.2E-02	1.5E-01	2.2E-01	6.7E-05	4.9E-05	2.5E-05	9.0E-05	1.6E-04	2.4E-04	5.7E-05	2.0E-04	4.9E-04	1.5E-06	
VOC	Benzene	71-43-2	7.7E-03	1.0E-04	1.2E-04	7.9E-03	5.9E-02		5.3E-04	1.7E-03	7.9E-04	3.1E-03	3.5E-03	4.0E-03	6.1E-03	1.8E-04	2.3E-04	1.7E-02	1.8E-02	2.7E-02	3.9E-02	8.3E-04	3.0E-04	1.7E-05	3.0E-05	3.5E-04	1.5E-03	3.9E-05	6.6E-05	1.6E-03		
VOC	Bromodichloromethane	75-27-4																														
VOC	Carbon Disulfide	75-15-0					1.2E-06																									
VOC	Carbon Tetrachloride	56-23-5																														
VOC	Chlorobenzene	108-90-7	1.2E-03		9.8E-05	1.3E-03	7.5E-04		8.5E-05		6.5E-04	7.4E-04				2.9E-05		1.4E-02	1.4E-02	7.9E-03	1.1E-02	6.6E-04	4.9E-05		2.5E-05	7.3E-05	2.4E-04		5.4E-05	2.9E-04		
VOC	Chloroethane	75-00-3																														
VOC	Chloroform	67-66-3	8.1E-03	1.4E-04	2.6E-09	8.2E-03	5.5E-02		5.5E-04	2.4E-03	1.7E-08	2.9E-03	4.4E-03	5.1E-03		1.9E-04	3.2E-04	3.8E-07	5.1E-04	1.0E-06	8.1E-07	2.7E-06	3.2E-04	2.4E-05	6.7E-10	3.4E-04	1.5E-03	5.4E-05	1.5E-09	1.6E-03		
VOC	Chloromethane	74-87-3																														
VOC	Ethyl Benzene	100-41-4	7.3E-03	6.0E-04	2.3E-04	8.1E-03	5.1E-02		5.0E-04	1.0E-02	1.5E-03	1.2E-02	1.7E-02	1.9E-02	4.2E-02	1.7E-04	1.3E-03	3.3E-02	3.5E-02	5.5E-02	6.3E-02	6.3E-02	2.9E-04	1.0E-04	5.8E-05	4.4E-04	1.4E-03	2.3E-04	1.3E-04	1.8E-03		
VOC	Methylene Chloride	75-09-2	1.3E-01	3.5E-04	7.4E-06	1.3E-01	7.5E-02		8.6E-03	5.9E-03	4.9E-05	1.5E-02	4.0E-03	4.6E-03	6.2E-06	2.9E-03	7.9E-04	1.1E-03	4.8E-03	5.9E-04	8.4E-04	6.2E-05	4.9E-03	5.9E-05	1.9E-06	5.0E-03	2.4E-02	1.3E-04	4.1E-06	2.4E-02		
VOC	Styrene	100-42-5	8.3E-04	2.2E-05	6.6E-05	9.2E-04	3.1E-03		5.7E-05	3.7E-04	4.3E-04	8.6E-04	4.3E-04	4.9E-04		1.9E-05	4.9E-05	9.5E-03	9.5E-03	9.0E-03	1.3E-02	1.1E-03	3.3E-05	3.7E-06	1.7E-05	5.3E-05	1.6E-04	8.2E-06	3.6E-05	2.0E-04		
VOC	Tetrachloroethene	127-18-4	1.1E-02	1.3E-03	3.3E-04	1.3E-02	6.6E-02		7.8E-04	2.2E-02	2.2E-03	2.5E-02	3.1E-02	3.5E-02	7.5E-02	2.7E-04	3.0E-03	4.8E-02	5.1E-02	6.6E-02	7.5E-02	7.5E-02	4.5E-04	2.2E-04	8.4E-05	7.6E-04	2.2E-03	5.0E-04	1.8E-04	2.9E-03		
VOC	Tetrahydrofuran	109-99-9																														
VOC	Toluene	108-88-3	3.9E-02	6.7E-03	9.4E-04	4.6E-02	1.2E-01		2.6E-03	1.1E-01	6.3E-03	1.2E-01	1.0E-01	1.1E-01	1.4E-01	9.0E-04	1.5E-02	1.4E-01	1.5E-01	1.2E-01	1.4E-01	1.4E-01	1.5E-03	1.1E-03	2.4E-04	2.9E-03	7.4E-03	2.5E-03	5.2E-04	1.0E-02		
VOC	Trichloroethene	79-01-6	9.1E-03	4.0E-04	1.3E-03	1.1E-02	5.0E-02		6.2E-04	6.7E-03	8.8E-03	1.6E-02	1.0E-02	1.2E-02	7.4E-02	2.1E-04	8.9E-04	1.9E-01	1.9E-01	2.7E-01	3.3E-01	1.8E-02	3.6E-04	6.7E-05	3.4E-04	7.6E-04	1.8E-03	1.5E-04	7.4E-04	2.6E-03		
VOC	Vinyl Chloride	75-01-4		5.5E-06		5.5E-06				9.1E-05		9.1E-05	8.1E-05	9.3E-05			1.2E-05		1.2E-05					9.1E-07		9.1E-07		2.1E-06		2.1E-06		
VOC	Xylenes (total)	1330-20-7	1.8E-02	3.7E-03	4.3E-04	2.2E-02	5.5E-02		1.3E-03	6.2E-02	2.8E-03	6.6E-02	5.5E-02	6.3E-02	6.3E-02	4.3E-04	8.3E-03	6.2E-02	7.1E-02	5.5E-02	6.3E-02	6.3E-02	7.2E-04	6.2E-04	1.1E-04	1.4E-03	3.5E-03	1.4E-03	2.4E-04	5.1E-03		
VOC	cis-1,2-Dichloroethene	156-59-2	3.0E-02	1.6E-06	1.8E-08	3.0E-02	2.1E-01		2.1E-03	2.7E-05	1.2E-07	2.1E-03	5.0E-05	5.7E-05	3.5E-05	7.1E-04	3.6E-06	2.6E-06	7.1E-04	3.8E-06	5.5E-06		1.2E-03	2.7E-07	4.5E-09	1.2E-03	5.8E-03	6.1E-07	9.9E-09	5.8E-03		
VOC	m,p-xylene	6777-61-2	7.5E-02	9.4E-06	1.1E-04	7.5E-02	5.7E-02		5.1E-03	1.6E-04	7.4E-04	6.0E-03	1.1E-04	1.2E-04	3.7E-06	1.8E-03	2.1E-05	1.6E-02	1.8E-02	8.8E-03	1.3E-02		2.9E-03	1.6E-06	2.8E-05	3.0E-03	1.4E-02	3.5E-06	6.2E-05	1.4E-02		
VOC	ortho-xylene	95-47-6	2.1E-02	4.5E-06	4.0E-05	2.2E-02	2.5E-02		1.5E-03	7.5E-05	2.7E-04	1.8E-03	5.1E-05	5.9E-05	1.3E-06	5.0E-04	1.0E-05	5.8E-03	6.3E-03	3.2E-03	4.6E-03	2.5E-06	8.4E-04	7.5E-07	1.0E-05	8.5E-04	4.1E-03	1.7E-06	2.2E-05	4.1E-03		
VOC	p-Cymene	99-87-6																														
VOC	trans-1,2-Dichloroethene	156-60-5																														
SVOC	1,2,4-Trichlorobenzene	120-82-1	2.5E-05	9.6E-06		3.4E-05	4.7E-05		1.7E-06	1.6E-04		1.6E-04	1.2E-04	1.4E-04		5.7E-07	2.1E-05		2.2E-05				9.6E-07	1.6E-06		2.6E-06	4.7E-06	3.6E-06		8.3E-06		
SVOC	1,2-Dichlorobenzene	95-50-1	8.8E-04	1.9E-04	1.0E-07	1.1E-03	4.8E-04		6.0E-05	3.1E-03	6.9E-07	3.2E-03	2.1E-03	2.4E-03	9.5E-03	2.0E-05	4.1E-04	1.5E-05	4.5E-04	1.3E-05	1.2E-05	2.7E-05	3.4E-05	3.1E-05	2.6E-08	6.5E-05	1.7E-04	7.0E-05	5.7E-08	2.4E-04		
SVOC	1,3-Dichlorobenzene	541-73-1																														
SVOC	1,4-Dichlorobenzene	106-46-7	3.4E-04	3.6E-06	4.2E-08	3.4E-04	1.9E-04		2.3E-05	5.9E-05	2.8E-07	8.3E-05	4.1E-05	4.6E-05		7.9E-06	7.9E-06	6.0E-06	2.2E-05	4.1E-06	4.8E-06		1.3E-05	5.9E-07	1.1E-08	1.4E-05	6.5E-05	1.3E-06	2.3E-08	6.6E-05		
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																														
SVOC	2,4,5-Trichlorophenol	95-95-4																		2.1E-07	2.5E-07	2.5E-07										
SVOC	2,4-Dichlorophenol	120-83-2	2.5E-05			2.5E-05	1.4E-05		1.7E-06			1.7E-06				5.9E-07			5.9E-07				9.9E-07			9.9E-07	4.9E-06			4.9E-06		
SVOC	2,4-Dimethylphenol	105-67-9	8.5E-06	6.1E-06	4.1E-07	1.5E-05	3.1E-05		5.8E-07	1.0E-04	2.7E-06	1.0E-04	1.2E-04	1.3E-04	3.6E-04	2.0E-07	1.3E-05	5.9E-05	7.3E-05	5.9E-05	7.9E-05	2.0E-05	3.3E-07	1.0E-06	1.0E-07	1.4E-06	1.6E-06	2.3E-06	2.3E-07	4.1E-06		
SVOC	2,4-Dinitrotoluene	121-14-2			3.5E-08	3.5E-08					2.3E-07	2.3E-07						5.0E-06	5.0E-06	3.4E-06	3.9E-06				8.7E-09	8.7E-09			1.9E-08	1.9E-08		
SVOC	2,6-Dinitrotoluene	606-20-2		9.8E-07		9.8E-07					1.6E-05	1.6E-05	1.7E-05	1.9E-05			2.2E-06		2.2E-06					1.6E-07		1.6E-07		3.7E-07		3.7E-07		
SVOC	2-Chloronaphthalene	91-58-7																														
SVOC	2-Methylnaphthalene	91-57-6	1.2E-04	2.0E-05	2.3E-06	1.4E-04	2.8E-04		7.9E-06	3.4E-04	1.5E-05	3.6E-04	2.8E-04	3.2E-04	3.2E-04	2.7E-06	4.5E-05	3.4E-04	3.8E-04	2.8E-04	3.2E-04	3.2E-04	4.5E-06	3.4E-06	5.9E-07	8.5E-06	2.2E-05	7.6E-06	1.3E-06	3.1E-05	4.1E-06	
SVOC	2-Methylphenol	95-48-7	8.2E-05	1.7E-05	5.5E-07	9.9E-05	4.5E-05		5.6E-06	2.8E-04	3.7E-06	2.9E-04	1.9E-04	2.2E-04	6.9E-04	1.9E-06	3.7E-05	8.0E-05	1.2E-04	4.9E-05	6.3E-05	2.7E-05	3.2E-06	2.8E-06	1.4E-07	6.1E-06	1.6E-05	6.3E-06	3.1E-07	2.2E-05		
SVOC	3,3'-Dichlorobenzidine	91-94-1																														
SVOC	4-Bromophenyl-phenylether	101-55-3																														
SVOC	4-Chloro-3-methylphenol	59-50-7																														
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																														
SVOC	4-Methylphenol	106-44-5	1.3E-04	6.1E-05	1.4E-06	1.9E-04	1.3E-04		8.8E-06	1.0E-03	9.0E-06	1.0E-03	7.0E-04	8.0E-04	2.7E-03	3.0E-06	1.4E-04	2.0E-04	3.3E-04	1.2E-04	1.5E-04	7.0E-05	5.0E-06	1.0E-05	3.4E-07	1.6E-05	2.5E-05	2.3E-05	7.5E-07	4.8E-05		
SVOC	4-Nitrophenol	100-02-7			2.3E-08	2.3E-08					1.5E-07	1.5E-07						3.3E-06	3.3E-06	2.3E-06	2.6E-06				5.8E-09	5.8E-09			1.3E-08	1.3E-08		
SVOC	Acenaphthene	83-32-9	4.3E-05	3.5E-06	1.9E-08	4.6E-05	2.4E-05		2.9E-06	5.8E-05	1.3E-07	6.1E-05	4.0E-05	4.6E-05		1.0E-06	7.8E-06	2.8E-06	1.2E-05	1.7E-06	2.2E-06	1.1E-06	1.7E-06	5.8E-07	4.8E-09	2.3E-06	8.2E-06	1.3E-06	1.1E-08	9.5E-06		
SVOC	Acenaphthylene	208-96-8	1.6E-05			1.6E-05	9.1E-06		1.1E-06			1.1E-06				3.8E-07			3.8E-07				6.4E-07			6.4E-07	3.1E-06			3.1E-06	5.7E-07	
SVOC	Anthracene	120-12-7	1.2E-06	8.7E-08	9.3E-09	1.3E-06	6.9E-07		8.4E-08	1.5E-06	6.2E-08	1.6E-06	1.0E-06	1.1E-06		2.9E-08	1.9E-07	1.3E-06	1.6E-06	8.4E-07	1.1E-06	5.8E-07	4.8E-08	1.5E-08	2.4E-09	6.5E-08	2.4E-07	3.3E-08	5.2E-09	2.7E-07	2.0E-07	
SVOC	Benzo(a)anthracene	56-55-3																														
SVOC	Benzo(a)pyrene	50-32-8																														
SVOC	Benzo(b)fluoranthene	205-99-2																														
SVOC	Benzo(g,h,i)perylene	191-24-2																														
SVOC	Benzo(k)fluoranthene	207-08-9																														
SVOC	Benzoic Acid	65-85-0	2.6E-04	1.6E-04	3.5E-05	4.6E-04	2.0E-04		1.8E-05	2.6E-03	2.3E-04	2.9E-03	1.8E-03	2.1E-03		6.1E-06	3.5E-04	5.1E-03	5.4E-03	2.9E-03	4.0E-03		1.0E-05	2.6E-05	8.9E-06	4.6E-05	5.0E-05	6.0E-05	2.0E-05	1.3E-04		
SVOC	Benzyl Alcohol	100-51-6																														
SVOC	Butylbenzylphthalate	85-68-7																														
SVOC	Carbazole	86-74-8																														2.5E-08
SVOC	Chrysene	218-01-9																														
SVOC	Di-n-butylphthalate	84-74-2																														
SVOC	Di-n-octylphthalate	117-84-0																														
SVOC	Dibenzo(a,h)anthracene	53-70-3																														
SVOC	Dibenzofuran	132-64-9																														
SVOC	Diethylphthalate	84-66-2																														

Table B-8c: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE						FUTURE							FUTURE							FUTURE						FUTURE				
	Location of Exposure:		AREA 1						AREA 2							AREA 3							AREA 4A						AREA 4B				
	Type of Activity at Emission Location:			Routine Industrial			Excavatio			Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial			Excavatio	Const (0-10')	Const (0-4')		Routine Industrial					Routine Industrial			Excavatio
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area	At Area	At Area	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	Total At Area	At Area
	C/Q (kg/m^3 per kg/m^2/s)		1.2E+01	7.2E-01	8.3E-02		5.6E-01	8.2E-01	1.2E+01	5.5E-01		5.6E-01	3.3E+00	3.3E+00		2.8E-01	1.6E+00	1.2E+01		5.6E-01	3.3E+00	3.3E+00		4.7E-01	1.2E-01	2.1E-02		2.3E+00	2.7E-01	4.6E-02		5.6E-01
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Dimethylphthalate	131-11-3																														
SVOC	Fluoranthene	206-44-0																														
SVOC	Fluorene	86-73-7	1.8E-05	1.8E-06	1.2E-08	2.0E-05	9.9E-06	1.2E-06	3.0E-05	7.7E-08	3.2E-05	2.1E-05	2.4E-05		4.2E-07	4.0E-06	1.7E-06	6.1E-06	1.1E-06	1.3E-06	8.3E-07	7.0E-07	3.0E-07	2.9E-09	1.0E-06	3.4E-06	6.8E-07	6.4E-09	4.1E-06		
SVOC	Hexachlorobenzene	118-74-1																														
SVOC	Hexachlorobutadiene	87-68-3																														
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5																														
SVOC	Isophorone	78-59-1	2.8E-03	1.8E-04	5.5E-05	3.1E-03	1.6E-03	1.9E-04	3.0E-03	3.6E-04	3.6E-03	2.1E-03	2.4E-03	2.2E-03	6.6E-05	4.0E-04	7.9E-03	8.4E-03	4.4E-03	6.2E-03	2.0E-03	1.1E-04	3.0E-05	1.4E-05	1.6E-04	5.4E-04	6.8E-05	3.0E-05	6.4E-04	3.8E-07	
SVOC	N-Nitroso-di-n-propylamine	621-64-7																														
SVOC	N-Nitrosodiphenylamine	86-30-6			2.7E-08	2.7E-08				1.8E-07	1.8E-07						3.9E-06	3.9E-06	3.4E-06	3.1E-06	7.0E-06			6.9E-09	6.9E-09			1.5E-08	1.5E-08		
SVOC	Naphthalene	91-20-3	8.3E-04	9.1E-05	1.3E-05	9.3E-04	9.5E-04	5.7E-05	1.5E-03	8.7E-05	1.7E-03	1.0E-03	1.2E-03	1.7E-03	1.9E-05	2.0E-04	1.9E-03	2.1E-03	1.1E-03	1.5E-03	1.1E-03	3.2E-05	1.5E-05	3.3E-06	5.1E-05	1.6E-04	3.4E-05	7.3E-06	2.0E-04	2.6E-07	
SVOC	Pentachlorophenol	87-86-5																														
SVOC	Phenanthrene	85-01-8																														
SVOC	Phenol	108-95-2	2.1E-04	3.7E-05	1.6E-05	2.7E-04	1.3E-04	1.5E-05	6.2E-04	1.1E-04	7.4E-04	4.3E-04	4.9E-04	1.5E-03	5.0E-06	8.3E-05	2.3E-03	2.4E-03	1.3E-03	1.8E-03	1.4E-04	8.4E-06	6.2E-06	4.1E-06	1.9E-05	4.1E-05	1.4E-05	8.9E-06	6.4E-05		
SVOC	Pyrene	129-00-0																														
SVOC	bis(2-Chloroethyl) ether	111-44-4	3.1E-04	3.4E-05		3.4E-04	1.7E-04	2.1E-05	5.7E-04		5.9E-04	3.9E-04	4.5E-04		7.2E-06	7.6E-05		8.3E-05				1.2E-05	5.7E-06		1.8E-05	5.9E-05	1.3E-05		7.2E-05		
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7																														
P/PCB	4,4'-DDD	72-54-8																														
P/PCB	4,4'-DDE	72-55-9																														
P/PCB	4,4'-DDT	50-29-3																														
P/PCB	Aldrin	309-00-2																														
P/PCB	Aroclor-1242	3469-21-9																														
P/PCB	Aroclor-1248	2672-29-6																														
P/PCB	Aroclor-1254	1097-69-1																														
P/PCB	Aroclor-1260	1096-82-5																														
P/PCB	Dieldrin	60-57-1																														
P/PCB	Endosulfan I	959-98-8																														
P/PCB	Endosulfan sulfate	1031-07-8																														
P/PCB	Endrin	72-20-8																														
P/PCB	Endrin aldehyde	7421-93-4																														
P/PCB	Endrin ketone	3494-70-5																														
P/PCB	Heptachlor	76-44-8																														
P/PCB	Heptachlor epoxide	1024-57-3																														
P/PCB	Methoxychlor	72-43-5																														
P/PCB	alpha-BHC	319-84-6																														
P/PCB	alpha-Chlordane	5103-71-9																														
P/PCB	beta-BHC	319-85-7																														
P/PCB	gamma-BHC	58-89-9																														
P/PCB	gamma-Chlordane	5103-74-2																														
INORG	Antimony	7440-36-0																														
INORG	Arsenic	7440-38-2																														
INORG	Barium	7440-39-3																														
INORG	Beryllium	7440-41-7																														
INORG	Cadmium	7440-43-9																														
INORG	Chromium 3+	6065-83-1																														
INORG	Chromium 6+	8540-29-9																														
INORG	Cobalt	7440-48-4																														
INORG	Copper	7440-50-8																														
INORG	Cyanide (total)	57-12-5																														
INORG	Lead	7439-92-1																														
INORG	Manganese	7439-96-5																														
INORG	Mercury	7439-97-6																														
INORG	Nickel	7440-02-0																														
INORG	Selenium	7782-49-2																														
INORG	Silver	7440-22-4																														
INORG	Thallium	7440-28-0																														
INORG	Vanadium	7440-62-2																														
INORG	Zinc	7440-66-6																														
TIC	Acetaldehyde	75-07-0																														
TIC	Acetophenone	98-86-2																														
TIC	Butanol, 1-	71-36-3																														
TIC	Caprolactam	105-60-2																														
TIC	Chlorodifluoromethane	75-45-6																														
TIC	Cyclohexanone	108-94-1																														
TIC	Diethyl ether	60-29-7																														
TIC	Dioxane, 1,4-	123-91-1																														
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																														
TIC	Hexane, n-	110-54-3																														
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																														
TIC	Phthalic anhydride	85-44-9																														

Table B-8c: Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		FUTURE																FUTURE													
	Location of Exposure:		AREA 5A																AREA 6													
	Type of Activity at Emission Location:		Routine Industrial				Excavation					Construction (0-10')			Construction (0-4')				Routine Industrial				Excavation					Construction (0-10')			Construction (0-4')		
	Location of Emission:		From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max	From Area 1	From Area 2	From Area 3	Total At Area	From Area 1	From Area 2	From Area 3	From Area 4B	Max	From Area 2	From Area 3	Max	From Area 2	From Area 3	Max
	C/Q (kg/m^3 per kg/m^2/s)		3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.1E-03	1.6E-04	6.3E-03	7.6E-03	1.2E-04	5.5E-06	4.9E-04		4.9E-04	4.3E-05	4.0E-03	4.0E-03	9.9E-08	5.0E-08	9.9E-08	6.4E-04	3.5E-05	8.8E-04	1.6E-03	7.2E-05	1.4E-06	1.1E-04		1.1E-04	1.2E-05	1.2E-03	1.2E-03	2.7E-08	1.5E-08	2.7E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5	2.9E-06	1.8E-07		3.1E-06	4.8E-08	2.2E-09			4.8E-08	1.7E-08		1.7E-08				1.6E-06	3.9E-08		1.7E-06	2.9E-08	5.5E-10			2.9E-08	4.6E-09		4.6E-09			
VOC	1,1,2-Trichloroethane	79-00-5	6.7E-06			6.7E-06	2.2E-07				2.2E-07							3.8E-06			3.8E-06	1.3E-07				1.3E-07						
VOC	1,1-Dichloroethane	75-34-3	1.9E-05	1.4E-04	1.5E-05	1.7E-04	1.7E-06	4.6E-06	1.1E-06		4.6E-06	3.6E-05	9.0E-06	3.6E-05		8.0E-07	8.0E-07	1.1E-05	3.0E-05	2.0E-06	4.3E-05	1.0E-06	1.1E-06	2.6E-07		1.1E-06	9.7E-06	2.6E-06	9.7E-06		2.3E-07	2.3E-07
VOC	1,1-Dichloroethene	75-35-4													4.6E-08		4.6E-08													1.2E-08		1.2E-08
VOC	1,2,4-Trimethylbenzene	95-63-6																														
VOC	1,2-Dichloroethane	107-06-2	2.6E-05	5.6E-05	5.1E-06	8.6E-05	1.9E-06	1.6E-06	3.7E-07		1.9E-06	1.2E-05	2.7E-06	1.2E-05				1.4E-05	1.2E-05	7.1E-07	2.7E-05	1.1E-06	3.9E-07	8.4E-08		1.1E-06	3.3E-06	7.8E-07	3.3E-06			
VOC	1,2-Dichloroethene (total)	540-59-0	2.6E-04	2.3E-04	2.6E-04	7.5E-04	1.5E-05	5.3E-06	1.5E-05	4.5E-10	1.5E-05	4.1E-05	1.1E-04	1.1E-04		3.3E-05	3.3E-05	1.4E-04	4.9E-05	3.6E-05	2.3E-04	9.0E-06	1.3E-06	3.4E-06	3.6E-10	9.0E-06	1.1E-05	3.3E-05	3.3E-05		9.7E-06	9.7E-06
VOC	1,2-Dichloropropane	78-87-5	5.3E-05	5.5E-05	8.3E-06	1.2E-04	1.1E-06	6.7E-07	2.3E-07		1.1E-06	5.3E-06	1.9E-06	5.3E-06		6.5E-08	6.5E-08	3.0E-05	1.2E-05	1.2E-06	4.3E-05	6.6E-07	1.7E-07	5.4E-08		6.6E-07	1.4E-06	5.6E-07	1.4E-06		1.9E-08	1.9E-08
VOC	1,3,5-Trimethylbenzene	108-67-8																														
VOC	2-Butanone	78-93-3																														
VOC	2-Hexanone	591-78-6		1.2E-03	1.1E-05	1.2E-03		1.5E-05	3.8E-07		1.5E-05	1.2E-04	2.5E-06	1.2E-04	2.0E-04		2.0E-04		2.6E-04	1.5E-06	2.6E-04		3.7E-06	8.8E-08		3.7E-06	3.1E-05	7.3E-07	3.1E-05	5.4E-05		5.4E-05
VOC	4-Methyl-2-pentanone	108-10-1	5.4E-05	1.4E-04	2.0E-03	2.2E-03	4.1E-06	4.0E-06	1.6E-04		1.6E-04	3.1E-05	1.0E-03	1.0E-03	6.5E-05	2.0E-04	2.0E-04	3.0E-05	3.1E-05	2.7E-04	3.3E-04	2.5E-06	1.0E-06	3.6E-05		3.6E-05	8.5E-06	3.0E-04	3.0E-04	1.8E-05	5.7E-05	5.7E-05
VOC	Acetone	67-64-1	3.3E-05	2.1E-04	3.1E-03	3.3E-03	7.0E-06	1.4E-05	4.7E-04	2.6E-10	4.7E-04	1.1E-04	3.9E-03	3.9E-03	8.2E-04	1.2E-06	8.2E-04	1.9E-05	4.5E-05	4.3E-04	4.9E-04	4.2E-06	3.5E-06	1.1E-04	2.1E-10	1.1E-04	2.9E-05	1.1E-03	1.1E-03	2.2E-04	3.4E-07	2.2E-04
VOC	Benzene	71-43-2	2.1E-04	1.4E-04	1.0E-03	1.4E-03	2.1E-05	5.0E-06	8.4E-05		8.4E-05	3.9E-05	6.8E-04	6.8E-04	6.0E-05	1.4E-05	6.0E-05	1.2E-04	3.1E-05	1.4E-04	2.9E-04	1.3E-05	1.3E-06	1.9E-05		1.9E-05	1.1E-05	2.0E-04	2.0E-04	1.6E-05	4.2E-06	1.6E-05
VOC	Bromodichloromethane	75-27-4																														
VOC	Carbon Disulfide	75-15-0					4.2E-10				4.2E-10											2.5E-10				2.5E-10						
VOC	Carbon Tetrachloride	56-23-5																														
VOC	Chlorobenzene	108-90-7	3.3E-05		8.5E-04	8.9E-04	2.7E-07		2.4E-05		2.4E-05		1.9E-04	1.9E-04		1.2E-05	1.2E-05	1.9E-05		1.2E-04	1.4E-04	1.6E-07		5.5E-06		5.5E-06		5.7E-05	5.7E-05		3.4E-06	3.4E-06
VOC	Chloroethane	75-00-3																														
VOC	Chloroform	67-66-3	2.1E-04	1.9E-04	2.3E-08	4.1E-04	2.0E-05	6.4E-06	3.2E-09		2.0E-05	5.0E-05	1.4E-08	5.0E-05		4.7E-08	4.7E-08	1.2E-04	4.2E-05	3.2E-09	1.6E-04	1.2E-05	1.6E-06	7.3E-10		1.2E-05	1.4E-05	4.1E-09	1.4E-05		1.4E-08	1.4E-08
VOC	Chloromethane	74-87-3																														
VOC	Ethyl Benzene	100-41-4	1.9E-04	8.1E-04	2.0E-03	3.0E-03	1.8E-05	2.4E-05	1.7E-04		1.7E-04	1.9E-04	1.1E-03	1.1E-03	4.2E-04	1.1E-03	1.1E-03	1.1E-04	1.8E-04	2.8E-04	5.6E-04	1.1E-05	6.0E-06	3.9E-05		3.9E-05	5.1E-05	3.2E-04	3.2E-04	1.1E-04	3.2E-04	3.2E-04
VOC	Methylene Chloride	75-09-2	3.3E-03	4.8E-04	6.4E-05	3.9E-03	2.7E-05	5.8E-06	1.8E-06		2.7E-05	4.6E-05	1.5E-05	4.6E-05	6.1E-08	1.1E-06	1.1E-06	1.9E-03	1.0E-04	8.9E-06	2.0E-03	1.6E-05	1.5E-06	4.2E-07		1.6E-05	1.2E-05	4.3E-06	1.2E-05	1.7E-08	3.2E-07	3.2E-07
VOC	Styrene	100-42-5	2.2E-05	3.0E-05	5.7E-04	6.2E-04	1.1E-06	6.1E-07	2.8E-05		2.8E-05	4.8E-06	2.2E-04	2.2E-04		2.0E-05	2.0E-05	1.2E-05	6.4E-06	7.9E-05	9.8E-05	6.7E-07	1.5E-07	6.3E-06		6.3E-06	1.3E-06	6.5E-05	6.5E-05		5.8E-06	5.8E-06
VOC	Tetrachloroethene	127-18-4	3.0E-04	1.8E-03	2.9E-03	5.0E-03	2.4E-05	4.4E-05	2.0E-04		2.0E-04	3.5E-04	1.3E-03	1.3E-03	7.5E-04	1.3E-03	1.3E-03	1.7E-04	3.9E-04	4.0E-04	9.6E-04	1.4E-05	1.1E-05	4.6E-05		4.6E-05	9.4E-05	3.8E-04	3.8E-04	2.0E-04	3.8E-04	3.8E-04
VOC	Tetrahydrofuran	109-99-9																														
VOC	Toluene	108-88-3	1.0E-03	9.0E-03	8.2E-03	1.8E-02	4.4E-05	1.4E-04	3.7E-04		3.7E-04	1.1E-03	2.4E-03	2.4E-03	1.4E-03	2.4E-03	2.4E-03	5.8E-04	2.0E-03	1.1E-03	3.7E-03	2.6E-05	3.6E-05	8.5E-05		8.5E-05	3.0E-04	7.1E-04	7.1E-04	3.7E-04	7.1E-04	7.1E-04
VOC	Trichloroethene	79-01-6	2.4E-04	5.4E-04	1.2E-02	1.2E-02	1.8E-05	1.5E-05	8.1E-04		8.1E-04	1.1E-04	5.8E-03	5.8E-03	7.3E-04	3.1E-04	7.3E-04	1.4E-04	1.2E-04	1.6E-03	1.9E-03	1.1E-05	3.6E-06	1.9E-04		1.9E-04	3.1E-05	1.7E-03	1.7E-03	2.0E-04	9.1E-05	2.0E-04
VOC	Vinyl Chloride	75-01-4		7.4E-06		7.4E-06		1.2E-07			1.2E-07	9.2E-07		9.2E-07					1.6E-06		1.6E-06		2.9E-08			2.9E-08	2.5E-07		2.5E-07			
VOC	Xylenes (total)	1330-20-7	4.9E-04	5.0E-03	3.7E-03	9.2E-03	2.0E-05	7.9E-05	1.7E-04		1.7E-04	6.3E-04	1.1E-03	1.1E-03	6.3E-04	1.1E-03	1.1E-03	2.7E-04	1.1E-03	5.2E-04	1.9E-03	1.2E-05	2.0E-05	3.9E-05		3.9E-05	1.7E-04	3.2E-04	3.2E-04	1.7E-04	3.2E-04	3.2E-04
VOC	cis-1,2-Dichloroethene	156-59-2	8.1E-04	2.2E-06	1.6E-07	8.1E-04	7.5E-05	7.2E-08	1.2E-08		7.5E-05	5.7E-07	9.6E-08	5.7E-07	3.5E-07		3.5E-07	4.5E-04	4.7E-07	2.2E-08	4.5E-04	4.5E-05	1.8E-08	2.7E-09		4.5E-05	1.5E-07	2.8E-08	1.5E-07	9.3E-08		9.3E-08
VOC	m,p-xylene	6777-61-2	2.0E-03	1.3E-05	9.7E-04	3.0E-03	2.0E-05	1.5E-07	2.7E-05		2.7E-05	1.2E-06	2.2E-04	2.2E-04	3.6E-08		3.6E-08	1.1E-03	2.7E-06	1.3E-04	1.3E-03	1.2E-05	3.9E-08	6.2E-06		1.2E-05	3.3E-07	6.5E-05	6.5E-05	9.8E-09		9.8E-09
VOC	ortho-xylene	95-47-6	5.7E-04	6.1E-06	3.5E-04	9.3E-04	8.9E-06	7.4E-08	9.8E-06		9.8E-06	5.8E-07	8.0E-05	8.0E-05	1.3E-08	4.3E-08	4.3E-08	3.2E-04	1.3E-06	4.9E-05	3.7E-04	5.3E-06	1.9E-08	2.2E-06		5.3E-06	1.6E-07	2.3E-05	2.3E-05	3.5E-09	1.3E-08	1.3E-08
VOC	p-Cymene	99-87-6																														
VOC	trans-1,2-Dichloroethene	156-60-5																														
SVOC	1,2,4-Trichlorobenzene	120-82-1	6.6E-07	1.3E-05		1.4E-05	1.7E-08	1.7E-07			1.7E-07	1.4E-06		1.4E-06				3.7E-07	2.8E-06		3.2E-06	1.0E-08	4.3E-08			4.3E-08	3.7E-07		3.7E-07			
SVOC	1,2-Dichlorobenzene	95-50-1	2.3E-05	2.5E-04	9.0E-07	2.7E-04	1.7E-07	3.1E-06	3.9E-08		3.1E-06	2.4E-05	2.0E-07	2.4E-05	9.4E-05	4.6E-07	9.4E-05	1.3E-05	5.4E-05	1.2E-07	6.8E-05	1.0E-07	7.7E-07	9.0E-09		7.7E-07	6.5E-06	6.0E-08	6.5E-06	2.5E-05	1.4E-07	2.5E-05
SVOC	1,3-Dichlorobenzene	541-73-1																														
SVOC	1,4-Dichlorobenzene	106-46-7	9.0E-06	4.8E-06	3.6E-07	1.4E-05	6.8E-08	5.8E-08	1.3E-08		6.8E-08	4.6E-07	8.3E-08	4.6E-07				5.1E-06	1.0E-06	5.0E-08	6.2E-06	4.1E-08	1.5E-08	2.9E-09		4.1E-08	1.2E-07	2.4E-08	1.2E-07			
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1																														
SVOC	2,4,5-Trichlorophenol	95-95-4							6.5E-10		6.5E-10		4.3E-09	4.3E-09		4.3E-09	4.3E-09							1.5E-10		1.5E-10		1.3E-09	1.3E-09		1.3E-09	1.3E-09
SVOC	2,4-Dichlorophenol	120-83-2	6.8E-07			6.8E-07	5.1E-09				5.1E-09							3.8E-07			3.8E-07	3.1E-09				3.1E-09						
SVOC	2,4-Dimethylphenol	105-67-9	2.3E-07	8.2E-06	3.6E-06	1.2E-05	1.1E-08	1.7E-07	1.8E-07		1.8E-07	1.3E-06	1.4E-06	1.4E-06	3.6E-06	3.5E-07	3.6E-06	1.3E-07	1.8E-06	4.9E-07	2.4E-06	6.8E-09	4.2E-08	4.1E-08		4.2E-08	3.6E-07	4.0E-07	4.0E-07	9.7E-07	1.0E-07	9.7E-07
SVOC	2,4-Dinitrotoluene	121-14-2			3.0E-07	3.0E-07			1.0E-08		1.0E-08		6.8E-08	6.8E-08						4.2E-08	4.2E-08			2.4E-09		2.4E-09		2.0E-08	2.0E-08			
SVOC	2,6-Dinitrotoluene	606-20-2		1.3E-06		1.3E-06		2.4E-08			2.4E-08	1.9E-07		1.9E-07					2.9E-07		2.9E-07		6.1E-09			6.1E-09	5.2E-08		5.2E-08			
SVOC	2-Chloronaphthalene	91-58-7																														
SVOC	2-Methylnaphthalene	91-57-6	3.1E-06	2.7E-05	2.0E-05	5.1E-05	1.0E-07	4.0E-07	8.5E-07	7.0E-10	8.5E-07	3.1E-06	5.5E-06	5.5E-06	3.1E-06	5.5E-06	5.5E-06	1.7E-06	5.9E-06	2.8E-06	1.0E-05	6.0E-08	1.0E-07	1.9E-07	5.6E-10	1.9E-07	8.5E-07	1.6E-06	1.6E-06	8.5E-07	1.6E-06	1.6E-06
SVOC	2-Methylphenol	95-48-7	2.2E-06	2.2E-05	4.8E-06	2.9E-05	1.6E-08	2.7E-07	1.5E-07		2.7E-07	2.2E-06	1.1E-06	2.2E-06	6.8E-06	4.7E-07	6.8E-06	1.2E-06	4.9E-06	6.7E-07	6.8E-06	9.8E-09	6.9E-08	3.4E-08		6.9E-08	5.8E-07	3.2E-07	5.8E-07	1.8E-06	1.4E-07	1.8E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1																														
SVOC	4-Bromophenyl-phenylether	101-55-3																														
SVOC	4-Chloro-3-methylphenol	59-50-7																														
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																														
SVOC	4-Methylphenol	106-44-5	3.4E-06	8.3E-05	1.2E-05	9.8E-05	4.8E-08	1.0E-06	3.7E-07		1.0E-06	7.9E-06	2.7E-06	7.9E-06	2.7E-05	1.2E-06	2.7E-05	1.9E-06	1.8E-05	1.6E-06	2.1E-05	2.9E-08	2.5E-07	8.4E-08		2.5E-07	2.1E-06	7.8E-07	2.1E-06	7.3E-06	3.6E-07	7.3E-06
SVOC	4-Nitrophenol	100-02-7			2.0E-07	2.0E-07			7.0E-09		7.0E-09		4.6E-08	4.6E-08						2.8E-08	2.8E-08			1.6E-09		1.6E-09		1.3E-08	1.3E-08			
SVOC	Acenaphthene	83-32-9	1.1E-06	4.7E-06	1.7E-07	6.0E-06	8.5E-09	5.7E-08	5.2E-09		5.7E-08	4.5E-07	3.8E-08	4.5E-07		1.9E-08	1.9E-08	6.4E-07	1.0E-06	2.3E-08	1.7E-06	5.1E-09	1.4E-08	1.2E-09		1.4E-08	1.2E-07	1.1E-08	1.2E-07		5.6E-09	5.6E-09
SVOC	Acenaphthylene	208-96-8	4.3E-07			4.3E-07	3.3E-09			9.8E-11	3.3E-09							2.4E-07			2.4E-07	2.0E-09			7.9E-11	2.0E-09						
SVOC	Anthracene	120-12-7	3.3E-08	1.2E-07	8.1E-08	2.3E-07	2.5E-10	1.4E-09	2.6E-09	3.4E-11	2.6E-09	1.1E-08	1.8E-08	1.8E-08		1.0E-08	1.0E-08	1.9E-08	2.6E-08	1.1E-08	5.5E-08	1.5E-10	3.6E-10	5.9E-10	2.7E-11	5.9E-10	3.1E-09	5.4E-09	5.4E-09		3.0E-09	3.0E-09
SVOC	Benzo(a)anthracene	56-55-3																														
SVOC	Benzo(a)pyrene	50-32-8																														
SVOC	Benzo(b)fluoranthene	205-99-2																														
SVOC	Benzo(g,h,i)perylene	191-24-2																														
SVOC	Benzo(k)fluoranthene	207-08-9																														
SVOC	Benzoic Acid	65-85-0	7.0E-06	2.1E-04	3.1E-04	5.3E-04	7.1E-08	2.6E-06	8.8E-06		8.8E-06	2.1E-05	7.0E-05	7.0E-05				3.9E-06	4.6E-05	4.2E-05	9.3E-05	4.3E-08	6.5E-07	2.0E-06		2.0E-06	5.6E-06	2.0E-05	2.0E-05			
SVOC	Benzyl Alcohol	100-51-6																														
SVOC	Butylbenzylphthalate	85-68-7																														
SVOC	Carbazole	86-74-8								4.3E-12	4.3E-12														3.4E-12	3.4E-12						
SVOC	Chrysene	218-01-9																														
SVOC	Di-n-butylphthalate	84-74-2																														
SVOC	Di-n-octylphthalate	117-84-0																														
SVOC	Dibenzo(a,h)anthracene	53-70-3																														
SVOC	Dibenzofuran	132-64-9																														
SVOC	Diethylphthalate	84-66-2																														

Table B-8c: Vapor Concentrations (mg/m³) in Ambient Air from Soil - Hypothetical Future Land Use
Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario: FUTURE

Location of Exposure: AREA 5A (Routine Industrial, Excavation); Area 5A (Construction)

Analyte Group	Substance	CASRN	Routine Industrial: From Area 1	Routine Industrial: From Area 2	Routine Industrial: From Area 3	Total At Area	Excavation: From Area 1	Excavation: From Area 2	Excavation: From Area 3	Excavation: From Area 4B	Excavation: Max	Construction (0-10'): From Area 2	Construction (0-10'): From Area 3	Construction (0-10'): Max	Construction (0-4'): From Area 2	Construction (0-4'): From Area 3	Construction (0-4'): Max
	C/Q (kg/m³ per kg/m²/s)		3.2E-01	9.7E-01	7.2E-01		2.0E-04	8.0E-04	1.7E-03	9.6E-05		3.3E-02	5.8E-02		3.3E-02	5.8E-02	
			C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
SVOC	Dimethylphthalate	131-11-3															
SVOC	Fluoranthene	206-44-0															
SVOC	Fluorene	86-73-7	4.8E-07	2.5E-06	1.0E-07	3.0E-06	3.6E-09	3.0E-08	3.2E-09		3.0E-08	2.4E-07	2.3E-08	2.4E-07		1.4E-08	1.4E-08
SVOC	Hexachlorobenzene	118-74-1															
SVOC	Hexachlorobutadiene	87-68-3															
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5															
SVOC	Isophorone	78-59-1	7.6E-05	2.4E-04	4.8E-04	8.0E-04	5.6E-07	3.0E-06	1.4E-05	6.5E-11	1.4E-05	2.4E-05	1.1E-04	1.1E-04	2.1E-05	3.4E-05	3.4E-05
SVOC	N-Nitroso-di-n-propylamine	621-64-7															
SVOC	N-Nitrosodiphenylamine	86-30-6			2.4E-07	2.4E-07			1.0E-08		1.0E-08		5.4E-08	5.4E-08		1.2E-07	1.2E-07
SVOC	Naphthalene	91-20-3	2.2E-05	1.2E-04	1.1E-04	2.6E-04	3.4E-07	1.5E-06	3.4E-06	4.4E-11	3.4E-06	1.2E-05	2.6E-05	2.6E-05	1.6E-05	2.0E-05	2.0E-05
SVOC	Pentachlorophenol	87-86-5															
SVOC	Phenanthrene	85-01-8															
SVOC	Phenol	108-95-2	5.7E-06	5.0E-05	1.4E-04	2.0E-04	4.7E-08	6.1E-07	3.9E-06		3.9E-06	4.8E-06	3.2E-05	3.2E-05	1.5E-05	2.5E-06	1.5E-05
SVOC	Pyrene	129-00-0															
SVOC	bis(2-Chloroethyl) ether	111-44-4	8.2E-06	4.6E-05		5.4E-05	6.1E-08	5.6E-07			5.6E-07	4.4E-06		4.4E-06			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7															
P/PCB	4,4'-DDD	72-54-8															
P/PCB	4,4'-DDE	72-55-9															
P/PCB	4,4'-DDT	50-29-3															
P/PCB	Aldrin	309-00-2															
P/PCB	Aroclor-1242	3469-21-9															
P/PCB	Aroclor-1248	2672-29-6															
P/PCB	Aroclor-1254	1097-69-1															
P/PCB	Aroclor-1260	1096-82-5															
P/PCB	Dieldrin	60-57-1															
P/PCB	Endosulfan I	959-98-8															
P/PCB	Endosulfan sulfate	1031-07-8															
P/PCB	Endrin	72-20-8															
P/PCB	Endrin aldehyde	7421-93-4															
P/PCB	Endrin ketone	3494-70-5															
P/PCB	Heptachlor	76-44-8															
P/PCB	Heptachlor epoxide	1024-57-3															
P/PCB	Methoxychlor	72-43-5															
P/PCB	alpha-BHC	319-84-6															
P/PCB	alpha-Chlordane	5103-71-9															
P/PCB	beta-BHC	319-85-7															
P/PCB	gamma-BHC	58-89-9															
P/PCB	gamma-Chlordane	5103-74-2															
INORG	Antimony	7440-36-0															
INORG	Arsenic	7440-38-2															
INORG	Barium	7440-39-3															
INORG	Beryllium	7440-41-7															
INORG	Cadmium	7440-43-9															
INORG	Chromium 3+	6065-83-1															
INORG	Chromium 6+	8540-29-9															
INORG	Cobalt	7440-48-4															
INORG	Copper	7440-50-8															
INORG	Cyanide (total)	57-12-5															
INORG	Lead	7439-92-1															
INORG	Manganese	7439-96-5															
INORG	Mercury	7439-97-6															
INORG	Nickel	7440-02-0															
INORG	Selenium	7782-49-2															
INORG	Silver	7440-22-4															
INORG	Thallium	7440-28-0															
INORG	Vanadium	7440-62-2															
INORG	Zinc	7440-66-6															
TIC	Acetaldehyde	75-07-0															
TIC	Acetophenone	98-86-2															
TIC	Butanol, 1-	71-36-3															
TIC	Caprolactam	105-60-2															
TIC	Chlorodifluoromethane	75-45-6															
TIC	Cyclohexanone	108-94-1															
TIC	Diethyl ether	60-29-7															
TIC	Dioxane, 1,4-	123-91-1															
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5															
TIC	Hexane, n-	110-54-3															
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7															
TIC	Phthalic anhydride	85-44-9															

FUTURE

Location of Exposure: AREA 6 (Routine Industrial, Excavation); Area 6 (Construction)

Analyte Group	Substance	CASRN	Routine Industrial: From Area 1	Routine Industrial: From Area 2	Routine Industrial: From Area 3	Total At Area	Excavation: From Area 1	Excavation: From Area 2	Excavation: From Area 3	Excavation: From Area 4B	Excavation: Max	Construction (0-10'): From Area 2	Construction (0-10'): From Area 3	Construction (0-10'): Max	Construction (0-4'): From Area 2	Construction (0-4'): From Area 3	Construction (0-4'): Max
	C/Q (kg/m³ per kg/m²/s)		1.8E-01	2.1E-01	1.0E-01		1.2E-04	2.0E-04	3.9E-04	7.7E-05		8.9E-03	1.7E-02		8.9E-03	1.7E-02	
			C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
SVOC	Dimethylphthalate	131-11-3															
SVOC	Fluoranthene	206-44-0															
SVOC	Fluorene	86-73-7	2.7E-07	5.3E-07	1.4E-08	8.1E-07	2.1E-09	7.5E-09	7.5E-10		7.5E-09	6.4E-08	6.7E-09	6.4E-08		4.2E-09	4.2E-09
SVOC	Hexachlorobenzene	118-74-1															
SVOC	Hexachlorobutadiene	87-68-3															
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5															
SVOC	Isophorone	78-59-1	4.2E-05	5.3E-05	6.6E-05	1.6E-04	3.4E-07	7.5E-07	3.1E-06	5.2E-11	3.1E-06	6.4E-06	3.2E-05	3.2E-05	5.8E-06	1.0E-05	1.0E-05
SVOC	N-Nitroso-di-n-propylamine	621-64-7															
SVOC	N-Nitrosodiphenylamine	86-30-6			3.3E-08	3.3E-08			2.4E-09		2.4E-09		1.6E-08	1.6E-08		3.6E-08	3.6E-08
SVOC	Naphthalene	91-20-3	1.2E-05	2.7E-05	1.6E-05	5.5E-05	2.1E-07	3.8E-07	7.8E-07	3.6E-11	7.8E-07	3.2E-06	7.6E-06	7.6E-06	4.4E-06	5.8E-06	5.8E-06
SVOC	Pentachlorophenol	87-86-5															
SVOC	Phenanthrene	85-01-8															
SVOC	Phenol	108-95-2	3.2E-06	1.1E-05	1.9E-05	3.3E-05	2.8E-08	1.5E-07	9.0E-07		9.0E-07	1.3E-06	9.3E-06	9.3E-06	4.0E-06	7.3E-07	4.0E-06
SVOC	Pyrene	129-00-0															
SVOC	bis(2-Chloroethyl) ether	111-44-4	4.6E-06	1.0E-05		1.5E-05	3.7E-08	1.4E-07			1.4E-07	1.2E-06		1.2E-06			
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7															
P/PCB	4,4'-DDD	72-54-8															
P/PCB	4,4'-DDE	72-55-9															
P/PCB	4,4'-DDT	50-29-3															
P/PCB	Aldrin	309-00-2															
P/PCB	Aroclor-1242	3469-21-9															
P/PCB	Aroclor-1248	2672-29-6															
P/PCB	Aroclor-1254	1097-69-1															
P/PCB	Aroclor-1260	1096-82-5															
P/PCB	Dieldrin	60-57-1															
P/PCB	Endosulfan I	959-98-8															
P/PCB	Endosulfan sulfate	1031-07-8															
P/PCB	Endrin	72-20-8															
P/PCB	Endrin aldehyde	7421-93-4															
P/PCB	Endrin ketone	3494-70-5															
P/PCB	Heptachlor	76-44-8															
P/PCB	Heptachlor epoxide	1024-57-3															
P/PCB	Methoxychlor	72-43-5															
P/PCB	alpha-BHC	319-84-6															
P/PCB	alpha-Chlordane	5103-71-9															
P/PCB	beta-BHC	319-85-7															
P/PCB	gamma-BHC	58-89-9															
P/PCB	gamma-Chlordane	5103-74-2															
INORG	Antimony	7440-36-0															
INORG	Arsenic	7440-38-2															
INORG	Barium	7440-39-3															
INORG	Beryllium	7440-41-7															
INORG	Cadmium	7440-43-9															
INORG	Chromium 3+	6065-83-1															
INORG	Chromium 6+	8540-29-9															
INORG	Cobalt	7440-48-4															
INORG	Copper	7440-50-8															
INORG	Cyanide (total)	57-12-5															
INORG	Lead	7439-92-1															
INORG	Manganese	7439-96-5															
INORG	Mercury	7439-97-6															
INORG	Nickel	7440-02-0															
INORG	Selenium	7782-49-2															
INORG	Silver	7440-22-4															
INORG	Thallium	7440-28-0															
INORG	Vanadium	7440-62-2															
INORG	Zinc	7440-66-6															
TIC	Acetaldehyde	75-07-0															
TIC	Acetophenone	98-86-2															
TIC	Butanol, 1-	71-36-3															
TIC	Caprolactam	105-60-2															
TIC	Chlorodifluoromethane	75-45-6															
TIC	Cyclohexanone	108-94-1															
TIC	Diethyl ether	60-29-7															
TIC	Dioxane, 1,4-	123-91-1															
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5															
TIC	Hexane, n-	110-54-3															
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7															
TIC	Phthalic anhydride	85-44-9															

Table B-9: Vapor Concentrations (mg/m³) in Ambient Air from Water
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		CURRENT & FUTURE				CURRENT & FUTURE			CURRENT & FUTURE			CURRENT & FUTURE		
	Location of Exposure:		AREA 1				AREA 2			AREA 3			AREA 4A		
	Type of Activity at Emission Location:		Routine Industrial			Excavatio	Routine Industrial			Routine Industrial			Routine Industrial		
	Location of Emission:		From Area 4A SW	From Area 4B GW	Total	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 4A SW	From Area 4B GW	Total	From Area 4A SW	From Area 4B GW	Total
	C/Q (kg/m³ per kg/m²/s)		1.2E+00	7.7E-01		5.6E-01	6.7E-01	1.0E-01		4.4E-01	5.6E-02		1.9E+01	2.2E-01	
Analyte Group	Substance	CASRN	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
VOC	1,1,1-Trichloroethane	71-55-6													
VOC	1,1,2,2-Tetrachloroethane	79-34-5													
VOC	1,1,2-Trichloroethane	79-00-5													
VOC	1,1-Dichloroethane	75-34-3		1.86E-09	1.86E-09	1.54E-04		2.42E-10	2.42E-10		1.35E-10	1.35E-10		5.32E-10	5.32E-10
VOC	1,1-Dichloroethene	75-35-4													
VOC	1,2,4-Trimethylbenzene	95-63-6													
VOC	1,2-Dichloroethane	107-06-2		5.85E-10	5.85E-10			7.60E-11	7.60E-11		4.26E-11	4.26E-11		1.67E-10	1.67E-10
VOC	1,2-Dichloroethene (total)	540-59-0		1.09E-09	1.09E-09	8.40E-05		1.41E-10	1.41E-10		7.89E-11	7.89E-11		3.10E-10	3.10E-10
VOC	1,2-Dichloropropane	78-87-5													
VOC	1,3,5-Trimethylbenzene	108-67-8													
VOC	2-Butanone	78-93-3	4.55E-06		4.55E-06		2.54E-06		2.54E-06	1.67E-06		1.67E-06	7.20E-05		7.20E-05
VOC	2-Hexanone	591-78-6													
VOC	4-Methyl-2-pentanone	108-10-1				7.21E-06									
VOC	Acetone	67-64-1	8.27E-05		8.27E-05		4.62E-05		4.62E-05	3.03E-05		3.03E-05	1.31E-03		1.31E-03
VOC	Benzene	71-43-2	5.77E-03	2.90E-05	5.80E-03	6.68E-01	3.22E-03	3.76E-06	3.23E-03	2.12E-03	2.11E-06	2.12E-03	9.14E-02	8.28E-06	9.14E-02
VOC	Bromodichloromethane	75-27-4													
VOC	Carbon Disulfide	75-15-0													
VOC	Carbon Tetrachloride	56-23-5													
VOC	Chlorobenzene	108-90-7				5.32E-04									
VOC	Chloroethane	75-00-3	1.75E-03	5.16E-07	1.75E-03	1.40E-02	9.77E-04	6.70E-08	9.77E-04	6.42E-04	3.75E-08	6.42E-04	2.77E-02	1.47E-07	2.77E-02
VOC	Chloroform	67-66-3													
VOC	Chloromethane	74-87-3													
VOC	Ethyl Benzene	100-41-4		1.80E-07	1.80E-07	6.33E-03		2.34E-08	2.34E-08		1.31E-08	1.31E-08		5.14E-08	5.14E-08
VOC	Methylene Chloride	75-09-2		2.42E-08	2.42E-08	6.30E-06		3.14E-09	3.14E-09		1.76E-09	1.76E-09		6.92E-09	6.92E-09
VOC	Styrene	100-42-5													
VOC	Tetrachloroethene	127-18-4													
VOC	Tetrahydrofuran	109-99-9													
VOC	Toluene	108-88-3		5.85E-07	5.85E-07	1.42E-02		7.59E-08	7.59E-08		4.25E-08	4.25E-08		1.67E-07	1.67E-07
VOC	Trichloroethene	79-01-6													
VOC	Vinyl Chloride	75-01-4		3.27E-11	3.27E-11	1.21E-04		4.25E-12	4.25E-12		2.38E-12	2.38E-12		9.35E-12	9.35E-12
VOC	Xylenes (total)	1330-20-7		7.76E-07	7.76E-07	1.72E-02		1.01E-07	1.01E-07		5.64E-08	5.64E-08		2.22E-07	2.22E-07
VOC	cis-1,2-Dichloroethene	156-59-2		6.68E-11	6.68E-11			8.68E-12	8.68E-12		4.86E-12	4.86E-12		1.91E-11	1.91E-11
VOC	m,p-xylene	6777-61-2													
VOC	ortho-xylene	95-47-6													
VOC	p-Cymene	99-87-6													
VOC	trans-1,2-Dichloroethene	156-60-5		1.41E-09	1.41E-09			1.83E-10	1.83E-10		1.02E-10	1.02E-10		4.02E-10	4.02E-10
SVOC	1,2,4-Trichlorobenzene	120-82-1													
SVOC	1,2-Dichlorobenzene	95-50-1		1.19E-08	1.19E-08	2.44E-04		1.55E-09	1.55E-09		8.66E-10	8.66E-10		3.40E-09	3.40E-09
SVOC	1,3-Dichlorobenzene	541-73-1				1.45E-05									
SVOC	1,4-Dichlorobenzene	106-46-7		7.01E-10	7.01E-10	4.81E-05		9.10E-11	9.10E-11		5.10E-11	5.10E-11		2.00E-10	2.00E-10
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	9.25E-05	6.24E-08	9.26E-05	9.18E-04	5.17E-05	8.11E-09	5.17E-05	3.39E-05	4.54E-09	3.39E-05	1.47E-03	1.78E-08	1.47E-03
SVOC	2,4,5-Trichlorophenol	95-95-4													
SVOC	2,4-Dichlorophenol	120-83-2													
SVOC	2,4-Dimethylphenol	105-67-9		2.83E-08	2.83E-08	2.02E-05		3.67E-09	3.67E-09		2.06E-09	2.06E-09		8.07E-09	8.07E-09
SVOC	2,4-Dinitrotoluene	121-14-2													
SVOC	2,6-Dinitrotoluene	606-20-2													
SVOC	2-Chloronaphthalene	91-58-7													
SVOC	2-Methylnaphthalene	91-57-6				1.22E-04									
SVOC	2-Methylphenol	95-48-7				1.51E-06									
SVOC	3,3'-Dichlorobenzidine	91-94-1													
SVOC	4-Bromophenyl-phenylether	101-55-3													
SVOC	4-Chloro-3-methylphenol	59-50-7				1.93E-06									
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3													
SVOC	4-Methylphenol	106-44-5	8.28E-08	1.62E-08	9.91E-08	2.99E-06	4.63E-08	2.11E-09	4.84E-08	3.04E-08	1.18E-09	3.16E-08	1.31E-06	4.64E-09	1.32E-06
SVOC	4-Nitrophenol	100-02-7													
SVOC	Acenaphthene	83-32-9													
SVOC	Acenaphthylene	208-96-8													
SVOC	Anthracene	120-12-7													
SVOC	Benzo(a)anthracene	56-55-3													
SVOC	Benzo(a)pyrene	50-32-8													
SVOC	Benzo(b)fluoranthene	205-99-2													
SVOC	Benzo(g,h,i)perylene	191-24-2													
SVOC	Benzo(k)fluoranthene	207-08-9													
SVOC	Benzoic Acid	65-85-0				1.85E-06									
SVOC	Benzyl Alcohol	100-51-6													
SVOC	Butylbenzylphthalate	85-68-7													
SVOC	Carbazole	86-74-8													
SVOC	Chrysene	218-01-9													
SVOC	Di-n-butylphthalate	84-74-2													
SVOC	Di-n-octylphthalate	117-84-0													
SVOC	Dibenzo(a,h)anthracene	53-70-3													
SVOC	Dibenzofuran	132-64-9													
SVOC	Diethylphthalate	84-66-2													
SVOC	Dimethylphthalate	131-11-3													

	Current/Future Scenario:		CURRENT & FUTURE			FUTURE	CURRENT & FUTURE			FUTURE			FUTURE	CURRENT & FUTURE			FUTURE		
	Location of Exposure:		AREA 4B				Area 5A						Area 5B	AREA 6					
	Type of Activity at Emission Location:		Routine Industrial			Excavation	Routine Industrial			Excavation			Excavation	Routine Industrial			Excavation		
	Location of Emission:		From Area 4A SW	From Area 4B GW	Total	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 1	From Area 4B	Max	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 1	From Area 4B	Max
	C/Q (kg/m³ per kg/m²/s)		8.7E-01	1.3E+01		5.6E-01	3.4E-01	6.6E-02		2.0E-04	9.6E-05		5.6E-01	8.3E-01	5.4E-02		1.2E-04	7.7E-05	
Analyte Group	Substance	CASRN	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)	C_{air} (mg/m³)
VOC	1,1,1-Trichloroethane	71-55-6																	
VOC	1,1,2,2-Tetrachloroethane	79-34-5																	
VOC	1,1,2-Trichloroethane	79-00-5																	
VOC	1,1-Dichloroethane	75-34-3		3.14E-08	3.14E-08	3.56E-05		1.60E-10	1.60E-10	5.56E-08	6.16E-09	5.56E-08			1.31E-10	1.31E-10	3.33E-08	4.94E-09	3.33E-08
VOC	1,1-Dichloroethene	75-35-4																	
VOC	1,2,4-Trimethylbenzene	95-63-6																	
VOC	1,2-Dichloroethane	107-06-2		9.88E-09	9.88E-09	1.13E-05		5.02E-11	5.02E-11		1.96E-09	1.96E-09			4.10E-11	4.10E-11		1.57E-09	1.57E-09
VOC	1,2-Dichloroethene (total)	540-59-0		1.83E-08	1.83E-08	2.40E-05		9.30E-11	9.30E-11	3.02E-08	4.15E-09	3.02E-08			7.61E-11	7.61E-11	1.81E-08	3.33E-09	1.81E-08
VOC	1,2-Dichloropropane	78-87-5																	
VOC	1,3,5-Trimethylbenzene	108-67-8																	
VOC	2-Butanone	78-93-3	3.30E-06		3.30E-06		1.29E-06		1.29E-06					3.15E-06		3.15E-06			
VOC	2-Hexanone	591-78-6																	
VOC	4-Methyl-2-pentanone	108-10-1								2.60E-09		2.60E-09					1.56E-09		1.56E-09
VOC	Acetone	67-64-1	5.99E-05		5.99E-05		2.34E-05		2.34E-05					5.72E-05		5.72E-05			
VOC	Benzene	71-43-2	4.18E-03	4.89E-04	4.67E-03	6.68E-01	1.64E-03	2.48E-06	1.64E-03	2.40E-04	1.15E-04	2.40E-04	5.74E-02	3.99E-03	2.03E-06	3.99E-03	1.44E-04	9.26E-05	1.44E-04
VOC	Bromodichloromethane	75-27-4											4.06E-06						
VOC	Carbon Disulfide	75-15-0																	
VOC	Carbon Tetrachloride	56-23-5																	
VOC	Chlorobenzene	108-90-7								1.91E-07		1.91E-07					1.15E-07		1.15E-07
VOC	Chloroethane	75-00-3	1.27E-03	8.70E-06	1.28E-03	1.40E-02	4.96E-04	4.42E-08	4.96E-04	5.04E-06	2.42E-06	5.04E-06	7.36E-03	1.21E-03	3.62E-08	1.21E-03	3.02E-06	1.94E-06	3.02E-06
VOC	Chloroform	67-66-3											5.38E-06						
VOC	Chloromethane	74-87-3																	
VOC	Ethyl Benzene	100-41-4		3.04E-06	3.04E-06	4.49E-03		1.54E-08	1.54E-08	2.28E-06	7.75E-07	2.28E-06			1.26E-08	1.26E-08	1.37E-06	6.22E-07	1.37E-06
VOC	Methylene Chloride	75-09-2		4.09E-07	4.09E-07	4.41E-04		2.08E-09	2.08E-09	2.27E-09	7.62E-08	7.62E-08	4.41E-04		1.70E-09	1.70E-09	1.36E-09	6.12E-08	6.12E-08
VOC	Styrene	100-42-5																	
VOC	Tetrachloroethene	127-18-4																	
VOC	Tetrahydrofuran	109-99-9																	
VOC	Toluene	108-88-3		9.87E-06	9.87E-06	1.42E-02		5.01E-08	5.01E-08	5.10E-06	2.45E-06	5.10E-06	1.23E-05		4.10E-08	4.10E-08	3.06E-06	1.96E-06	3.06E-06
VOC	Trichloroethene	79-01-6																	
VOC	Vinyl Chloride	75-01-4		5.52E-10	5.52E-10	6.78E-06		2.80E-12	2.80E-12	4.34E-08	1.17E-09	4.34E-08			2.29E-12	2.29E-12	2.60E-08	9.40E-10	2.60E-08
VOC	Xylenes (total)	1330-20-7		1.31E-05	1.31E-05	1.72E-02		6.65E-08	6.65E-08	6.20E-06	2.98E-06	6.20E-06			5.44E-08	5.44E-08	3.72E-06	2.39E-06	3.72E-06
VOC	cis-1,2-Dichloroethene	156-59-2		1.13E-09	1.13E-09	1.20E-06		5.73E-12	5.73E-12		2.07E-10	2.07E-10			4.69E-12	4.69E-12		1.66E-10	1.66E-10
VOC	m,p-xylene	6777-61-2																	
VOC	ortho-xylene	95-47-6																	
VOC	p-Cymene	99-87-6																	
VOC	trans-1,2-Dichloroethene	156-60-5		2.38E-08	2.38E-08	2.41E-05		1.21E-10	1.21E-10		4.16E-09	4.16E-09	6.02E-06		9.87E-11	9.87E-11		3.34E-09	3.34E-09
SVOC	1,2,4-Trichlorobenzene	120-82-1																	
SVOC	1,2-Dichlorobenzene	95-50-1		2.01E-07	2.01E-07	2.44E-04		1.02E-09	1.02E-09	8.78E-08	4.22E-08	8.78E-08			8.35E-10	8.35E-10	5.27E-08	3.38E-08	5.27E-08
SVOC	1,3-Dichlorobenzene	541-73-1								5.23E-09		5.23E-09					3.14E-09		3.14E-09
SVOC	1,4-Dichlorobenzene	106-46-7		1.18E-08	1.18E-08	1.44E-05		6.01E-11	6.01E-11	1.73E-08	2.50E-09	1.73E-08			4.91E-11	4.91E-11	1.04E-08	2.00E-09	1.04E-08
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	6.71E-05	1.05E-06	6.82E-05	9.18E-04	2.62E-05	5.35E-09	2.62E-05	3.31E-07	1.59E-07	3.31E-07		6.40E-05	4.38E-09	6.40E-05	1.98E-07	1.27E-07	1.98E-07
SVOC	2,4,5-Trichlorophenol	95-95-4																	
SVOC	2,4-Dichlorophenol	120-83-2																	
SVOC	2,4-Dimethylphenol	105-67-9		4.77E-07	4.77E-07	2.02E-05		2.42E-09	2.42E-09	7.26E-09	3.48E-09	7.26E-09			1.98E-09	1.98E-09	4.35E-09	2.79E-09	4.35E-09
SVOC	2,4-Dinitrotoluene	121-14-2																	
SVOC	2,6-Dinitrotoluene	606-20-2											5.50E-08						
SVOC	2-Chloronaphthalene	91-58-7																	
SVOC	2-Methylnaphthalene	91-57-6								4.38E-08		4.38E-08					2.63E-08		2.63E-08
SVOC	2-Methylphenol	95-48-7								5.44E-10		5.44E-10					3.26E-10		3.26E-10
SVOC	3,3'-Dichlorobenzidine	91-94-1																	
SVOC	4-Bromophenyl-phenylether	101-55-3																	
SVOC	4-Chloro-3-methylphenol	59-50-7								6.96E-10		6.96E-10					4.18E-10		4.18E-10
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3																	
SVOC	4-Methylphenol	106-44-5	6.01E-08	2.74E-07	3.34E-07	2.99E-06	2.35E-08	1.39E-09	2.49E-08	1.08E-09	5.17E-10	1.08E-09		5.73E-08	1.14E-09	5.84E-08	6.46E-10	4.15E-10	6.46E-10
SVOC	4-Nitrophenol	100-02-7																	
SVOC	Acenaphthene	83-32-9																	
SVOC	Acenaphthylene	208-96-8																	
SVOC	Anthracene	120-12-7																	
SVOC	Benzo(a)anthracene	56-55-3																	
SVOC	Benzo(a)pyrene	50-32-8																	
SVOC	Benzo(b)fluoranthene	205-99-2																	
SVOC	Benzo(g,h,i)perylene	191-24-2																	
SVOC	Benzo(k)fluoranthene	207-08-9																	
SVOC	Benzoic Acid	65-85-0								6.65E-10		6.65E-10					3.99E-10		3.99E-10
SVOC	Benzyl Alcohol	100-51-6																	
SVOC	Butylbenzylphthalate	85-68-7																	
SVOC	Carbazole	86-74-8																	
SVOC	Chrysene	218-01-9																	
SVOC	Di-n-butylphthalate	84-74-2																	
SVOC	Di-n-octylphthalate	117-84-0																	
SVOC	Dibenzo(a,h)anthracene	53-70-3																	
SVOC	Dibenzofuran	132-64-9																	
SVOC	Diethylphthalate	84-66-2																	
SVOC	Dimethylphthalate	131-11-3																	

Table B-9: Vapor Concentrations (mg/m^3) in Ambient Air from Water
ACS NPL Site, Griffith, Indiana

		Current/Future Scenario:	CURRENT & FUTURE				CURRENT & FUTURE			CURRENT & FUTURE			CURRENT & FUTURE			CURRENT & FUTURE			FUTURE	CURRENT & FUTURE			FUTURE			FUTURE	CURRENT & FUTURE			FUTURE		
		Location of Exposure:	AREA 1				AREA 2			AREA 3			AREA 4A			AREA 4B				Area 5A						Area 5B	AREA 6					
		Type of Activity at Emission Location:	Routine Industrial			Excavatio	Routine Industrial			Routine Industrial			Routine Industrial			Routine Industrial			Excavation	Routine Industrial			Excavation			Excavation	Routine Industrial			Excavation		
		Location of Emission:	From Area 4A SW	From Area 4B GW	Total	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 4A SW	From Area 4B GW	Total	From Area 4A SW	From Area 4B GW	Total	From Area 4A SW	From Area 4B GW	Total	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 1	From Area 4B	Max	At Area	From Area 4A SW	From Area 4B GW	Total	From Area 1	From Area 4B	Max
		C/Q (kg/m^3 per $kg/m^2/s$)	1.2E+00	7.7E-01		5.6E-01	6.7E-01	1.0E-01		4.4E-01	5.6E-02		1.9E+01	2.2E-01		8.7E-01	1.3E+01		5.6E-01	3.4E-01	6.6E-02		2.0E-04	9.6E-05		5.6E-01	8.3E-01	5.4E-02		1.2E-04	7.7E-05	
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	Fluoranthene	206-44-0																														
SVOC	Fluorene	86-73-7																														
SVOC	Hexachlorobenzene	118-74-1																														
SVOC	Hexachlorobutadiene	87-68-3																														
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5																														
SVOC	Isophorone	78-59-1	2.33E-06	1.50E-09	2.33E-06		1.30E-06	1.95E-10	1.30E-06	8.55E-07	1.09E-10	8.55E-07	3.69E-05	4.28E-10	3.69E-05	1.69E-06	2.53E-08	1.72E-06	4.05E-06	6.60E-07	1.28E-10	6.61E-07		6.99E-10	6.99E-10	5.40E-07	1.61E-06	1.05E-10	1.61E-06		5.61E-10	5.61E-10
SVOC	N-Nitroso-di-n-propylamine	621-64-7																														
SVOC	N-Nitrosodiphenylamine	86-30-6																														
SVOC	Naphthalene	91-20-3		6.65E-10	6.65E-10	3.35E-04		8.64E-11	8.64E-11		4.84E-11	4.84E-11		1.90E-10	1.90E-10		1.12E-08	1.12E-08	1.42E-05		5.70E-11	5.70E-11	1.21E-07	2.45E-09	1.21E-07			4.66E-11	4.66E-11	7.24E-08	1.96E-09	7.24E-08
SVOC	Pentachlorophenol	87-86-5																														
SVOC	Phenanthrene	85-01-8																														
SVOC	Phenol	108-95-2		6.46E-08	6.46E-08	9.81E-06		8.38E-09	8.38E-09		4.69E-09	4.69E-09		1.84E-08	1.84E-08		1.09E-06	1.09E-06	9.81E-06		5.53E-09	5.53E-09	3.53E-09	1.70E-09	3.53E-09	4.05E-06		4.53E-09	4.53E-09	2.12E-09	1.36E-09	2.12E-09
SVOC	Pyrene	129-00-0																														
SVOC	bis(2-Chloroethyl) ether	111-44-4	1.45E-05	3.56E-08	1.46E-05	1.96E-04	8.11E-06	4.63E-09	8.11E-06	5.33E-06	2.59E-09	5.33E-06	2.30E-04	1.02E-08	2.30E-04	1.05E-05	6.01E-07	1.11E-05	1.96E-04	4.12E-06	3.05E-09	4.12E-06	7.04E-08	3.38E-08	7.04E-08	2.20E-05	1.00E-05	2.50E-09	1.00E-05	4.23E-08	2.71E-08	4.23E-08
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7																														
P/PCB	4,4'-DDD	72-54-8																														
P/PCB	4,4'-DDE	72-55-9																														
P/PCB	4,4'-DDT	50-29-3																														
P/PCB	Aldrin	309-00-2																														
P/PCB	Aroclor-1242	3469-21-9																														
P/PCB	Aroclor-1248	2672-29-6																														
P/PCB	Aroclor-1254	1097-69-1																														
P/PCB	Aroclor-1260	1096-82-5																														
P/PCB	Dieldrin	60-57-1																														
P/PCB	Endosulfan I	959-98-8																														
P/PCB	Endosulfan sulfate	1031-07-8																														
P/PCB	Endrin	72-20-8																														
P/PCB	Endrin aldehyde	7421-93-4																														
P/PCB	Endrin ketone	3494-70-5																														
P/PCB	Heptachlor	76-44-8																														
P/PCB	Heptachlor epoxide	1024-57-3																														
P/PCB	Methoxychlor	72-43-5																														
P/PCB	alpha-BHC	319-84-6																														
P/PCB	alpha-Chlordane	5103-71-9																														
P/PCB	beta-BHC	319-85-7																														
P/PCB	gamma-BHC	58-89-9																														
P/PCB	gamma-Chlordane	5103-74-2																														
INORG	Antimony	7440-36-0																														
INORG	Arsenic	7440-38-2																														
INORG	Barium	7440-39-3																														
INORG	Beryllium	7440-41-7																														
INORG	Cadmium	7440-43-9																														
INORG	Chromium 3+	6065-83-1																														
INORG	Chromium 6+	8540-29-9																														
INORG	Cobalt	7440-48-4																														
INORG	Copper	7440-50-8																														
INORG	Cyanide (total)	57-12-5																														
INORG	Lead	7439-92-1																														
INORG	Manganese	7439-96-5																														
INORG	Mercury	7439-97-6																														
INORG	Nickel	7440-02-0																														
INORG	Selenium	7782-49-2																														
INORG	Silver	7440-22-4																														
INORG	Thallium	7440-28-0																														
INORG	Vanadium	7440-62-2																														
INORG	Zinc	7440-66-6																														
TIC	Acetaldehyde	75-07-0																														
TIC	Acetophenone	98-86-2																														
TIC	Butanol, 1-	71-36-3																														
TIC	Caprolactam	105-60-2																														
TIC	Chlorodifluoromethane	75-45-6																														
TIC	Cyclohexanone	108-94-1																														
TIC	Diethyl ether	60-29-7																														
TIC	Dioxane, 1,4-	123-91-1																														
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5																														
TIC	Hexane, n-	110-54-3																														
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7																														
TIC	Phthalic anhydride	85-44-9																														

[1] Hypothetical future air concentrations due to vapor emissions from water are expected to be the same as those estimated for current scenarios. In addition, upper aquifer water in Areas 4B and 5B could be exposed during hypothetical future excavation.

Table B-10a:
Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Current Location of Exposure: AREA 1 Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Current AREA 1 Excavation At Area C_{air} (mg/m^3)	Current AREA 4A Undeveloped All on-site areas C_{air} (mg/m^3)	Current AREA 4B Undeveloped All on-site areas C_{air} (mg/m^3)	Current Area 5A Routine/Undevel All on-site areas C_{air} (mg/m^3)	Current Area 5A Excavation Area 1 C_{air} (mg/m^3)	Current AREA 6 Routine/Undevel All on-site areas C_{air} (mg/m^3)	Current AREA 6 Excavation Area 1 C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.20E-04	3.35E-01	1.99E-05	4.48E-05	1.61E-04	1.21E-04	3.49E-05	7.23E-05
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.33E-07	1.33E-04	2.21E-08	4.97E-08	1.79E-07	4.78E-08	3.87E-08	2.87E-08
VOC	1,1,2-Trichloroethane	79-00-5	4.04E-07	6.08E-04	1.58E-08	7.74E-08	1.08E-08	2.19E-07	6.06E-09	1.31E-07
VOC	1,1-Dichloroethane	75-34-3	1.03E-04	4.85E-03	1.72E-05	3.87E-05	1.40E-04	1.74E-06	3.02E-05	1.05E-06
VOC	1,1-Dichloroethene	75-35-4								
VOC	1,2,4-Trimethylbenzene	95-63-6								
VOC	1,2-Dichloroethane	107-06-2	4.13E-05	5.29E-03	6.88E-06	1.55E-05	5.56E-05	1.91E-06	1.20E-05	1.14E-06
VOC	1,2-Dichloroethene (total)	540-59-0	1.78E-04	4.19E-02	3.03E-05	6.82E-05	3.03E-04	1.51E-05	5.97E-05	9.05E-06
VOC	1,2-Dichloropropane	78-87-5	4.08E-05	3.04E-03	6.81E-06	1.53E-05	5.53E-05	1.10E-06	1.19E-05	6.57E-07
VOC	1,3,5-Trimethylbenzene	108-67-8								
VOC	2-Butanone	78-93-3	4.57E-06	1.77E-05	7.20E-05	3.30E-06	1.31E-06	6.38E-09	3.15E-06	3.83E-09
VOC	2-Hexanone	591-78-6	8.89E-04		1.48E-04	3.33E-04	1.20E-03		2.59E-04	
VOC	4-Methyl-2-pentanone	108-10-1	1.05E-04	1.15E-02	1.76E-05	3.96E-05	1.42E-04	4.13E-06	3.08E-05	2.48E-06
VOC	Acetone	67-64-1	2.35E-04	1.94E-02	1.33E-03	1.17E-04	2.29E-04	7.00E-06	1.02E-04	4.20E-06
VOC	Benzene	71-43-2	5.91E-03	7.27E-01	9.14E-02	4.71E-03	1.80E-03	2.62E-04	4.03E-03	1.57E-04
VOC	Bromodichloromethane	75-27-4								
VOC	Carbon Disulfide	75-15-0	6.10E-08	1.18E-06	2.39E-09	1.17E-08	1.63E-09	4.24E-10	9.15E-10	2.55E-10
VOC	Carbon Tetrachloride	56-23-5								
VOC	Chlorobenzene	108-90-7	5.85E-06	1.28E-03	1.48E-06	3.24E-06	5.07E-05	4.62E-07	7.05E-06	2.77E-07
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	2.77E-02	1.28E-03	4.96E-04	5.04E-06	1.21E-03	3.02E-06
VOC	Chloroform	67-66-3	1.44E-04	5.48E-02	2.40E-05	5.40E-05	1.94E-04	1.97E-05	4.20E-05	1.18E-05
VOC	Chloromethane	74-87-3								
VOC	Ethyl Benzene	100-41-4	6.68E-04	5.70E-02	1.17E-04	2.65E-04	1.37E-03	2.05E-05	2.53E-04	1.23E-05
VOC	Methylene Chloride	75-09-2	3.54E-04	7.55E-02	5.91E-05	1.33E-04	4.81E-04	2.72E-05	1.04E-04	1.63E-05
VOC	Styrene	100-42-5	2.78E-05	3.10E-03	5.14E-06	1.15E-05	8.05E-05	1.12E-06	1.35E-05	6.70E-07
VOC	Tetrachloroethene	127-18-4	1.66E-03	6.58E-02	3.01E-04	6.73E-04	4.43E-03	2.37E-05	7.55E-04	1.42E-05
VOC	Tetrahydrofuran	109-99-9								
VOC	Toluene	108-88-3	7.45E-03	1.36E-01	1.31E-03	2.94E-03	1.54E-02	4.90E-05	2.85E-03	2.94E-05
VOC	Trichloroethene	79-01-6	4.89E-04	5.01E-02	8.84E-05	1.98E-04	1.27E-03	1.80E-05	2.19E-04	1.08E-05
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-07	2.06E-06	7.39E-06	4.34E-08	1.60E-06	2.60E-08
VOC	Xylenes (total)	1330-20-7	4.30E-03	7.26E-02	7.34E-04	1.67E-03	8.73E-03	2.61E-05	1.60E-03	1.57E-05
VOC	cis-1,2-Dichloroethene	156-59-2	1.62E-06	2.09E-01	2.71E-07	6.10E-07	2.19E-06	7.52E-05	4.74E-07	4.51E-05
VOC	m,p-xylene	136777-61-2	9.38E-06	5.68E-02	1.56E-06	3.52E-06	1.26E-05	2.05E-05	2.74E-06	1.23E-05
VOC	ortho-xylene	95-47-6	4.51E-06	2.48E-02	7.52E-07	1.69E-06	6.07E-06	8.91E-06	1.32E-06	5.35E-06
VOC	p-Cymene	99-87-6								
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		4.02E-10	2.38E-08	1.21E-10		9.87E-11	
SVOC	1,2,4-Trichlorobenzene	120-82-1	9.61E-06	4.69E-05	1.60E-06	3.60E-06	1.29E-05	1.69E-08	2.80E-06	1.01E-08
SVOC	1,2-Dichlorobenzene	95-50-1	1.86E-04	7.28E-04	3.11E-05	7.01E-05	2.53E-04	2.62E-07	5.46E-05	1.57E-07
SVOC	1,3-Dichlorobenzene	541-73-1		1.46E-05				5.24E-09		3.15E-09
SVOC	1,4-Dichlorobenzene	106-46-7	3.55E-06	2.37E-04	5.92E-07	1.34E-06	4.78E-06	8.52E-08	1.04E-06	5.11E-08
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1	9.26E-05	9.18E-04	1.47E-03	6.82E-05	2.62E-05	3.31E-07	6.40E-05	1.98E-07
SVOC	2,4,5-Trichlorophenol	95-95-4	2.16E-09		5.46E-10	1.20E-09	1.87E-08		2.60E-09	
SVOC	2,4-Dichlorophenol	120-83-2		1.44E-05				5.17E-09		3.10E-09
SVOC	2,4-Dimethylphenol	105-67-9	6.19E-06	5.21E-05	1.04E-06	2.81E-06	9.08E-06	1.88E-08	1.90E-06	1.13E-08
SVOC	2,4-Dinitrotoluene	121-14-2								
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-07	3.69E-07	1.33E-06		2.87E-07	
SVOC	2-Chloronaphthalene	91-58-7								
SVOC	2-Methylnaphthalene	91-57-6	4.12E-05	4.02E-04	4.69E-06	1.24E-05	4.80E-05	1.45E-07	8.99E-06	8.68E-08
SVOC	2-Methylphenol	95-48-7	1.69E-05	4.72E-05	2.84E-06	6.38E-06	2.45E-05	1.70E-08	5.15E-06	1.02E-08
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.32E-10	1.17E-08	5.16E-12	2.52E-11	3.51E-12	4.20E-12	1.97E-12	2.52E-12
SVOC	4-Bromophenyl-phenylether	101-55-3								
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06				6.96E-10		4.18E-10

Table B-10a:
Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Current Location of Exposure: AREA 1 Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Current AREA 1 Excavation At Area C_{air} (mg/m^3)	Current AREA 4A Undeveloped All on-site areas C_{air} (mg/m^3)	Current AREA 4B Undeveloped All on-site areas C_{air} (mg/m^3)	Current Area 5A Routine/Undevel All on-site areas C_{air} (mg/m^3)	Current Area 5A Excavation Area 1 C_{air} (mg/m^3)	Current AREA 6 Routine/Undevel All on-site areas C_{air} (mg/m^3)	Current AREA 6 Excavation Area 1 C_{air} (mg/m^3)
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3								
SVOC	4-Methylphenol	106-44-5	6.20E-05	1.38E-04	1.17E-05	2.36E-05	8.79E-05	4.97E-08	1.87E-05	2.98E-08
SVOC	4-Nitrophenol	100-02-7								
SVOC	Acenaphthene	83-32-9	3.51E-06	2.41E-05	5.85E-07	1.32E-06	4.80E-06	8.69E-09	1.03E-06	5.21E-09
SVOC	Acenaphthylene	208-96-8	1.09E-06	9.32E-06	4.28E-08	2.09E-07	2.91E-08	3.35E-09	1.64E-08	2.01E-09
SVOC	Anthracene	120-12-7	1.93E-07	7.40E-07	1.98E-08	5.48E-08	1.65E-07	2.66E-10	3.32E-08	1.60E-10
SVOC	Benzo(a)anthracene	56-55-3	1.49E-10	6.56E-10	2.10E-11	5.09E-11	2.28E-10	2.36E-13	4.27E-11	1.42E-13
SVOC	Benzo(a)pyrene	50-32-8	1.08E-10	9.17E-10	1.14E-11	3.11E-11	7.74E-11	3.30E-13	1.72E-11	1.98E-13
SVOC	Benzo(b)fluoranthene	205-99-2	2.55E-10	9.56E-10	3.58E-11	8.61E-11	2.86E-10	3.44E-13	6.12E-11	2.06E-13
SVOC	Benzo(g,h,i)perylene	191-24-2	5.64E-11		9.40E-12	2.12E-11	7.60E-11		1.65E-11	
SVOC	Benzo(k)fluoranthene	207-08-9	2.47E-10	8.06E-10	3.55E-11	8.45E-11	2.86E-10	2.90E-13	6.11E-11	1.74E-13
SVOC	Benzoic Acid	65-85-0	1.59E-04	2.00E-04	2.65E-05	5.96E-05	2.14E-04	7.19E-08	4.64E-05	4.31E-08
SVOC	Benzyl Alcohol	100-51-6	9.97E-10		1.66E-10	3.74E-10	1.34E-09		2.91E-10	
SVOC	Butylbenzylphthalate	85-68-7	1.59E-08	5.58E-06	2.65E-09	5.96E-09	2.19E-08	2.01E-09	4.70E-09	1.21E-09
SVOC	Carbazole	86-74-8								
SVOC	Chrysene	218-01-9	1.95E-10	8.22E-10	2.71E-11	6.56E-11	2.43E-10	2.96E-13	4.92E-11	1.78E-13
SVOC	Di-n-butylphthalate	84-74-2	2.93E-09	3.80E-06	4.90E-10	1.11E-09	4.39E-09	1.37E-09	9.06E-10	8.21E-10
SVOC	Di-n-octylphthalate	117-84-0	5.64E-10	4.47E-07	8.56E-11	2.00E-10	7.09E-10	1.61E-10	1.50E-10	9.67E-11
SVOC	Dibenzo(a,h)anthracene	53-70-3								
SVOC	Dibenzofuran	132-64-9	9.59E-11	1.90E-07	1.61E-11	3.63E-11	1.43E-10	6.85E-11	2.97E-11	4.11E-11
SVOC	Diethylphthalate	84-66-2	9.31E-10	6.98E-07	1.55E-10	3.49E-10	1.26E-09	2.51E-10	2.72E-10	1.51E-10
SVOC	Dimethylphthalate	131-11-3	9.79E-09	2.42E-06	1.63E-09	3.67E-09	1.32E-08	8.71E-10	2.86E-09	5.22E-10
SVOC	Fluoranthene	206-44-0	2.30E-10	1.70E-07	3.18E-11	7.78E-11	3.37E-10	6.12E-11	6.37E-11	3.67E-11
SVOC	Fluorene	86-73-7	1.83E-06	1.04E-05	3.05E-07	6.87E-07	2.52E-06	3.74E-09	5.40E-07	2.24E-09
SVOC	Hexachlorobenzene	118-74-1	1.82E-11	3.22E-10	7.12E-13	3.48E-12	4.85E-13	1.16E-13	2.73E-13	6.96E-14
SVOC	Hexachlorobutadiene	87-68-3	5.14E-10	2.71E-07	8.56E-11	1.93E-10	6.92E-10	9.77E-11	1.50E-10	5.86E-11
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	8.02E-11	4.89E-10	9.86E-12	2.50E-11	7.17E-11	1.76E-13	1.58E-11	1.06E-13
SVOC	Isophorone	78-59-1	1.90E-04	1.56E-03	6.82E-05	7.23E-05	2.77E-04	5.62E-07	5.91E-05	3.37E-07
SVOC	N-Nitroso-di-n-propylamine	621-64-7								
SVOC	N-Nitrosodiphenylamine	86-30-6	6.15E-08		1.56E-08	3.41E-08	5.33E-07		7.41E-08	
SVOC	Naphthalene	91-20-3	9.43E-05	1.29E-03	1.60E-05	3.59E-05	1.48E-04	4.66E-07	3.02E-05	2.79E-07
SVOC	Pentachlorophenol	87-86-5	1.74E-09	8.77E-07	2.91E-10	6.55E-10	2.40E-09	3.16E-10	5.15E-10	1.89E-10
SVOC	Phenanthrene	85-01-8	7.18E-10	4.03E-07	1.16E-10	2.65E-10	1.02E-09	1.45E-10	2.11E-10	8.71E-11
SVOC	Phenol	108-95-2	3.78E-05	1.41E-04	6.35E-06	1.53E-05	5.45E-05	5.06E-08	1.15E-05	3.04E-08
SVOC	Pyrene	129-00-0	3.86E-10	2.64E-07	5.56E-11	1.33E-10	4.94E-10	9.49E-11	1.01E-10	5.69E-11
SVOC	bis(2-Chloroethyl) ether	111-44-4	4.89E-05	3.66E-04	2.36E-04	2.40E-05	5.03E-05	1.32E-07	2.01E-05	7.90E-08
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.09E-08	1.48E-05	2.86E-09	7.05E-09	3.37E-08	5.31E-09	6.10E-09	3.19E-09
P/PCB	4,4'-DDD	72-54-8	5.54E-11	1.60E-07	9.29E-12	2.09E-11	7.94E-11	5.77E-11	1.68E-11	3.46E-11
P/PCB	4,4'-DDE	72-55-9	3.31E-11		5.52E-12	1.24E-11	4.46E-11		9.65E-12	
P/PCB	4,4'-DDT	50-29-3	4.69E-11	2.14E-07	7.81E-12	1.76E-11	6.32E-11	7.70E-11	1.37E-11	4.62E-11
P/PCB	Aldrin	309-00-2	2.27E-10		3.78E-11	8.51E-11	3.06E-10		6.62E-11	
P/PCB	Aroclor-1242	53469-21-9	3.07E-10	1.37E-06	2.33E-11	7.78E-11	4.63E-10	4.92E-10	6.72E-11	2.95E-10
P/PCB	Aroclor-1248	12672-29-6	2.23E-09	9.41E-07	3.32E-10	7.81E-10	2.79E-09	3.39E-10	5.86E-10	2.03E-10
P/PCB	Aroclor-1254	11097-69-1	2.90E-09	1.58E-06	2.95E-10	8.19E-10	2.21E-09	5.70E-10	4.66E-10	3.42E-10
P/PCB	Aroclor-1260	11096-82-5	1.33E-08	9.83E-07	2.18E-09	4.93E-09	1.75E-08	3.54E-10	3.79E-09	2.12E-10
P/PCB	Dieldrin	60-57-1		1.10E-08				3.94E-12		2.37E-12
P/PCB	Endosulfan I	959-98-8		5.35E-08				1.93E-11		1.16E-11
P/PCB	Endosulfan sulfate	1031-07-8								
P/PCB	Endrin	72-20-8		7.14E-08				2.57E-11		1.54E-11
P/PCB	Endrin aldehyde	7421-93-4								
P/PCB	Endrin ketone	53494-70-5	6.90E-12	6.11E-10	2.70E-13	1.32E-12	1.84E-13	2.20E-13	1.03E-13	1.32E-13
P/PCB	Heptachlor	76-44-8	3.82E-13		9.65E-14	2.11E-13	3.31E-12		4.60E-13	

Table B-10a:
Exposure Concentrations (mg/m^3) in Ambient Air - Current Land Use
ACS NPL Site, Griffith, Indiana

		Current/Future Scenario:	Current	Current	Current	Current	Current	Current	Current	Current
		Location of Exposure:	AREA 1	AREA 1	AREA 4A	AREA 4B	Area 5A	Area 5A	AREA 6	AREA 6
		Type of Activity at Emission Location:	Routine Industrial	Excavation	Undeveloped	Undeveloped	Routine/Undevel	Excavation	Routine/Undevel	Excavation
		Location of Emission:	All on-site areas	At Area	All on-site areas	All on-site areas	All on-site areas	Area 1	All on-site areas	Area 1
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	Heptachlor epoxide	1024-57-3	1.82E-13		4.61E-14	1.01E-13	1.58E-12		2.19E-13	
P/PCB	Methoxychlor	72-43-5								
P/PCB	alpha-BHC	319-84-6	1.24E-11		2.07E-12	4.65E-12	1.67E-11		3.62E-12	
P/PCB	alpha-Chlordane	5103-71-9								
P/PCB	beta-BHC	319-85-7	2.36E-11		3.94E-12	8.86E-12	3.18E-11		6.89E-12	
P/PCB	gamma-BHC	58-89-9								
P/PCB	gamma-Chlordane	5103-74-2		5.43E-08				1.96E-11		1.17E-11
INORG	Antimony	7440-36-0	3.20E-09	7.26E-07	5.02E-10	1.17E-09	5.87E-09	2.61E-10	1.08E-09	1.57E-10
INORG	Arsenic	7440-38-2	2.05E-09	2.22E-07	1.32E-10	4.75E-10	1.44E-09	8.00E-11	2.39E-10	4.80E-11
INORG	Barium	7440-39-3	1.40E-07	1.20E-05	1.24E-08	3.75E-08	1.44E-07	4.33E-09	2.49E-08	2.60E-09
INORG	Beryllium	7440-41-7	1.97E-09	4.38E-08	8.01E-11	3.83E-10	1.24E-10	1.58E-11	4.06E-11	9.47E-12
INORG	Cadmium	7440-43-9	5.74E-09	6.69E-07	8.80E-10	2.08E-09	1.14E-08	2.41E-10	2.01E-09	1.45E-10
INORG	Chromium 3+	16065-83-1	6.97E-08	7.56E-06	9.85E-09	2.39E-08	1.07E-07	2.72E-09	2.00E-08	1.63E-09
INORG	Chromium 6+	18540-29-9	1.16E-08	1.26E-06	1.64E-09	3.98E-09	1.78E-08	4.54E-10	3.33E-09	2.72E-10
INORG	Cobalt	7440-48-4	3.03E-09	5.11E-07	2.39E-10	7.68E-10	2.92E-09	1.84E-10	4.86E-10	1.10E-10
INORG	Copper	7440-50-8	7.20E-08	3.19E-06	1.03E-08	2.48E-08	1.12E-07	1.15E-09	2.10E-08	6.88E-10
INORG	Cyanide (total)	57-12-5	6.96E-10	4.32E-07	7.18E-11	2.09E-10	1.82E-09	1.56E-10	2.59E-10	9.33E-11
INORG	Lead	7439-92-1	5.11E-07	3.87E-05	7.88E-08	1.85E-07	9.21E-07	1.39E-08	1.69E-07	8.35E-09
INORG	Manganese	7439-96-5	7.92E-07	3.00E-05	3.36E-08	1.56E-07	9.06E-08	1.08E-08	2.23E-08	6.47E-09
INORG	Mercury	7439-97-6	2.75E-09	1.45E-07	1.54E-10	5.96E-10	8.19E-10	5.22E-11	1.72E-10	3.13E-11
INORG	Nickel	7440-02-0	5.97E-09	4.68E-07	4.01E-10	1.40E-09	3.38E-09	1.68E-10	6.20E-10	1.01E-10
INORG	Selenium	7782-49-2	4.49E-10	3.15E-08	4.68E-11	1.32E-10	7.94E-10	1.14E-11	1.24E-10	6.81E-12
INORG	Silver	7440-22-4	5.51E-10	1.61E-08	6.87E-11	1.73E-10	5.02E-10	5.80E-12	1.10E-10	3.48E-12
INORG	Thallium	7440-28-0	2.72E-11		4.53E-12	1.02E-11	3.66E-11		7.93E-12	
INORG	Vanadium	7440-62-2	7.78E-09	6.20E-07	3.75E-10	1.60E-09	1.67E-09	2.23E-10	3.52E-10	1.34E-10
INORG	Zinc	7440-66-6	2.51E-07	1.70E-05	3.98E-08	9.49E-08	7.41E-07	6.13E-09	1.17E-07	3.68E-09
TIC	Acetaldehyde	75-07-0								
TIC	Acetophenone	98-86-2								
TIC	Butanol, 1-	71-36-3								
TIC	Caprolactam	105-60-2								
TIC	Chlorodifluoromethane	75-45-6								
TIC	Cyclohexanone	108-94-1								
TIC	Diethyl ether	60-29-7								
TIC	Dioxane, 1,4-	123-91-1								
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5								
TIC	Hexane, n-	110-54-3	5.64E-12		9.40E-13	2.12E-12	7.60E-12		1.65E-12	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7								
TIC	Phthalic anhydride	85-44-9		2.58E-07				9.28E-11		5.57E-11

Table B-10b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Future Location of Exposure: AREA 1 Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Future AREA 1 Excavation Area 1 C_{air} (mg/m^3)	Future AREA 2 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 2 Excavation Area 2 C_{air} (mg/m^3)	Future AREA 2 Const (0-10') Area 2 C_{air} (mg/m^3)	Future AREA 2 Const (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 3 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 3 Excavation Area 3 C_{air} (mg/m^3)	Future AREA 3 Const (0-10') Area 3 C_{air} (mg/m^3)	Future AREA 3 Const (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 4A Undeveloped All on-site areas C_{air} (mg/m^3)	Future AREA 4B Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 4B Excavation Area 4B C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.20E-04	3.35E-01	1.99E-03	3.82E-03	4.39E-03	9.98E-06	2.67E-04	1.61E-01	1.85E-01	2.90E-06	1.99E-05	4.48E-05	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.33E-07	1.33E-04	2.21E-06	1.52E-06	1.75E-06		2.95E-07				2.21E-08	4.97E-08	
VOC	1,1,2-Trichloroethane	79-00-5	4.04E-07	6.08E-04	2.76E-08				9.43E-09				1.58E-08	7.74E-08	
VOC	1,1-Dichloroethane	75-34-3	1.03E-04	4.85E-03	1.72E-03	3.18E-03	3.65E-03		2.41E-04	3.66E-04	4.21E-04	3.60E-05	1.72E-05	3.87E-05	3.56E-05
VOC	1,1-Dichloroethene	75-35-4						4.64E-06							
VOC	1,2,4-Trimethylbenzene	95-63-6													
VOC	1,2-Dichloroethane	107-06-2	4.13E-05	5.29E-03	6.88E-04	1.08E-03	1.24E-03		9.17E-05	1.19E-04	1.37E-04		6.88E-06	1.55E-05	1.13E-05
VOC	1,2-Dichloroethene (total)	540-59-0	1.78E-04	4.19E-02	2.87E-03	3.66E-03	4.20E-03		1.65E-03	4.86E-03	5.58E-03	1.90E-03	3.03E-05	6.82E-05	2.66E-05
VOC	1,2-Dichloropropane	78-87-5	4.08E-05	3.04E-03	6.80E-04	4.66E-04	5.35E-04		9.55E-05	7.66E-05	8.80E-05	3.77E-06	6.81E-06	1.53E-05	
VOC	1,3,5-Trimethylbenzene	108-67-8													
VOC	2-Butanone	78-93-3	4.57E-06	1.77E-05	2.85E-06	2.76E-05	1.65E-04	1.73E-04	1.71E-06	1.51E-03	9.07E-03	1.65E-02	7.20E-05	3.30E-06	
VOC	2-Hexanone	591-78-6	8.89E-04		1.48E-02	1.02E-02	1.16E-02	1.84E-02	1.98E-03	1.25E-04	1.44E-04		1.48E-04	3.33E-04	
VOC	4-Methyl-2-pentanone	108-10-1	1.05E-04	1.15E-02	1.76E-03	2.77E-03	3.20E-03	5.87E-03	2.34E-04	5.18E-02	6.07E-02	7.45E-03	1.76E-05	3.96E-05	
VOC	Acetone	67-64-1	2.35E-04	1.94E-02	2.59E-03	9.59E-03	1.10E-02	3.33E-02	3.72E-04	1.55E-01	1.78E-01	3.82E-05	1.33E-03	1.17E-04	1.51E-06
VOC	Benzene	71-43-2	5.91E-03	7.27E-01	4.99E-03	3.48E-03	3.99E-03	5.72E-03	2.72E-03	2.74E-02	3.15E-02	8.31E-04	9.14E-02	4.71E-03	6.68E-01
VOC	Bromodichloromethane	75-27-4													
VOC	Carbon Disulfide	75-15-0	6.10E-08	1.18E-06	4.17E-09				1.42E-09				2.39E-09	1.17E-08	
VOC	Carbon Tetrachloride	56-23-5													
VOC	Chlorobenzene	108-90-7	5.85E-06	1.28E-03	3.88E-05				8.46E-04	7.90E-03	9.09E-03	6.66E-04	1.48E-06	3.24E-06	
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	9.77E-04				6.42E-04				2.77E-02	1.28E-03	1.40E-02
VOC	Chloroform	67-66-3	1.44E-04	5.48E-02	2.40E-03	4.44E-03	5.09E-03		3.21E-04	1.03E-06	1.19E-06	2.70E-06	2.40E-05	5.40E-05	
VOC	Chloromethane	74-87-3													
VOC	Ethyl Benzene	100-41-4	6.68E-04	5.70E-02	1.05E-02	1.66E-02	1.90E-02	3.73E-02	1.05E-02	5.50E-02	6.36E-02	6.34E-02	1.17E-04	2.65E-04	4.49E-03
VOC	Methylene Chloride	75-09-2	3.54E-04	7.55E-02	5.90E-03	4.04E-03	4.64E-03	6.21E-06	8.65E-04	5.95E-04	6.83E-04	3.46E-05	5.91E-05	1.33E-04	4.41E-04
VOC	Styrene	100-42-5	2.78E-05	3.10E-03	4.04E-04	4.26E-04	4.92E-04		8.98E-04	9.04E-03	1.04E-02	1.14E-03	5.14E-06	1.15E-05	
VOC	Tetrachloroethene	127-18-4	1.66E-03	6.58E-02	2.44E-02	3.06E-02	3.52E-02	7.56E-02	4.66E-02	6.60E-02	7.66E-02	7.56E-02	3.01E-04	6.73E-04	
VOC	Tetrahydrofuran	109-99-9													
VOC	Toluene	108-88-3	7.45E-03	1.36E-01	1.17E-01	9.96E-02	1.14E-01	1.28E-01	1.22E-01	1.22E-01	1.44E-01	1.41E-01	1.31E-03	2.94E-03	1.42E-02
VOC	Trichloroethene	79-01-6	4.89E-04	5.01E-02	7.26E-03	1.01E-02	1.16E-02	3.16E-02	1.30E-02	2.66E-01	3.05E-01	2.05E-02	8.84E-05	1.98E-04	
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-05	8.14E-05	9.34E-05		1.22E-05				9.14E-07	2.06E-06	6.78E-06
VOC	Xylenes (total)	1330-20-7	4.30E-03	7.26E-02	6.48E-02	5.53E-02	6.38E-02	6.45E-02	7.02E-02	5.58E-02	6.68E-02	6.61E-02	7.34E-04	1.67E-03	1.72E-02
VOC	cis-1,2-Dichloroethene	156-59-2	1.62E-06	2.09E-01	2.71E-05	5.01E-05	5.75E-05	3.50E-05	3.61E-06	3.83E-06	4.40E-06		2.71E-07	6.10E-07	1.20E-06
VOC	m,p-xylene	136777-61-2	9.38E-06	5.68E-02	1.56E-04	1.07E-04	1.23E-04	3.67E-06	2.08E-05	8.84E-03	1.02E-02		1.56E-06	3.52E-06	
VOC	ortho-xylene	95-47-6	4.51E-06	2.48E-02	7.52E-05	5.15E-05	5.92E-05	1.31E-06	1.00E-05	3.20E-03	3.68E-03	1.25E-06	7.52E-07	1.69E-06	
VOC	p-Cymene	99-87-6													
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		1.83E-10				1.02E-10				4.02E-10	2.38E-08	2.41E-05
SVOC	1,2,4-Trichlorobenzene	120-82-1	9.61E-06	4.69E-05	1.60E-04	1.21E-04	1.41E-04		2.13E-05				1.60E-06	3.60E-06	
SVOC	1,2-Dichlorobenzene	95-50-1	1.86E-04	7.28E-04	3.10E-03	2.13E-03	2.45E-03	9.56E-03	4.48E-04	1.29E-05	1.48E-05	1.80E-05	3.11E-05	7.01E-05	2.44E-04
SVOC	1,3-Dichlorobenzene	541-73-1		1.46E-05											
SVOC	1,4-Dichlorobenzene	106-46-7	3.55E-06	2.37E-04	5.92E-05	4.06E-05	4.68E-05		7.89E-06	4.15E-06	4.78E-06		5.92E-07	1.34E-06	1.44E-05
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1	9.26E-05	9.18E-04	5.17E-05				3.39E-05				1.47E-03	6.82E-05	9.18E-04
SVOC	2,4,5-Trichlorophenol	95-95-4	2.16E-09		1.43E-08				3.12E-07	2.23E-07	3.02E-07	3.02E-07	5.46E-10	1.20E-09	
SVOC	2,4-Dichlorophenol	120-83-2		1.44E-05											
SVOC	2,4-Dimethylphenol	105-67-9	6.19E-06	5.21E-05	1.02E-04	1.19E-04	1.46E-04	3.93E-04	2.86E-05	5.98E-05	7.29E-05	2.19E-05	1.04E-06	2.81E-06	2.02E-05
SVOC	2,4-Dinitrotoluene	121-14-2								3.47E-06	4.20E-06				
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-05	1.70E-05	2.05E-05		2.19E-06				1.64E-07	3.69E-07	
SVOC	2-Chloronaphthalene	91-58-7													
SVOC	2-Methylnaphthalene	91-57-6	4.12E-05	4.02E-04	3.54E-04	3.06E-04	4.91E-04	3.28E-04	3.82E-04	2.80E-04	3.35E-04	3.28E-04	4.69E-06	1.24E-05	4.07E-06
SVOC	2-Methylphenol	95-48-7	1.69E-05	4.72E-05	2.79E-04	1.92E-04	2.31E-04	7.31E-04	7.15E-05	4.92E-05	5.90E-05	2.86E-05	2.84E-06	6.38E-06	
SVOC	3,3'-Dichlorobenzidine	91-94-1	1.32E-10	1.17E-08	9.00E-12				3.07E-12				5.16E-12	2.52E-11	
SVOC	4-Bromophenyl-phenylether	101-55-3													
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06											

Table B-10b:
Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
Location of Exposure:			AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
Type of Activity at Emission Location:			Routine Industrial	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Undeveloped	Routine Industrial	Excavation
Location of Emission:			All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3													
SVOC	4-Methylphenol	106-44-5	6.20E-05	1.38E-04	1.02E-03	7.02E-04	8.20E-04	2.79E-03	2.25E-04	1.20E-04	1.40E-04	3.74E-05	1.17E-05	2.36E-05	2.99E-06
SVOC	4-Nitrophenol	100-02-7								2.29E-06	2.65E-06				
SVOC	Acenaphthene	83-32-9	3.51E-06	2.41E-05	5.84E-05	4.08E-05	5.08E-05		9.17E-06	1.74E-06	2.17E-06	1.22E-06	5.85E-07	1.32E-06	
SVOC	Acenaphthylene	208-96-8	1.09E-06	9.32E-06	7.46E-08				2.55E-08				4.28E-08	2.09E-07	5.83E-07
SVOC	Anthracene	120-12-7	1.93E-07	7.40E-07	1.50E-06	1.07E-06	1.58E-06		9.38E-07	9.00E-07	1.33E-06	8.02E-07	1.98E-08	5.48E-08	2.10E-07
SVOC	Benzo(a)anthracene	56-55-3	1.49E-10	6.56E-10	1.76E-09	1.50E-07	9.00E-07		1.73E-09	1.20E-07	7.20E-07	5.42E-07	2.10E-11	5.09E-11	2.00E-08
SVOC	Benzo(a)pyrene	50-32-8	1.08E-10	9.17E-10	9.44E-10	8.33E-08	5.00E-07		1.27E-10	7.78E-08	4.67E-07	4.67E-07	1.14E-11	3.11E-11	2.22E-08
SVOC	Benzo(b)fluoranthene	205-99-2	2.55E-10	9.56E-10	3.34E-09	2.94E-07	1.77E-06		7.14E-10	1.78E-07	1.07E-06	7.22E-07	3.58E-11	8.61E-11	2.44E-08
SVOC	Benzo(g,h,i)perylene	191-24-2	5.64E-11		9.40E-10	8.33E-08	5.00E-07		1.25E-10	6.11E-08	3.67E-07	3.67E-07	9.40E-12	2.12E-11	1.64E-08
SVOC	Benzo(k)fluoranthene	207-08-9	2.47E-10	8.06E-10	3.34E-09	2.94E-07	1.77E-06		7.14E-10	1.78E-07	1.07E-06	7.22E-07	3.55E-11	8.45E-11	2.28E-08
SVOC	Benzoic Acid	65-85-0	1.59E-04	2.00E-04	2.65E-03	1.82E-03	2.12E-03		3.53E-04	2.89E-03	3.37E-03		2.65E-05	5.96E-05	
SVOC	Benzyl Alcohol	100-51-6	9.97E-10		1.66E-08	1.47E-06	8.84E-06		2.22E-09				1.66E-10	3.74E-10	
SVOC	Butylbenzylphthalate	85-68-7	1.59E-08	5.58E-06	2.64E-07	2.33E-05	1.40E-04		4.58E-08	1.68E-06	1.01E-05	1.05E-05	2.65E-09	5.96E-09	
SVOC	Carbazole	86-74-8													2.67E-08
SVOC	Chrysene	218-01-9	1.95E-10	8.22E-10	2.42E-09	2.11E-07	1.27E-06		1.13E-09	8.56E-08	5.13E-07	4.33E-07	2.71E-11	6.56E-11	2.17E-08
SVOC	Di-n-butylphthalate	84-74-2	2.93E-09	3.80E-06	4.77E-08	4.19E-06	2.51E-05	1.67E-05	1.57E-08	3.15E-06	1.89E-05	1.42E-05	4.90E-10	1.11E-09	4.67E-09
SVOC	Di-n-octylphthalate	117-84-0	5.64E-10	4.47E-07	8.19E-09	7.22E-07	4.33E-06		1.90E-09	7.18E-07	4.31E-06	4.88E-06	8.56E-11	2.00E-10	
SVOC	Dibenzo(a,h)anthracene	53-70-3								1.50E-08	9.00E-08	9.00E-08			1.61E-08
SVOC	Dibenzofuran	132-64-9	9.59E-11	1.90E-07	1.58E-09	1.39E-07	8.33E-07		4.79E-10	3.32E-08	1.99E-07	1.32E-07	1.61E-11	3.63E-11	
SVOC	Diethylphthalate	84-66-2	9.31E-10	6.98E-07	1.55E-08	1.37E-06	8.24E-06		2.16E-09	2.24E-07	1.34E-06	8.58E-07	1.55E-10	3.49E-10	
SVOC	Dimethylphthalate	131-11-3	9.79E-09	2.42E-06	1.63E-07	1.44E-05	8.67E-05	3.67E-05	2.26E-08	4.75E-07	2.85E-06	4.67E-07	1.63E-09	3.67E-09	
SVOC	Fluoranthene	206-44-0	2.30E-10	1.70E-07	2.67E-09	2.28E-07	1.37E-06		2.48E-09	3.09E-07	1.85E-06	6.93E-07	3.18E-11	7.78E-11	2.19E-08
SVOC	Fluorene	86-73-7	1.83E-06	1.04E-05	3.04E-05	2.18E-05	2.98E-05		5.09E-06	1.11E-06	1.52E-06	1.03E-06	3.05E-07	6.87E-07	
SVOC	Hexachlorobenzene	118-74-1	1.82E-11	3.22E-10	1.24E-12				4.24E-13				7.12E-13	3.48E-12	
SVOC	Hexachlorobutadiene	87-68-3	5.14E-10	2.71E-07	8.56E-09	7.59E-07	4.55E-06		1.14E-09				8.56E-11	1.93E-10	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	8.02E-11	4.89E-10	8.80E-10	7.78E-08	4.67E-07		1.18E-10	4.56E-08	2.73E-07	2.73E-07	9.86E-12	2.50E-11	1.89E-08
SVOC	Isophorone	78-59-1	1.90E-04	1.56E-03	3.06E-03	2.09E-03	2.46E-03	2.24E-03	9.31E-04	4.46E-03	5.24E-03	1.23E-03	6.82E-05	7.23E-05	4.43E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7													
SVOC	N-Nitrosodiphenylamine	86-30-6	6.15E-08		4.07E-07				8.89E-06	3.50E-06	4.66E-06	6.07E-06	1.56E-08	3.41E-08	
SVOC	Naphthalene	91-20-3	9.43E-05	1.29E-03	1.54E-03	1.05E-03	1.23E-03	1.70E-03	6.24E-04	1.11E-03	1.30E-03	5.71E-04	1.60E-05	3.59E-05	1.44E-05
SVOC	Pentachlorophenol	87-86-5	1.74E-09	8.77E-07	2.90E-08	2.57E-06	1.54E-05		4.80E-09	7.28E-07	4.37E-06	5.00E-07	2.91E-10	6.55E-10	
SVOC	Phenanthrene	85-01-8	7.18E-10	4.03E-07	1.12E-08	9.84E-07	5.90E-06		3.42E-09	3.19E-07	1.91E-06	1.23E-06	1.16E-10	2.65E-10	8.33E-09
SVOC	Phenol	108-95-2	3.78E-05	1.41E-04	6.24E-04	4.28E-04	5.06E-04	1.56E-03	1.55E-04	1.29E-03	1.52E-03	1.31E-04	6.35E-06	1.53E-05	9.81E-06
SVOC	Pyrene	129-00-0	3.86E-10	2.64E-07	5.09E-09	4.44E-07	2.67E-06		2.11E-09	2.12E-07	1.27E-06	6.00E-07	5.56E-11	1.33E-10	2.14E-08
SVOC	bis(2-Chloroethyl) ether	111-44-4	4.89E-05	3.66E-04	5.80E-04	3.93E-04	4.55E-04		8.15E-05				2.36E-04	2.40E-05	1.96E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.09E-08	1.48E-05	2.28E-07	1.90E-05	1.14E-04	3.67E-05	2.98E-07	7.32E-05	4.39E-04	1.28E-04	2.86E-09	7.05E-09	2.22E-07
P/PCB	4,4'-DDD	72-54-8	5.54E-11	1.60E-07	9.17E-10	8.09E-08	4.85E-07		2.16E-10	8.33E-09	5.00E-08	5.00E-08	9.29E-12	2.09E-11	4.33E-09
P/PCB	4,4'-DDE	72-55-9	3.31E-11		5.52E-10	4.89E-08	2.93E-07		7.36E-11				5.52E-12	1.24E-11	1.61E-08
P/PCB	4,4'-DDT	50-29-3	4.69E-11	2.14E-07	7.81E-10	6.93E-08	4.16E-07		1.04E-10				7.81E-12	1.76E-11	1.33E-08
P/PCB	Aldrin	309-00-2	2.27E-10		3.78E-09	3.35E-07	2.01E-06		5.04E-10				3.78E-11	8.51E-11	
P/PCB	Aroclor-1242	53469-21-9	3.07E-10	1.37E-06	3.66E-10				7.62E-09	1.43E-06	8.60E-06	4.87E-05	2.33E-11	7.78E-11	
P/PCB	Aroclor-1248	12672-29-6	2.23E-09	9.41E-07	3.13E-08	2.76E-06	1.65E-05	4.33E-05	8.53E-09	7.82E-07	4.69E-06	1.37E-05	3.32E-10	7.81E-10	1.22E-08
P/PCB	Aroclor-1254	11097-69-1	2.90E-09	1.58E-06	2.29E-08	2.00E-06	1.20E-05	1.57E-06	8.81E-09	5.27E-07	3.16E-06	3.87E-06	2.95E-10	8.19E-10	4.89E-07
P/PCB	Aroclor-1260	11096-82-5	1.33E-08	9.83E-07	2.16E-07	1.92E-05	1.15E-04	1.07E-05	2.89E-08	3.25E-07	1.95E-06	4.87E-06	2.18E-09	4.93E-09	5.39E-08
P/PCB	Dieldrin	60-57-1		1.10E-08											
P/PCB	Endosulfan I	959-98-8		5.35E-08											2.17E-08
P/PCB	Endosulfan sulfate	1031-07-8													3.33E-09
P/PCB	Endrin	72-20-8		7.14E-08											8.33E-09
P/PCB	Endrin aldehyde	7421-93-4													
P/PCB	Endrin ketone	53494-70-5	6.90E-12	6.11E-10	4.71E-13				1.61E-13				2.70E-13	1.32E-12	
P/PCB	Heptachlor	76-44-8	3.82E-13		2.53E-12				5.52E-11	4.89E-09	2.93E-08	2.93E-08	9.65E-14	2.11E-13	3.44E-09

Table B-10b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
			Location of Exposure:	AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
			Type of Activity at Emission Location:	Routine Industrial	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Undeveloped	Routine Industrial	Excavation
			Location of Emission:	All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
				C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	Heptachlor epoxide	1024-57-3		1.82E-13		1.21E-12				2.63E-11	2.33E-09	1.40E-08	1.40E-08	4.61E-14	1.01E-13	
P/PCB	Methoxychlor	72-43-5														1.61E-08
P/PCB	alpha-BHC	319-84-6		1.24E-11		2.07E-10	1.83E-08	1.10E-07		2.76E-11				2.07E-12	4.65E-12	
P/PCB	alpha-Chlordane	5103-71-9														1.22E-08
P/PCB	beta-BHC	319-85-7		2.36E-11		3.94E-10	3.49E-08	2.09E-07		5.25E-11				3.94E-12	8.86E-12	1.44E-09
P/PCB	gamma-BHC	58-89-9														1.61E-09
P/PCB	gamma-Chlordane	5103-74-2			5.43E-08											2.67E-09
INORG	Antimony	7440-36-0		3.20E-09	7.26E-07	4.30E-08	3.63E-06	2.18E-05	2.50E-05	4.79E-08	7.51E-06	4.50E-05	2.54E-05	5.02E-10	1.17E-09	
INORG	Arsenic	7440-38-2		2.05E-09	2.22E-07	4.04E-09	2.70E-07	1.62E-06	2.17E-06	1.96E-08	5.05E-07	3.03E-06	5.92E-06	1.32E-10	4.75E-10	4.22E-07
INORG	Barium	7440-39-3		1.40E-07	1.20E-05	6.87E-07	5.40E-05	3.24E-04	9.00E-04	1.63E-06	1.35E-04	8.11E-04	1.03E-03	1.24E-08	3.75E-08	
INORG	Beryllium	7440-41-7		1.97E-09	4.38E-08	3.73E-10	1.74E-08	1.04E-07		1.01E-09	3.41E-08	2.04E-07	2.93E-07	8.01E-11	3.83E-10	
INORG	Cadmium	7440-43-9		5.74E-09	6.69E-07	7.11E-08	5.89E-06	3.53E-05	1.73E-05	1.09E-07	2.03E-05	1.22E-04	5.48E-05	8.80E-10	2.08E-09	3.28E-07
INORG	Chromium 3+	16065-83-1		6.97E-08	7.56E-06	8.28E-07	7.05E-05	4.23E-04	2.37E-04	8.05E-07	6.56E-05	3.94E-04	4.71E-04	9.85E-09	2.39E-08	1.57E-06
INORG	Chromium 6+	18540-29-9		1.16E-08	1.26E-06	1.38E-07	1.17E-05	7.05E-05	3.95E-05	1.34E-07	1.09E-05	6.56E-05	7.86E-05	1.64E-09	3.98E-09	2.61E-07
INORG	Cobalt	7440-48-4		3.03E-09	5.11E-07	1.07E-08	7.86E-07	4.71E-06	6.33E-06	3.69E-08	2.73E-06	1.64E-05	2.55E-05	2.39E-10	7.68E-10	
INORG	Copper	7440-50-8		7.20E-08	3.19E-06	8.63E-07	7.33E-05	4.40E-04	3.10E-04	8.57E-07	1.01E-04	6.05E-04	6.82E-04	1.03E-08	2.48E-08	2.06E-06
INORG	Cyanide (total)	57-12-5		6.96E-10	4.32E-07	1.42E-09				3.02E-08	1.79E-06	1.07E-05	1.90E-05	7.18E-11	2.09E-10	
INORG	Lead	7439-92-1		5.11E-07	3.87E-05	6.71E-06	5.67E-04	3.40E-03	3.40E-03	7.56E-06	4.18E-04	2.51E-03	3.62E-03	7.88E-08	1.85E-07	8.00E-06
INORG	Manganese	7439-96-5		7.92E-07	3.00E-05	2.46E-07	1.31E-05	7.88E-05	1.10E-04	1.00E-06	4.64E-05	2.79E-04	3.55E-04	3.36E-08	1.56E-07	
INORG	Mercury	7439-97-6		2.75E-09	1.45E-07	5.36E-09	4.36E-07	2.62E-06	2.62E-06	6.67E-09	5.67E-07	3.40E-06	2.88E-06	1.54E-10	5.96E-10	2.50E-08
INORG	Nickel	7440-02-0		5.97E-09	4.68E-07	1.73E-08	1.37E-06	8.20E-06	1.77E-05	3.55E-08	3.04E-06	1.83E-05	3.05E-05	4.01E-10	1.40E-09	
INORG	Selenium	7782-49-2		4.49E-10	3.15E-08	2.25E-09	1.54E-07	9.23E-07	1.43E-06	1.10E-08	1.87E-06	1.12E-05	3.65E-06	4.68E-11	1.32E-10	
INORG	Silver	7440-22-4		5.51E-10	1.61E-08	6.17E-09	5.46E-07	3.27E-06	5.00E-06	8.25E-10	3.68E-06	2.21E-05	4.00E-06	6.87E-11	1.73E-10	
INORG	Thallium	7440-28-0		2.72E-11		4.53E-10	4.01E-08	2.41E-07		6.04E-11	4.21E-08	2.52E-07		4.53E-12	1.02E-11	
INORG	Vanadium	7440-62-2		7.78E-09	6.20E-07	7.27E-09	5.34E-07	3.20E-06	3.33E-06	1.74E-08	1.13E-06	6.78E-06	1.23E-05	3.75E-10	1.60E-09	
INORG	Zinc	7440-66-6		2.51E-07	1.70E-05	2.52E-06	1.84E-04	1.10E-03	1.73E-03	9.81E-06	8.71E-04	5.23E-03	4.20E-03	3.98E-08	9.49E-08	1.66E-05
TIC	Acetaldehyde	75-07-0														
TIC	Acetophenone	98-86-2														
TIC	Butanol, 1-	71-36-3														
TIC	Caprolactam	105-60-2														
TIC	Chlorodifluoromethane	75-45-6														
TIC	Cyclohexanone	108-94-1														
TIC	Diethyl ether	60-29-7														
TIC	Dioxane, 1,4-	123-91-1														
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5														
TIC	Hexane, n-	110-54-3		5.64E-12		9.40E-11	8.33E-09	5.00E-08		1.25E-11				9.40E-13	2.12E-12	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7														
TIC	Phthalic anhydride	85-44-9			2.58E-07											

Table B-10b (continued):
Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

Current/Future Scenario:			**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**	**Future**
Location of Exposure:			**Area 5A**	**Area 5A**	**Area 5A**	**Area 5A**	**AREA 5B**	**AREA 6**	**AREA 6**	**AREA 6**	**AREA 6**
Type of Activity at Emission Location:			Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')
Location of Emission:			All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	1.61E-04	4.94E-04	3.22E-03	9.88E-08		3.49E-05	1.13E-04	9.44E-04	2.67E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.79E-07	4.78E-08	1.73E-08			3.87E-08	2.87E-08	4.67E-09	
VOC	1,1,2-Trichloroethane	79-00-5	1.08E-08	2.19E-07				6.06E-09	1.31E-07		
VOC	1,1-Dichloroethane	75-34-3	1.40E-04	4.63E-06	3.61E-05	6.84E-10		3.02E-05	1.18E-06	9.74E-06	1.84E-07
VOC	1,1-Dichloroethene	75-35-4				4.60E-08					1.24E-08
VOC	1,2,4-Trimethylbenzene	95-63-6									
VOC	1,2-Dichloroethane	107-06-2	5.56E-05	1.91E-06	1.23E-05			1.20E-05	1.15E-06	3.32E-06	
VOC	1,2-Dichloroethene (total)	540-59-0	3.03E-04	1.51E-05	9.71E-05	4.41E-08		5.97E-05	9.05E-06	2.85E-05	9.68E-06
VOC	1,2-Dichloropropane	78-87-5	5.53E-05	1.10E-06	5.30E-06	1.10E-10		1.19E-05	6.57E-07	1.43E-06	1.92E-08
VOC	1,3,5-Trimethylbenzene	108-67-8									
VOC	2-Butanone	78-93-3	1.31E-06	4.62E-06	1.58E-04	2.88E-04		3.15E-06	1.06E-06	4.62E-05	4.63E-07
VOC	2-Hexanone	591-78-6	1.20E-03	1.46E-05	1.15E-04	1.83E-04		2.59E-04	3.65E-06	3.11E-05	4.92E-05
VOC	4-Methyl-2-pentanone	108-10-1	1.42E-04	1.59E-04	1.06E-03	5.87E-05		3.08E-05	3.64E-05	3.10E-04	3.78E-05
VOC	Acetone	67-64-1	2.29E-04	4.73E-04	3.10E-03	3.30E-04		1.02E-04	1.09E-04	9.08E-04	8.89E-05
VOC	Benzene	71-43-2	1.80E-03	3.24E-04	5.48E-04	5.66E-05	5.74E-02	4.03E-03	1.64E-04	1.61E-04	1.53E-05
VOC	Bromodichloromethane	75-27-4					4.06E-06				
VOC	Carbon Disulfide	75-15-0	1.63E-09	4.24E-10				9.15E-10	2.55E-10		
VOC	Carbon Tetrachloride	56-23-5									
VOC	Chlorobenzene	108-90-7	5.07E-05	2.44E-05	1.58E-04	3.60E-08		7.05E-06	5.66E-06	4.63E-05	3.39E-06
VOC	Chloroethane	75-00-3	4.96E-04	5.04E-06			7.36E-03	1.21E-03	3.02E-06		
VOC	Chloroform	67-66-3	1.94E-04	1.97E-05	5.04E-05	5.80E-11	5.38E-06	4.20E-05	1.18E-05	1.36E-05	1.37E-08
VOC	Chloromethane	74-87-3									
VOC	Ethyl Benzene	100-41-4	1.37E-03	1.71E-04	1.11E-03	3.75E-04		2.53E-04	4.00E-05	3.24E-04	3.21E-04
VOC	Methylene Chloride	75-09-2	4.81E-04	2.73E-05	4.59E-05	6.20E-08	4.41E-04	1.04E-04	1.64E-05	1.24E-05	1.76E-07
VOC	Styrene	100-42-5	8.05E-05	2.77E-05	1.81E-04	1.33E-07		1.35E-05	6.35E-06	5.32E-05	5.78E-06
VOC	Tetrachloroethene	127-18-4	4.43E-03	2.02E-04	1.33E-03	7.49E-04		7.55E-04	4.63E-05	3.91E-04	3.85E-04
VOC	Tetrahydrofuran	109-99-9									
VOC	Toluene	108-88-3	1.54E-02	3.79E-04	2.50E-03	1.30E-03	1.23E-05	2.85E-03	8.89E-05	7.32E-04	7.11E-04
VOC	Trichloroethene	79-01-6	1.27E-03	8.13E-04	5.31E-03	3.13E-04		2.19E-04	1.87E-04	1.56E-03	1.05E-04
VOC	Vinyl Chloride	75-01-4	7.39E-06	1.61E-07	9.25E-07			1.60E-06	5.53E-08	2.49E-07	
VOC	Xylenes (total)	1330-20-7	8.73E-03	1.77E-04	1.16E-03	6.75E-04		1.60E-03	4.29E-05	3.41E-04	3.26E-04
VOC	cis-1,2-Dichloroethene	156-59-2	2.19E-06	7.52E-05	5.69E-07	3.46E-07		4.74E-07	4.51E-05	1.53E-07	9.34E-08
VOC	m,p-xylene	136777-61-2	1.26E-05	2.71E-05	1.77E-04	3.64E-08		2.74E-06	1.23E-05	5.18E-05	9.81E-09
VOC	ortho-xylene	95-47-6	6.07E-06	9.79E-06	6.40E-05	1.30E-08		1.32E-06	5.35E-06	1.87E-05	6.38E-09
VOC	p-Cymene	99-87-6									
VOC	trans-1,2-Dichloroethene	156-60-5	1.21E-10	4.16E-09			6.02E-06	9.87E-11	3.34E-09		
SVOC	1,2,4-Trichlorobenzene	120-82-1	1.29E-05	1.74E-07	1.40E-06			2.80E-06	4.36E-08	3.77E-07	
SVOC	1,2-Dichlorobenzene	95-50-1	2.53E-04	3.15E-06	2.43E-05	9.47E-05		5.46E-05	8.19E-07	6.55E-06	2.55E-05
SVOC	1,3-Dichlorobenzene	541-73-1		5.24E-09					3.15E-09		
SVOC	1,4-Dichlorobenzene	106-46-7	4.78E-06	8.52E-08	4.63E-07			1.04E-06	5.11E-08	1.25E-07	
SVOC	2,2'-oxybis(1-Chloropropane	108-60-1	2.62E-05	3.31E-07				6.40E-05	1.98E-07		
SVOC	2,4,5-Trichlorophenol	95-95-4	1.87E-08	6.83E-10	5.25E-09	9.86E-10		2.60E-09	1.57E-10	1.54E-09	1.25E-09
SVOC	2,4-Dichlorophenol	120-83-2		5.17E-09					3.10E-09		
SVOC	2,4-Dimethylphenol	105-67-9	9.08E-06	1.90E-07	1.44E-06	3.89E-06		1.90E-06	4.73E-08	3.89E-07	1.05E-06
SVOC	2,4-Dinitrotoluene	121-14-2		1.06E-08	7.31E-08				2.43E-09	2.14E-08	
SVOC	2,6-Dinitrotoluene	606-20-2	1.33E-06	2.45E-08	2.03E-07		5.50E-08	2.87E-07	6.14E-09	5.47E-08	
SVOC	2-Chloronaphthalene	91-58-7									
SVOC	2-Methylnaphthalene	91-57-6	4.80E-05	9.33E-07	7.25E-06	3.32E-06		8.99E-06	2.31E-07	2.08E-06	1.65E-06
SVOC	2-Methylphenol	95-48-7	2.45E-05	2.78E-07	2.29E-06	7.24E-06		5.15E-06	6.96E-08	6.17E-07	1.95E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1	3.51E-12	4.20E-12				1.97E-12	2.52E-12		
SVOC	4-Bromophenyl-phenylether	101-55-3									
SVOC	4-Chloro-3-methylphenol	59-50-7		6.96E-10					4.18E-10		

Table B-10b (continued):

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

		Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future
		Location of Exposure:	Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
		Type of Activity at Emission Location:	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')
		Location of Emission:	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3									
SVOC	4-Methylphenol	106-44-5	8.79E-05	1.01E-06	8.11E-06	2.76E-05		1.87E-05	2.53E-07	2.19E-06	7.44E-06
SVOC	4-Nitrophenol	100-02-7		7.01E-09	4.61E-08				1.61E-09	1.35E-08	
SVOC	Acenaphthene	83-32-9	4.80E-06	5.87E-08	5.03E-07	2.09E-09		1.03E-06	1.47E-08	1.36E-07	5.60E-09
SVOC	Acenaphthylene	208-96-8	2.91E-08	3.35E-09				1.64E-08	2.01E-09		
SVOC	Anthracene	120-12-7	1.65E-07	2.75E-09	2.31E-08	3.83E-09		3.32E-08	6.32E-10	6.76E-09	2.97E-09
SVOC	Benzo(a)anthracene	56-55-3	2.28E-10	3.67E-10	1.25E-08	9.43E-09		4.27E-11	8.42E-11	3.67E-09	
SVOC	Benzo(a)pyrene	50-32-8	7.74E-11	2.38E-10	8.12E-09	8.12E-09		1.72E-11	5.46E-11	2.38E-09	
SVOC	Benzo(b)fluoranthene	205-99-2	2.86E-10	5.45E-10	1.86E-08	1.26E-08		6.12E-11	1.25E-10	5.45E-09	
SVOC	Benzo(g,h,i)perylene	191-24-2	7.60E-11	1.87E-10	6.38E-09	6.38E-09		1.65E-11	4.29E-11	1.87E-09	
SVOC	Benzo(k)fluoranthene	207-08-9	2.86E-10	5.45E-10	1.86E-08	1.26E-08		6.11E-11	1.25E-10	5.45E-09	
SVOC	Benzoic Acid	65-85-0	2.14E-04	8.85E-06	5.86E-05			4.64E-05	2.03E-06	1.72E-05	
SVOC	Benzyl Alcohol	100-51-6	1.34E-09	2.12E-09	8.75E-08			2.91E-10	5.30E-10	2.36E-08	
SVOC	Butylbenzylphthalate	85-68-7	2.19E-08	3.36E-08	1.39E-06	1.83E-07		4.70E-09	8.40E-09	3.74E-07	
SVOC	Carbazole	86-74-8		4.62E-12					3.71E-12		
SVOC	Chrysene	218-01-9	2.43E-10	3.04E-10	1.25E-08	7.54E-09		4.92E-11	7.60E-11	3.38E-09	
SVOC	Di-n-butylphthalate	84-74-2	4.39E-09	9.63E-09	3.29E-07	2.47E-07		9.06E-10	2.21E-09	9.63E-08	4.45E-08
SVOC	Di-n-octylphthalate	117-84-0	7.09E-10	2.20E-09	7.50E-08	8.50E-08		1.50E-10	5.04E-10	2.20E-08	
SVOC	Dibenzo(a,h)anthracene	53-70-3		4.59E-11	1.57E-09	1.57E-09			1.05E-11	4.59E-10	
SVOC	Dibenzofuran	132-64-9	1.43E-10	2.00E-10	8.25E-09	2.29E-09		2.97E-11	5.00E-11	2.23E-09	
SVOC	Diethylphthalate	84-66-2	1.26E-09	1.98E-09	8.16E-08	1.49E-08		2.72E-10	4.95E-10	2.20E-08	
SVOC	Dimethylphthalate	131-11-3	1.32E-08	2.08E-08	8.58E-07	3.63E-07		2.86E-09	5.20E-09	2.31E-07	9.79E-08
SVOC	Fluoranthene	206-44-0	3.37E-10	9.45E-10	3.22E-08	1.21E-08		6.37E-11	2.17E-10	9.45E-09	
SVOC	Fluorene	86-73-7	2.52E-06	3.14E-08	2.95E-07	3.57E-09		5.40E-07	7.84E-09	7.95E-08	4.21E-09
SVOC	Hexachlorobenzene	118-74-1	4.85E-13	1.16E-13				2.73E-13	6.96E-14		
SVOC	Hexachlorobutadiene	87-68-3	6.92E-10	1.09E-09	4.51E-08			1.50E-10	2.73E-10	1.22E-08	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	7.17E-11	1.39E-10	4.76E-09	4.76E-09		1.58E-11	3.20E-11	1.39E-09	
SVOC	Isophorone	78-59-1	2.77E-04	1.36E-05	9.12E-05	2.22E-05	5.40E-07	5.91E-05	3.13E-06	2.67E-05	6.25E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7									
SVOC	N-Nitrosodiphenylamine	86-30-6	5.33E-07	1.07E-08	8.10E-08	1.80E-08		7.41E-08	2.46E-09	2.38E-08	2.57E-08
SVOC	Naphthalene	91-20-3	1.48E-04	3.52E-06	2.27E-05	1.68E-05		3.02E-05	8.52E-07	6.64E-06	4.54E-06
SVOC	Pentachlorophenol	87-86-5	2.40E-09	3.70E-09	1.52E-07	8.70E-09		5.15E-10	9.24E-10	4.11E-08	
SVOC	Phenanthrene	85-01-8	1.02E-09	1.42E-09	5.85E-08	2.15E-08		2.11E-10	3.54E-10	1.58E-08	
SVOC	Phenol	108-95-2	5.45E-05	3.95E-06	2.65E-05	1.55E-05	4.05E-06	1.15E-05	9.08E-07	7.77E-06	4.17E-06
SVOC	Pyrene	129-00-0	4.94E-10	6.49E-10	2.64E-08	1.04E-08		1.01E-10	1.60E-10	7.12E-09	
SVOC	bis(2-Chloroethyl) ether	111-44-4	5.03E-05	6.36E-07	4.51E-06		2.20E-05	2.01E-05	1.84E-07	1.22E-06	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	3.37E-08	2.24E-07	7.64E-06	2.23E-06		6.10E-09	5.14E-08	2.24E-06	9.79E-08
P/PCB	4,4'-DDD	72-54-8	7.94E-11	1.16E-10	4.80E-09	8.70E-10		1.68E-11	3.46E-11	1.30E-09	
P/PCB	4,4'-DDE	72-55-9	4.46E-11	7.04E-11	2.90E-09			9.65E-12	1.76E-11	7.83E-10	
P/PCB	4,4'-DDT	50-29-3	6.32E-11	9.97E-11	4.11E-09			1.37E-11	4.62E-11	1.11E-09	
P/PCB	Aldrin	309-00-2	3.06E-10	4.83E-10	1.99E-08			6.62E-11	1.21E-10	5.37E-09	
P/PCB	Aroclor-1242	53469-21-9	4.63E-10	4.39E-09	1.50E-07	8.47E-07		6.72E-11	1.01E-09	4.39E-08	
P/PCB	Aroclor-1248	12672-29-6	2.79E-09	3.97E-09	1.64E-07	4.29E-07		5.86E-10	9.92E-10	4.42E-08	1.16E-07
P/PCB	Aroclor-1254	11097-69-1	2.21E-09	2.88E-09	1.19E-07	6.73E-08		4.66E-10	7.20E-10	3.20E-08	4.18E-09
P/PCB	Aroclor-1260	11096-82-5	1.75E-08	2.76E-08	1.14E-06	1.06E-07		3.79E-09	6.91E-09	3.07E-07	2.85E-08
P/PCB	Dieldrin	60-57-1		3.94E-12					2.37E-12		
P/PCB	Endosulfan I	959-98-8		1.93E-11					1.16E-11		
P/PCB	Endosulfan sulfate	1031-07-8		5.76E-13					4.62E-13		
P/PCB	Endrin	72-20-8		2.57E-11					1.54E-11		
P/PCB	Endrin aldehyde	7421-93-4									
P/PCB	Endrin ketone	53494-70-5	1.84E-13	2.20E-13				1.03E-13	1.32E-13		
P/PCB	Heptachlor	76-44-8	3.31E-12	1.50E-11	5.10E-10	5.10E-10		4.60E-13	3.43E-12	1.50E-10	

Table B-10b (continued):
Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 1: Surface Soil
ACS NPL Site, Griffith, Indiana

		Current/Future Scenario:	Future	Future	Future	Future	Future	Future	Future	Future	Future
		Location of Exposure:	Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
		Type of Activity at Emission Location:	Routine Industrial	Excavation	Const (0-10')	Const (0-4')	Excavation	Routine Industrial	Excavation	Const (0-10')	Const (0-4')
		Location of Emission:	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	Heptachlor epoxide	1024-57-3	1.58E-12	7.14E-12	2.44E-10	2.44E-10		2.19E-13	1.64E-12	7.14E-11	
P/PCB	Methoxychlor	72-43-5		2.78E-12					2.23E-12		
P/PCB	alpha-BHC	319-84-6	1.67E-11	2.64E-11	1.09E-09			3.62E-12	6.60E-12	2.94E-10	
P/PCB	alpha-Chlordane	5103-71-9		2.11E-12					1.69E-12		
P/PCB	beta-BHC	319-85-7	3.18E-11	5.03E-11	2.07E-09			6.89E-12	1.26E-11	5.59E-10	
P/PCB	gamma-BHC	58-89-9		2.78E-13					2.23E-13		
P/PCB	gamma-Chlordane	5103-74-2		1.96E-11					1.17E-11		
INORG	Antimony	7440-36-0	5.87E-09	2.30E-08	7.84E-07	4.42E-07		1.08E-09	5.27E-09	2.30E-07	6.68E-08
INORG	Arsenic	7440-38-2	1.44E-09	1.55E-09	5.27E-08	1.03E-07		2.39E-10	3.55E-10	1.55E-08	5.79E-09
INORG	Barium	7440-39-3	1.44E-07	4.14E-07	1.41E-05	1.79E-05		2.49E-08	9.49E-08	4.14E-06	2.40E-06
INORG	Beryllium	7440-41-7	1.24E-10	1.04E-10	3.56E-09	5.10E-09		4.06E-11	2.39E-11	1.04E-09	
INORG	Cadmium	7440-43-9	1.14E-08	6.21E-08	2.12E-06	9.54E-07		2.01E-09	1.43E-08	6.21E-07	4.63E-08
INORG	Chromium 3+	16065-83-1	1.07E-07	2.01E-07	6.85E-06	8.20E-06		2.00E-08	4.61E-08	2.01E-06	6.33E-07
INORG	Chromium 6+	18540-29-9	1.78E-08	3.35E-08	1.14E-06	1.37E-06		3.33E-09	7.68E-09	3.35E-07	1.06E-07
INORG	Cobalt	7440-48-4	2.92E-09	8.37E-09	2.85E-07	4.43E-07		4.86E-10	1.92E-09	8.37E-08	1.69E-08
INORG	Copper	7440-50-8	1.12E-07	3.09E-07	1.05E-05	1.19E-05		2.10E-08	7.08E-08	3.09E-06	8.28E-07
INORG	Cyanide (total)	57-12-5	1.82E-09	5.48E-09	1.87E-07	3.31E-07		2.59E-10	1.26E-09	5.48E-08	
INORG	Lead	7439-92-1	9.21E-07	1.28E-06	4.36E-05	6.29E-05		1.69E-07	2.93E-07	1.28E-05	9.08E-06
INORG	Manganese	7439-96-5	9.06E-08	1.42E-07	4.85E-06	6.18E-06		2.23E-08	3.26E-08	1.42E-06	2.94E-07
INORG	Mercury	7439-97-6	8.19E-10	1.73E-09	5.92E-08	5.02E-08		1.72E-10	3.98E-10	1.73E-08	6.99E-09
INORG	Nickel	7440-02-0	3.38E-09	9.32E-09	3.18E-07	5.31E-07		6.20E-10	2.14E-09	9.32E-08	4.72E-08
INORG	Selenium	7782-49-2	7.94E-10	5.72E-09	1.95E-07	6.35E-08		1.24E-10	1.31E-09	5.72E-08	3.83E-09
INORG	Silver	7440-22-4	5.02E-10	1.13E-08	3.84E-07	6.95E-08		1.10E-10	2.58E-09	1.13E-07	1.34E-08
INORG	Thallium	7440-28-0	3.66E-11	1.29E-10	4.39E-09			7.93E-12	2.95E-11	1.29E-09	
INORG	Vanadium	7440-62-2	1.67E-09	3.46E-09	1.18E-07	2.14E-07		3.52E-10	7.94E-10	3.46E-08	8.90E-09
INORG	Zinc	7440-66-6	7.41E-07	2.67E-06	9.09E-05	7.31E-05		1.17E-07	6.12E-07	2.67E-05	4.63E-06
TIC	Acetaldehyde	75-07-0									
TIC	Acetophenone	98-86-2									
TIC	Butanol, 1-	71-36-3									
TIC	Caprolactam	105-60-2									
TIC	Chlorodifluoromethane	75-45-6									
TIC	Cyclohexanone	108-94-1									
TIC	Diethyl ether	60-29-7									
TIC	Dioxane, 1,4-	123-91-1									
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5									
TIC	Hexane, n-	110-54-3	7.60E-12	1.20E-11	4.95E-10			1.65E-12	3.00E-12	1.34E-10	
TIC	Phenol, 4,4'-(1-methylethylid	80-05-7									
TIC	Phthalic anhydride	85-44-9		9.28E-11					5.57E-11		

Table B-10b:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Undeveloped	Routine Industrial	Excavation
	Location of Emission:		All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	4.36E-02	3.35E-01	9.73E-03	3.82E-03	4.41E-03	9.98E-06	1.06E-01	1.61E-01	2.34E-01	2.90E-06	1.99E-05	4.48E-05	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.09E-04	1.33E-04	9.65E-06	1.52E-06	1.75E-06		2.84E-06				2.21E-08	4.97E-08	
VOC	1,1,2-Trichloroethane	79-00-5	2.52E-04	6.08E-04	1.72E-05		2.20E-05		5.87E-06		2.10E-07		1.58E-08	7.74E-08	
VOC	1,1-Dichloroethane	75-34-3	8.05E-04	4.85E-03	1.78E-03	3.18E-03	3.65E-03		4.90E-04	3.66E-04	5.19E-04	4.58E-05	1.72E-05	3.87E-05	3.56E-05
VOC	1,1-Dichloroethene	75-35-4					2.87E-09	4.64E-06							
VOC	1,2,4-Trimethylbenzene	95-63-6													
VOC	1,2-Dichloroethane	107-06-2	1.01E-03	5.29E-03	7.57E-04	1.08E-03	1.25E-03		1.99E-04	1.19E-04	1.54E-04		6.88E-06	1.55E-05	1.13E-05
VOC	1,2-Dichloroethene (total)	540-59-0	9.86E-03	4.19E-02	3.67E-03	3.66E-03	4.20E-03		4.95E-03	4.86E-03	6.50E-03	1.90E-03	3.03E-05	6.82E-05	2.66E-05
VOC	1,2-Dichloropropane	78-87-5	2.02E-03	3.04E-03	8.22E-04	4.66E-04	5.35E-04		2.75E-04	7.66E-05	1.09E-04	3.77E-06	6.81E-06	1.53E-05	
VOC	1,3,5-Trimethylbenzene	108-67-8													
VOC	2-Butanone	78-93-3	4.86E-06	1.77E-05	3.13E-06	2.76E-05	1.50E-03	1.73E-04	7.51E-06	1.51E-03	3.30E-02	8.00E-05	7.20E-05	3.30E-06	
VOC	2-Hexanone	591-78-6	8.90E-04		1.48E-02	1.02E-02	1.17E-02	2.03E-02	2.16E-03	1.25E-04	1.44E-04		1.48E-04	3.33E-04	
VOC	4-Methyl-2-pentanone	108-10-1	2.34E-03	1.15E-02	3.40E-03	2.77E-03	3.30E-03	6.70E-03	3.30E-02	5.18E-02	7.95E-02	1.14E-02	1.76E-05	3.96E-05	
VOC	Acetone	67-64-1	1.84E-03	1.94E-02	5.02E-03	9.59E-03	1.14E-02	8.33E-02	5.16E-02	1.55E-01	2.33E-01	6.73E-05	1.33E-03	1.17E-04	1.51E-06
VOC	Benzene	71-43-2	1.37E-02	7.27E-01	6.29E-03	3.48E-03	4.02E-03	6.11E-03	1.97E-02	2.74E-02	3.96E-02	8.31E-04	9.14E-02	4.71E-03	6.68E-01
VOC	Bromodichloromethane	75-27-4													
VOC	Carbon Disulfide	75-15-0		1.18E-06							1.00E-09		2.39E-09	1.17E-08	
VOC	Carbon Tetrachloride	56-23-5													
VOC	Chlorobenzene	108-90-7	1.34E-03	1.28E-03	7.36E-04		8.33E-06		1.42E-02	7.90E-03	1.15E-02	6.66E-04	1.48E-06	3.24E-06	
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	9.77E-04				6.42E-04		4.00E-09		2.77E-02	1.28E-03	1.40E-02
VOC	Chloroform	67-66-3	8.20E-03	5.48E-02	2.95E-03	4.44E-03	5.13E-03		5.08E-04	1.03E-06	8.10E-07	2.70E-06	2.40E-05	5.40E-05	
VOC	Chloromethane	74-87-3													
VOC	Ethyl Benzene	100-41-4	8.12E-03	5.70E-02	1.21E-02	1.66E-02	1.92E-02	4.23E-02	3.49E-02	5.50E-02	7.06E-02	6.44E-02	1.17E-04	2.65E-04	4.49E-03
VOC	Methylene Chloride	75-09-2	1.26E-01	7.55E-02	1.45E-02	4.04E-03	4.66E-03	6.21E-06	4.77E-03	5.95E-04	8.38E-04	6.21E-05	5.91E-05	1.33E-04	4.41E-04
VOC	Styrene	100-42-5	9.18E-04	3.10E-03	8.57E-04	4.26E-04	5.06E-04		9.55E-03	9.04E-03	1.28E-02	1.14E-03	5.14E-06	1.15E-05	
VOC	Tetrachloroethene	127-18-4	1.31E-02	6.58E-02	2.53E-02	3.06E-02	3.54E-02	7.57E-02	5.13E-02	6.60E-02	9.08E-02	7.57E-02	3.01E-04	6.73E-04	
VOC	Tetrahydrofuran	109-99-9													
VOC	Toluene	108-88-3	4.62E-02	1.36E-01	1.21E-01	9.96E-02	1.15E-01	1.40E-01	1.52E-01	1.22E-01	1.83E-01	1.46E-01	1.31E-03	2.94E-03	1.42E-02
VOC	Trichloroethene	79-01-6	1.09E-02	5.01E-02	1.61E-02	1.01E-02	1.17E-02	7.37E-02	1.94E-01	2.66E-01	3.39E-01	1.79E-02	8.84E-05	1.98E-04	
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-05	8.14E-05	9.34E-05		1.22E-05		4.00E-09		9.14E-07	2.06E-06	6.78E-06
VOC	Xylenes (total)	1330-20-7	2.25E-02	7.26E-02	6.61E-02	5.53E-02	6.45E-02	6.45E-02	7.07E-02	5.58E-02	9.66E-02	7.10E-02	7.34E-04	1.67E-03	1.72E-02
VOC	cis-1,2-Dichloroethene	156-59-2	3.03E-02	2.09E-01	2.09E-03	5.01E-05	5.75E-05	3.50E-05	7.12E-04	3.83E-06	5.50E-06		2.71E-07	6.10E-07	1.20E-06
VOC	m,p-xylene	6777-61-2	7.54E-02	5.68E-02	6.04E-03	1.07E-04	1.24E-04	3.67E-06	1.79E-02	8.84E-03	1.27E-02		1.56E-06	3.52E-06	
VOC	ortho-xylene	95-47-6	2.15E-02	2.48E-02	1.81E-03	5.15E-05	5.99E-05	1.31E-06	6.34E-03	3.20E-03	4.60E-03	2.50E-06	7.52E-07	1.69E-06	
VOC	p-Cymene	99-87-6													
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		1.83E-10				1.02E-10				4.02E-10	2.38E-08	2.41E-05
SVOC	1,2,4-Trichlorobenzene	120-82-1	3.42E-05	4.69E-05	1.62E-04	1.21E-04	1.42E-04		2.19E-05				1.60E-06	3.60E-06	
SVOC	1,2-Dichlorobenzene	95-50-1	1.06E-03	7.28E-04	3.16E-03	2.13E-03	2.51E-03	9.56E-03	4.49E-04	1.29E-05	1.18E-05	2.69E-05	3.11E-05	7.01E-05	2.44E-04
SVOC	1,3-Dichlorobenzene	541-73-1	5.52E-10	1.46E-05	3.77E-11				1.29E-11						
SVOC	1,4-Dichlorobenzene	106-46-7	3.42E-04	2.37E-04	8.26E-05	4.06E-05	4.68E-05		2.18E-05	4.15E-06	4.78E-06		5.92E-07	1.34E-06	1.44E-05
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	9.26E-05	9.18E-04	5.17E-05				3.39E-05				1.47E-03	6.82E-05	9.18E-04
SVOC	2,4,5-Trichlorophenol	95-95-4								2.23E-07	2.45E-07	3.02E-07	5.46E-10	1.20E-09	
SVOC	2,4-Dichlorophenol	120-83-2	2.53E-05	1.44E-05	1.73E-06				5.91E-07						
SVOC	2,4-Dimethylphenol	105-67-9	1.50E-05	5.21E-05	1.04E-04	1.19E-04	1.64E-04	3.93E-04	7.31E-05	5.98E-05	1.00E-04	2.19E-05	1.04E-06	2.81E-06	2.02E-05
SVOC	2,4-Dinitrotoluene	121-14-2	3.45E-08		2.29E-07				4.99E-06	3.47E-06	4.20E-06				
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-05	1.70E-05	2.05E-05		2.19E-06				1.64E-07	3.69E-07	
SVOC	2-Chloronaphthalene	91-58-7													
SVOC	2-Methylnaphthalene	91-57-6	1.38E-04	4.02E-04	3.61E-04	3.06E-04	4.91E-04	3.37E-04	3.85E-04	2.80E-04	3.88E-04	3.36E-04	4.69E-06	1.24E-05	4.07E-06
SVOC	2-Methylphenol	95-48-7	9.90E-05	4.72E-05	2.87E-04	1.92E-04	2.58E-04	7.31E-04	1.19E-04	4.92E-05	7.00E-05	2.86E-05	2.84E-06	6.38E-06	
SVOC	3,3'-Dichlorobenzidine	91-94-1		1.17E-08									5.16E-12	2.52E-11	
SVOC	4-Bromophenyl-phenylether	101-55-3													
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06											

Table B-10c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Future Location of Exposure: AREA 1 Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Future AREA 1 Excavation Area 1 C_{air} (mg/m^3)	Future AREA 2 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 2 Excavation Area 2 C_{air} (mg/m^3)	Future AREA 2 Construction (0-10') Area 2 C_{air} (mg/m^3)	Future AREA 2 Construction (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 3 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 3 Excavation Area 3 C_{air} (mg/m^3)	Future AREA 3 Construction (0-10') Area 3 C_{air} (mg/m^3)	Future AREA 3 Construction (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 4A Undeveloped All on-site areas C_{air} (mg/m^3)	Future AREA 4B Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 4B Excavation Area 4B C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	4.36E-02	3.35E-01	9.73E-03	3.82E-03	4.41E-03	9.98E-06	1.06E-01	1.61E-01	2.34E-01	2.90E-06	1.99E-05	4.48E-05	
VOC	1,1,2,2-Tetrachloroethane	79-34-5	1.09E-04	1.33E-04	9.65E-06	1.52E-06	1.75E-06		2.84E-06				2.21E-08	4.97E-08	
VOC	1,1,2-Trichloroethane	79-00-5	2.52E-04	6.08E-04	1.72E-05		2.20E-05		5.87E-06		2.10E-07		1.58E-08	7.74E-08	
VOC	1,1-Dichloroethane	75-34-3	8.05E-04	4.85E-03	1.78E-03	3.18E-03	3.65E-03		4.90E-04	3.66E-04	5.19E-04	4.58E-05	1.72E-05	3.87E-05	3.56E-05
VOC	1,1-Dichloroethene	75-35-4					2.87E-09	4.64E-06							
VOC	1,2,4-Trimethylbenzene	95-63-6													
VOC	1,2-Dichloroethane	107-06-2	1.01E-03	5.29E-03	7.57E-04	1.08E-03	1.25E-03		1.99E-04	1.19E-04	1.54E-04		6.88E-06	1.55E-05	1.13E-05
VOC	1,2-Dichloroethene (total)	540-59-0	9.86E-03	4.19E-02	3.67E-03	3.66E-03	4.20E-03		4.95E-03	4.86E-03	6.50E-03	1.90E-03	3.03E-05	6.82E-05	2.66E-05
VOC	1,2-Dichloropropane	78-87-5	2.02E-03	3.04E-03	8.22E-04	4.66E-04	5.35E-04		2.75E-04	7.66E-05	1.09E-04	3.77E-06	6.81E-06	1.53E-05	
VOC	1,3,5-Trimethylbenzene	108-67-8													
VOC	2-Butanone	78-93-3	4.86E-06	1.77E-05	3.13E-06	2.76E-05	1.50E-03	1.73E-04	7.51E-06	1.51E-03	3.30E-02	8.00E-05	7.20E-05	3.30E-06	
VOC	2-Hexanone	591-78-6	8.90E-04		1.48E-02	1.02E-02	1.17E-02	2.03E-02	2.16E-03	1.25E-04	1.44E-04		1.48E-04	3.33E-04	
VOC	4-Methyl-2-pentanone	108-10-1	2.34E-03	1.15E-02	3.40E-03	2.77E-03	3.30E-03	6.70E-03	3.30E-02	5.18E-02	7.95E-02	1.14E-02	1.76E-05	3.96E-05	
VOC	Acetone	67-64-1	1.84E-03	1.94E-02	5.02E-03	9.59E-03	1.14E-02	8.33E-02	5.16E-02	1.55E-01	2.33E-01	6.73E-05	1.33E-03	1.17E-04	1.51E-06
VOC	Benzene	71-43-2	1.37E-02	7.27E-01	6.29E-03	3.48E-03	4.02E-03	6.11E-03	1.97E-02	2.74E-02	3.96E-02	8.31E-04	9.14E-02	4.71E-03	6.68E-01
VOC	Bromodichloromethane	75-27-4													
VOC	Carbon Disulfide	75-15-0		1.18E-06							1.00E-09		2.39E-09	1.17E-08	
VOC	Carbon Tetrachloride	56-23-5													
VOC	Chlorobenzene	108-90-7	1.34E-03	1.28E-03	7.36E-04		8.33E-06		1.42E-02	7.90E-03	1.15E-02	6.66E-04	1.48E-06	3.24E-06	
VOC	Chloroethane	75-00-3	1.75E-03	1.40E-02	9.77E-04				6.42E-04		4.00E-09		2.77E-02	1.28E-03	1.40E-02
VOC	Chloroform	67-66-3	8.20E-03	5.48E-02	2.95E-03	4.44E-03	5.13E-03		5.08E-04	1.03E-06	8.10E-07	2.70E-06	2.40E-05	5.40E-05	
VOC	Chloromethane	74-87-3													
VOC	Ethyl Benzene	100-41-4	8.12E-03	5.70E-02	1.21E-02	1.66E-02	1.92E-02	4.23E-02	3.49E-02	5.50E-02	7.06E-02	6.44E-02	1.17E-04	2.65E-04	4.49E-03
VOC	Methylene Chloride	75-09-2	1.26E-01	7.55E-02	1.45E-02	4.04E-03	4.66E-03	6.21E-06	4.77E-03	5.95E-04	8.38E-04	6.21E-05	5.91E-05	1.33E-04	4.41E-04
VOC	Styrene	100-42-5	9.18E-04	3.10E-03	8.57E-04	4.26E-04	5.06E-04		9.55E-03	9.04E-03	1.28E-02	1.14E-03	5.14E-06	1.15E-05	
VOC	Tetrachloroethene	127-18-4	1.31E-02	6.58E-02	2.53E-02	3.06E-02	3.54E-02	7.57E-02	5.13E-02	6.60E-02	9.08E-02	7.57E-02	3.01E-04	6.73E-04	
VOC	Tetrahydrofuran	109-99-9													
VOC	Toluene	108-88-3	4.62E-02	1.36E-01	1.21E-01	9.96E-02	1.15E-01	1.40E-01	1.52E-01	1.22E-01	1.83E-01	1.46E-01	1.31E-03	2.94E-03	1.42E-02
VOC	Trichloroethene	79-01-6	1.09E-02	5.01E-02	1.61E-02	1.01E-02	1.17E-02	7.37E-02	1.94E-01	2.66E-01	3.39E-01	1.79E-02	8.84E-05	1.98E-04	
VOC	Vinyl Chloride	75-01-4	5.48E-06	1.21E-04	9.14E-05	8.14E-05	9.34E-05		1.22E-05		4.00E-09		9.14E-07	2.06E-06	6.78E-06
VOC	Xylenes (total)	1330-20-7	2.25E-02	7.26E-02	6.61E-02	5.53E-02	6.45E-02	6.45E-02	7.07E-02	5.58E-02	9.66E-02	7.10E-02	7.34E-04	1.67E-03	1.72E-02
VOC	cis-1,2-Dichloroethene	156-59-2	3.03E-02	2.09E-01	2.09E-03	5.01E-05	5.75E-05	3.50E-05	7.12E-04	3.83E-06	5.50E-06		2.71E-07	6.10E-07	1.20E-06
VOC	m,p-xylene	6777-61-2	7.54E-02	5.68E-02	6.04E-03	1.07E-04	1.24E-04	3.67E-06	1.79E-02	8.84E-03	1.27E-02		1.56E-06	3.52E-06	
VOC	ortho-xylene	95-47-6	2.15E-02	2.48E-02	1.81E-03	5.15E-05	5.99E-05	1.31E-06	6.34E-03	3.20E-03	4.60E-03	2.50E-06	7.52E-07	1.69E-06	
VOC	p-Cymene	99-87-6													
VOC	trans-1,2-Dichloroethene	156-60-5	1.41E-09		1.83E-10				1.02E-10				4.02E-10	2.38E-08	2.41E-05
SVOC	1,2,4-Trichlorobenzene	120-82-1	3.42E-05	4.69E-05	1.62E-04	1.21E-04	1.42E-04		2.19E-05				1.60E-06	3.60E-06	
SVOC	1,2-Dichlorobenzene	95-50-1	1.06E-03	7.28E-04	3.16E-03	2.13E-03	2.51E-03	9.56E-03	4.49E-04	1.29E-05	1.18E-05	2.69E-05	3.11E-05	7.01E-05	2.44E-04
SVOC	1,3-Dichlorobenzene	541-73-1	5.52E-10	1.46E-05	3.77E-11				1.29E-11						
SVOC	1,4-Dichlorobenzene	106-46-7	3.42E-04	2.37E-04	8.26E-05	4.06E-05	4.68E-05		2.18E-05	4.15E-06	4.78E-06		5.92E-07	1.34E-06	1.44E-05
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	9.26E-05	9.18E-04	5.17E-05				3.39E-05				1.47E-03	6.82E-05	9.18E-04
SVOC	2,4,5-Trichlorophenol	95-95-4								2.23E-07	2.45E-07	3.02E-07	5.46E-10	1.20E-09	
SVOC	2,4-Dichlorophenol	120-83-2	2.53E-05	1.44E-05	1.73E-06				5.91E-07						
SVOC	2,4-Dimethylphenol	105-67-9	1.50E-05	5.21E-05	1.04E-04	1.19E-04	1.64E-04	3.93E-04	7.31E-05	5.98E-05	1.00E-04	2.19E-05	1.04E-06	2.81E-06	2.02E-05
SVOC	2,4-Dinitrotoluene	121-14-2	3.45E-08		2.29E-07				4.99E-06	3.47E-06	4.20E-06				
SVOC	2,6-Dinitrotoluene	606-20-2	9.84E-07		1.64E-05	1.70E-05	2.05E-05		2.19E-06				1.64E-07	3.69E-07	
SVOC	2-Chloronaphthalene	91-58-7													
SVOC	2-Methylnaphthalene	91-57-6	1.38E-04	4.02E-04	3.61E-04	3.06E-04	4.91E-04	3.37E-04	3.85E-04	2.80E-04	3.88E-04	3.36E-04	4.69E-06	1.24E-05	4.07E-06
SVOC	2-Methylphenol	95-48-7	9.90E-05	4.72E-05	2.87E-04	1.92E-04	2.58E-04	7.31E-04	1.19E-04	4.92E-05	7.00E-05	2.86E-05	2.84E-06	6.38E-06	
SVOC	3,3'-Dichlorobenzidine	91-94-1		1.17E-08									5.16E-12	2.52E-11	
SVOC	4-Bromophenyl-phenylether	101-55-3													
SVOC	4-Chloro-3-methylphenol	59-50-7		1.93E-06											

Table B-10c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use

Soil Approach 2: Subsurface Soil

ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		AREA 1	AREA 1	AREA 2	AREA 2	AREA 2	AREA 2	AREA 3	AREA 3	AREA 3	AREA 3	AREA 4A	AREA 4B	AREA 4B
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')	Undeveloped	Routine Industrial	Excavation
	Location of Emission:		All on-site areas	Area 1	All on-site areas	Area 2	Area 2	Area 2	All on-site areas	Area 3	Area 3	Area 2	All on-site areas	All on-site areas	Area 4B
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3													
SVOC	4-Methylphenol	106-44-5	1.91E-04	1.38E-04	1.04E-03	7.02E-04	8.62E-04	2.79E-03	3.35E-04	1.20E-04	1.61E-04	7.12E-05	1.17E-05	2.36E-05	2.99E-06
SVOC	4-Nitrophenol	100-02-7	2.31E-08		1.53E-07				3.34E-06	2.29E-06	2.65E-06				
SVOC	Acenaphthene	83-32-9	4.63E-05	2.41E-05	6.13E-05	4.08E-05	5.08E-05		1.15E-05	1.74E-06	2.40E-06	1.22E-06	5.85E-07	1.32E-06	
SVOC	Acenaphthylene	208-96-8	1.63E-05	9.32E-06	1.11E-06				3.80E-07				4.28E-08	2.09E-07	5.83E-07
SVOC	Anthracene	120-12-7	1.33E-06	7.40E-07	1.61E-06	1.07E-06	1.58E-06		1.57E-06	9.00E-07	1.46E-06	8.02E-07	1.98E-08	5.48E-08	2.10E-07
SVOC	Benzo(a)anthracene	56-55-3	1.11E-10	6.56E-10	1.75E-09	1.50E-07	9.00E-07		1.54E-09	1.20E-07	7.00E-07	8.00E-07	2.10E-11	5.09E-11	2.00E-08
SVOC	Benzo(a)pyrene	50-32-8	6.25E-11	9.17E-10	9.81E-10	8.33E-08	5.00E-07		1.00E-09	7.78E-08	4.67E-07	4.67E-07	1.14E-11	3.11E-11	2.22E-08
SVOC	Benzo(b)fluoranthene	205-99-2	2.16E-10	9.56E-10	3.43E-09	2.94E-07	1.77E-06		2.89E-09	1.78E-07	1.30E-06	1.30E-06	3.58E-11	8.61E-11	2.44E-08
SVOC	Benzo(g,h,i)perylene	191-24-2	6.12E-11		9.72E-10	8.33E-08	5.00E-07		8.15E-10	6.11E-08	3.67E-07	3.67E-07	9.40E-12	2.12E-11	1.64E-08
SVOC	Benzo(k)fluoranthene	207-08-9	2.16E-10	8.06E-10	3.43E-09	2.94E-07	1.77E-06		2.89E-09	1.78E-07	1.30E-06	1.30E-06	3.55E-11	8.45E-11	2.28E-08
SVOC	Benzoic Acid	65-85-0	4.56E-04	2.00E-04	2.90E-03	1.82E-03	2.16E-03		5.45E-03	2.89E-03	4.07E-03		2.65E-05	5.96E-05	
SVOC	Benzyl Alcohol	100-51-6	9.97E-10		1.66E-08	1.47E-06	1.13E-05		2.22E-09				1.66E-10	3.74E-10	
SVOC	Butylbenzylphthalate	85-68-7	9.47E-08	5.58E-06	2.70E-07	2.33E-05	1.40E-04		5.80E-08	1.68E-06	2.20E-05	1.70E-05	2.65E-09	5.96E-09	
SVOC	Carbazole	86-74-8													2.67E-08
SVOC	Chrysene	218-01-9	1.50E-10	8.22E-10	2.43E-09	2.11E-07	1.27E-06		1.32E-09	8.56E-08	5.33E-07	4.33E-07	2.71E-11	6.56E-11	2.17E-08
SVOC	Di-n-butylphthalate	84-74-2	5.68E-08	3.80E-06	5.29E-08	4.19E-06	1.30E-04	2.80E-05	4.96E-08	3.15E-06	8.00E-05	3.13E-05	4.90E-10	1.11E-09	4.67E-09
SVOC	Di-n-octylphthalate	117-84-0	6.85E-09	4.47E-07	9.03E-09	7.22E-07	4.33E-06		1.12E-08	7.18E-07	1.27E-05	1.27E-05	8.56E-11	2.00E-10	
SVOC	Dibenzo(a,h)anthracene	53-70-3	1.17E-12		7.76E-12		2.33E-08		1.69E-10	1.50E-08	9.00E-08	9.00E-08			1.61E-08
SVOC	Dibenzofuran	132-64-9	2.73E-09	1.90E-07	1.77E-09	1.39E-07	8.33E-07		6.72E-10	3.32E-08	2.13E-07	1.43E-07	1.61E-11	3.63E-11	
SVOC	Diethylphthalate	84-66-2	1.07E-08	6.98E-07	1.63E-08	1.37E-06	2.13E-05		5.43E-09	2.24E-07	1.67E-06	1.67E-06	1.55E-10	3.49E-10	
SVOC	Dimethylphthalate	131-11-3	4.39E-08	2.42E-06	1.66E-07	1.44E-05	8.67E-05	3.67E-05	2.90E-08	4.75E-07	5.33E-06	4.67E-07	1.63E-09	3.67E-09	
SVOC	Fluoranthene	206-44-0	2.56E-09	1.70E-07	2.91E-09	2.28E-07	1.37E-06		4.22E-09	3.09E-07	2.03E-06	1.13E-06	3.18E-11	7.78E-11	2.19E-08
SVOC	Fluorene	86-73-7	1.98E-05	1.04E-05	3.17E-05	2.18E-05	2.98E-05		6.14E-06	1.11E-06	1.64E-06	1.04E-06	3.05E-07	6.87E-07	
SVOC	Hexachlorobenzene	118-74-1		3.22E-10			3.10E-07						7.12E-13	3.48E-12	
SVOC	Hexachlorobutadiene	87-68-3	4.29E-09	2.71E-07	8.82E-09	7.59E-07	2.00E-05		1.23E-09				8.56E-11	1.93E-10	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	5.62E-11	4.89E-10	9.01E-10	7.78E-08	4.67E-07		6.31E-10	4.56E-08	2.73E-07	2.73E-07	9.86E-12	2.50E-11	1.89E-08
SVOC	Isophorone	78-59-1	3.07E-03	1.56E-03	3.59E-03	2.09E-03	2.98E-03	2.24E-03	8.42E-03	4.46E-03	7.45E-03	2.03E-03	6.82E-05	7.23E-05	4.43E-06
SVOC	N-Nitroso-di-n-propylamine	621-64-7													
SVOC	N-Nitrosodiphenylamine	86-30-6	2.72E-08		1.80E-07		2.30E-06		3.93E-06	3.50E-06	3.72E-06	8.41E-06	1.56E-08	3.41E-08	
SVOC	Naphthalene	91-20-3	9.32E-04	1.29E-03	1.67E-03	1.05E-03	1.36E-03	1.70E-03	2.13E-03	1.11E-03	1.73E-03	1.18E-03	1.60E-05	3.59E-05	1.44E-05
SVOC	Pentachlorophenol	87-86-5	1.41E-08	8.77E-07	3.03E-08	2.57E-06	2.10E-05		1.42E-08	7.28E-07	5.33E-06	5.00E-07	2.91E-10	6.55E-10	
SVOC	Phenanthrene	85-01-8	6.37E-09	4.03E-07	1.17E-08	9.84E-07	7.00E-06		5.62E-09	3.19E-07	2.13E-06	1.43E-06	1.16E-10	2.65E-10	8.33E-09
SVOC	Phenol	108-95-2	2.68E-04	1.41E-04	7.41E-04	4.28E-04	5.44E-04	1.56E-03	2.41E-03	1.29E-03	2.11E-03	1.52E-04	6.35E-06	1.53E-05	9.81E-06
SVOC	Pyrene	129-00-0	4.02E-09	2.64E-07	5.39E-09	4.44E-07	2.67E-06		3.39E-09	2.12E-07	1.40E-06	7.67E-07	5.56E-11	1.33E-10	2.14E-08
SVOC	bis(2-Chloroethyl) ether	111-44-4	3.56E-04	3.66E-04	6.01E-04	3.93E-04	4.86E-04		8.87E-05				2.36E-04	2.40E-05	1.96E-04
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	2.26E-07	1.48E-05	2.73E-07	1.90E-05	7.67E-04	8.00E-05	9.98E-07	7.32E-05	2.97E-03	1.80E-04	2.86E-09	7.05E-09	2.22E-07
P/PCB	4,4'-DDD	72-54-8	2.31E-09	1.60E-07	1.07E-09	8.09E-08	1.10E-06		1.74E-10	8.33E-09		5.00E-08	9.29E-12	2.09E-11	4.33E-09
P/PCB	4,4'-DDE	72-55-9	3.31E-11		5.52E-10	4.89E-08	2.93E-07		7.36E-11				5.52E-12	1.24E-11	1.61E-08
P/PCB	4,4'-DDT	50-29-3	3.06E-09	2.14E-07	9.87E-10	6.93E-08	5.67E-07		1.74E-10				7.81E-12	1.76E-11	1.33E-08
P/PCB	Aldrin	309-00-2	2.27E-10		3.78E-09	3.35E-07	2.57E-06		5.04E-10				3.78E-11	8.51E-11	
P/PCB	Aroclor-1242	3469-21-9	1.94E-08	1.37E-06	2.15E-09		2.90E-06		1.88E-08	1.43E-06	9.33E-05	9.33E-05	2.33E-11	7.78E-11	
P/PCB	Aroclor-1248	2672-29-6	1.51E-08	9.41E-07	3.25E-08	2.76E-06	1.10E-04	1.10E-04	1.44E-08	7.82E-07	4.23E-05	4.23E-05	3.32E-10	7.81E-10	1.22E-08
P/PCB	Aroclor-1254	1097-69-1	2.33E-08	1.58E-06	2.43E-08	2.00E-06	1.20E-05	1.57E-06	9.51E-09	5.27E-07	1.47E-05	7.33E-06	2.95E-10	8.19E-10	4.89E-07
P/PCB	Aroclor-1260	1096-82-5	2.68E-08	9.83E-07	2.18E-07	1.92E-05	1.13E-03	2.07E-05	3.33E-08	3.25E-07	1.20E-05	1.20E-05	2.18E-09	4.93E-09	5.39E-08
P/PCB	Dieldrin	60-57-1	1.50E-10	1.10E-08	1.03E-11				3.51E-12						
P/PCB	Endosulfan I	959-98-8	7.52E-10	5.35E-08	5.14E-11				1.76E-11						2.17E-08
P/PCB	Endosulfan sulfate	1031-07-8													3.33E-09
P/PCB	Endrin	72-20-8	1.00E-09	7.14E-08	6.85E-11				2.34E-11						8.33E-09
P/PCB	Endrin aldehyde	7421-93-4													
P/PCB	Endrin ketone	3494-70-5		6.11E-10									2.70E-13	1.32E-12	
P/PCB	Heptachlor	76-44-8								4.89E-09		2.93E-08	9.65E-14	2.11E-13	3.44E-09

Table B-10c:

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Future Location of Exposure: AREA 1 Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Future AREA 1 Excavation Area 1 C_{air} (mg/m^3)	Future AREA 2 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 2 Excavation Area 2 C_{air} (mg/m^3)	Future AREA 2 Construction (0-10') Area 2 C_{air} (mg/m^3)	Future AREA 2 Construction (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 3 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 3 Excavation Area 3 C_{air} (mg/m^3)	Future AREA 3 Construction (0-10') Area 3 C_{air} (mg/m^3)	Future AREA 3 Construction (0-4') Area 2 C_{air} (mg/m^3)	Future AREA 4A Undeveloped All on-site areas C_{air} (mg/m^3)	Future AREA 4B Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 4B Excavation Area 4B C_{air} (mg/m^3)
P/PCB	Heptachlor epoxide	1024-57-3								2.33E-09		1.40E-08	4.61E-14	1.01E-13	
P/PCB	Methoxychlor	72-43-5													1.61E-08
P/PCB	alpha-BHC	319-84-6	1.24E-11		2.07E-10	1.83E-08	1.10E-07		2.76E-11				2.07E-12	4.65E-12	
P/PCB	alpha-Chlordane	5103-71-9													1.22E-08
P/PCB	beta-BHC	319-85-7	2.36E-11		3.94E-10	3.49E-08	2.67E-07		5.25E-11				3.94E-12	8.86E-12	1.44E-09
P/PCB	gamma-BHC	58-89-9													1.61E-09
P/PCB	gamma-Chlordane	5103-74-2	7.52E-10	5.43E-08	5.14E-11				1.76E-11						2.67E-09
INORG	Antimony	7440-36-0	1.33E-08	7.26E-07	4.61E-08	3.63E-06	5.47E-05	5.47E-05	1.01E-07	7.51E-06	5.07E-05	2.83E-05	5.02E-10	1.17E-09	
INORG	Arsenic	7440-38-2	2.90E-09	2.22E-07	3.34E-09	2.70E-07	2.59E-06	2.59E-06	2.80E-09	5.05E-07	1.80E-06	1.02E-05	1.32E-10	4.75E-10	4.22E-07
INORG	Barium	7440-39-3	1.93E-07	1.20E-05	6.89E-07	5.40E-05	8.97E-04	8.97E-04	1.61E-06	1.35E-04	2.13E-03	1.91E-03	1.24E-08	3.75E-08	
INORG	Beryllium	7440-41-7	1.43E-10	4.38E-08	2.17E-10	1.74E-08	1.13E-07		2.75E-10	3.41E-08	2.67E-07	5.00E-07	8.01E-11	3.83E-10	
INORG	Cadmium	7440-43-9	1.50E-08	6.69E-07	7.91E-08	5.89E-06	3.53E-05	3.53E-05	2.71E-07	2.03E-05	5.67E-04	5.80E-05	8.80E-10	2.08E-09	3.28E-07
INORG	Chromium 3+	6065-83-1	1.55E-07	7.56E-06	8.37E-07	7.05E-05	4.23E-04	4.23E-04	8.59E-07	6.56E-05	1.07E-03	8.80E-04	9.85E-09	2.39E-08	1.57E-06
INORG	Chromium 6+	8540-29-9	2.59E-08	1.26E-06	1.39E-07	1.17E-05	7.05E-05	7.05E-05	1.43E-07	1.09E-05	1.79E-04	1.47E-04	1.64E-09	3.98E-09	2.61E-07
INORG	Cobalt	7440-48-4	7.38E-09	5.11E-07	1.07E-08	7.86E-07	1.10E-05	1.10E-05	3.10E-08	2.73E-06	4.93E-05	4.93E-05	2.39E-10	7.68E-10	
INORG	Copper	7440-50-8	9.88E-08	3.19E-06	8.87E-07	7.33E-05	4.40E-04	4.40E-04	1.35E-06	1.01E-04	1.93E-03	1.49E-03	1.03E-08	2.48E-08	2.06E-06
INORG	Cyanide (total)	57-12-5	6.10E-09	4.32E-07	1.22E-09				1.79E-08	1.79E-06	2.21E-05	2.21E-05	7.18E-11	2.09E-10	
INORG	Lead	7439-92-1	9.38E-07	3.87E-05	6.62E-06	5.67E-04	3.40E-03	3.40E-03	5.08E-06	4.18E-04	5.73E-03	5.40E-03	7.88E-08	1.85E-07	8.00E-06
INORG	Manganese	7439-96-5	2.40E-07	3.00E-05	1.83E-07	1.31E-05	1.34E-04	1.34E-04	4.39E-07	4.64E-05	2.42E-04	5.13E-04	3.36E-08	1.56E-07	
INORG	Mercury	7439-97-6	1.78E-09	1.45E-07	5.32E-09	4.36E-07	2.62E-06	2.62E-06	7.20E-09	5.67E-07	1.20E-05	3.17E-06	1.54E-10	5.96E-10	2.50E-08
INORG	Nickel	7440-02-0	6.56E-09	4.68E-07	1.74E-08	1.37E-06	1.78E-05	1.78E-05	3.68E-08	3.04E-06	6.57E-05	6.57E-05	4.01E-10	1.40E-09	
INORG	Selenium	7782-49-2	6.45E-10	3.15E-08	2.85E-09	1.54E-07	2.77E-06	2.77E-06	2.39E-08	1.87E-06	5.23E-05	5.73E-06	4.68E-11	1.32E-10	
INORG	Silver	7440-22-4	7.20E-10	1.61E-08	8.48E-09	5.46E-07	1.16E-05	1.16E-05	5.15E-08	3.68E-06	1.04E-04	8.27E-06	6.87E-11	1.73E-10	
INORG	Thallium	7440-28-0	3.06E-11		4.76E-10	4.01E-08	3.33E-07		5.60E-10	4.21E-08	5.00E-07		4.53E-12	1.02E-11	
INORG	Vanadium	7440-62-2	7.36E-09	6.20E-07	7.04E-09	5.34E-07	4.07E-06	4.07E-06	1.28E-08	1.13E-06	1.59E-05	1.59E-05	3.75E-10	1.60E-09	
INORG	Zinc	7440-66-6	4.18E-07	1.70E-05	2.55E-06	1.84E-04	2.76E-03	2.76E-03	1.02E-05	8.71E-04	5.27E-03	5.27E-03	3.98E-08	9.49E-08	1.66E-05
TIC	Acetaldehyde	75-07-0													
TIC	Acetophenone	98-86-2													
TIC	Butanol, 1-	71-36-3													
TIC	Caprolactam	105-60-2													
TIC	Chlorodifluoromethane	75-45-6													
TIC	Cyclohexanone	108-94-1													
TIC	Diethyl ether	60-29-7													
TIC	Dioxane, 1,4-	123-91-1													
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5													
TIC	Hexane, n-	110-54-3	5.64E-12		9.40E-11	8.33E-09			1.25E-11				9.40E-13	2.12E-12	
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7													
TIC	Phthalic anhydride	85-44-9	3.64E-09	2.58E-07	2.48E-10				8.48E-11						

Table B-10b:c

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Future Location of Exposure: Area 5A Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Future Area 5A Excavation All on-site areas C_{air} (mg/m^3)	Future Area 5A Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future Area 5A Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future AREA 5B Excavation Area 5B C_{air} (mg/m^3)	Future AREA 6 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 6 Excavation All on-site areas C_{air} (mg/m^3)	Future AREA 6 Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future AREA 6 Construction (0-4') Areas 2 & 3 C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	7.61E-03	4.94E-04	4.07E-03	9.88E-08		1.55E-03	1.13E-04	1.19E-03	2.67E-08
VOC	1,1,2,2-Tetrachloroethane	79-34-5	3.08E-06	4.78E-08	1.73E-08			1.67E-06	2.87E-08	4.67E-09	
VOC	1,1,2-Trichloroethane	79-00-5	6.71E-06	2.19E-07	2.18E-07			3.78E-06	1.31E-07	5.87E-08	
VOC	1,1-Dichloroethane	75-34-3	1.72E-04	4.63E-06	3.61E-05	8.70E-10		4.26E-05	1.18E-06	9.74E-06	2.33E-07
VOC	1,1-Dichloroethene	75-35-4			2.84E-11	4.60E-08				7.65E-12	1.24E-08
VOC	1,2,4-Trimethylbenzene	95-63-6									
VOC	1,2-Dichloroethane	107-06-2	8.64E-05	1.91E-06	1.24E-05			2.72E-05	1.15E-06	3.33E-06	
VOC	1,2-Dichloroethene (total)	540-59-0	7.46E-04	1.51E-05	1.13E-04	4.41E-08		2.30E-04	9.05E-06	3.32E-05	9.68E-06
VOC	1,2-Dichloropropane	78-87-5	1.16E-04	1.10E-06	5.30E-06	1.10E-10		4.27E-05	6.57E-07	1.43E-06	1.92E-08
VOC	1,3,5-Trimethylbenzene	108-67-8									
VOC	2-Butanone	78-93-3	1.67E-06	4.62E-06	5.74E-04	1.72E-06		3.20E-06	1.06E-06	1.68E-04	4.63E-07
VOC	2-Hexanone	591-78-6	1.21E-03	1.46E-05	1.16E-04	2.01E-04		2.61E-04	3.65E-06	3.12E-05	5.42E-05
VOC	4-Methyl-2-pentanone	108-10-1	2.16E-03	1.59E-04	1.38E-03	6.81E-05		3.34E-04	3.64E-05	4.05E-04	5.77E-05
VOC	Acetone	67-64-1	3.34E-03	4.73E-04	4.05E-03	8.24E-04		5.48E-04	1.09E-04	1.19E-03	2.22E-04
VOC	Benzene	71-43-2	3.01E-03	3.24E-04	6.89E-04	6.05E-05	5.74E-02	4.28E-03	1.64E-04	2.02E-04	1.63E-05
VOC	Bromodichloromethane	75-27-4					4.06E-06				
VOC	Carbon Disulfide	75-15-0		4.24E-10	1.74E-11				2.55E-10	5.10E-12	
VOC	Carbon Tetrachloride	56-23-5									
VOC	Chlorobenzene	108-90-7	8.85E-04	2.44E-05	2.00E-04	3.60E-08		1.37E-04	5.66E-06	5.86E-05	3.39E-06
VOC	Chloroethane	75-00-3	4.96E-04	5.04E-06	6.96E-11		7.36E-03	1.21E-03	3.02E-06	2.04E-11	
VOC	Chloroform	67-66-3	4.09E-04	1.97E-05	5.08E-05	5.80E-11	5.38E-06	1.63E-04	1.18E-05	1.37E-05	1.37E-08
VOC	Chloromethane	74-87-3									
VOC	Ethyl Benzene	100-41-4	3.01E-03	1.71E-04	1.23E-03	4.42E-04		5.64E-04	4.00E-05	3.60E-04	3.22E-04
VOC	Methylene Chloride	75-09-2	3.88E-03	2.73E-05	4.61E-05	6.25E-08	4.41E-04	1.99E-03	1.64E-05	1.24E-05	3.16E-07
VOC	Styrene	100-42-5	6.20E-04	2.77E-05	2.22E-04	1.33E-07		9.78E-05	6.35E-06	6.51E-05	5.78E-06
VOC	Tetrachloroethene	127-18-4	4.99E-03	2.02E-04	1.58E-03	7.52E-04		9.63E-04	4.63E-05	4.63E-04	3.86E-04
VOC	Tetrahydrofuran	109-99-9									
VOC	Toluene	108-88-3	1.83E-02	3.79E-04	3.18E-03	1.49E-03	1.23E-05	3.67E-03	8.89E-05	9.32E-04	7.12E-04
VOC	Trichloroethene	79-01-6	1.23E-02	8.13E-04	5.90E-03	7.29E-04		1.86E-03	1.87E-04	1.73E-03	1.97E-04
VOC	Vinyl Chloride	75-01-4	7.39E-06	1.61E-07	9.25E-07			1.60E-06	5.53E-08	2.49E-07	
VOC	Xylenes (total)	1330-20-7	9.22E-03	1.77E-04	1.68E-03	7.60E-04		1.88E-03	4.29E-05	4.93E-04	3.26E-04
VOC	cis-1,2-Dichloroethene	156-59-2	8.09E-04	7.52E-05	5.69E-07	3.46E-07		4.54E-04	4.51E-05	1.53E-07	9.34E-08
VOC	m,p-xylene	6777-61-2	2.99E-03	2.71E-05	2.21E-04	3.64E-08		1.27E-03	1.23E-05	6.48E-05	9.81E-09
VOC	ortho-xylene	95-47-6	9.29E-04	9.79E-06	8.01E-05	1.30E-08		3.72E-04	5.35E-06	2.35E-05	1.27E-08
VOC	p-Cymene	99-87-6									
VOC	trans-1,2-Dichloroethene	156-60-5	1.21E-10	4.16E-09			6.02E-06	9.87E-11	3.34E-09		
SVOC	1,2,4-Trichlorobenzene	120-82-1	1.36E-05	1.74E-07	1.40E-06			3.17E-06	4.36E-08	3.78E-07	
SVOC	1,2-Dichlorobenzene	95-50-1	2.75E-04	3.15E-06	2.48E-05	9.47E-05		6.76E-05	8.19E-07	6.69E-06	2.55E-05
SVOC	1,3-Dichlorobenzene	541-73-1	1.47E-11	5.24E-09				8.27E-12	3.15E-09		
SVOC	1,4-Dichlorobenzene	106-46-7	1.42E-05	8.52E-08	4.63E-07			6.16E-06	5.11E-08	1.25E-07	
SVOC	2,2'-oxybis(1-Chloropropane)	108-60-1	2.62E-05	3.31E-07				6.40E-05	1.98E-07		
SVOC	2,4,5-Trichlorophenol	95-95-4		6.83E-10	4.26E-09	9.86E-10			1.57E-10	1.25E-09	1.25E-09
SVOC	2,4-Dichlorophenol	120-83-2	6.76E-07	5.17E-09				3.80E-07	3.10E-09		
SVOC	2,4-Dimethylphenol	105-67-9	1.20E-05	1.90E-07	1.74E-06	3.89E-06		2.39E-06	4.73E-08	5.10E-07	1.05E-06
SVOC	2,4-Dinitrotoluene	121-14-2	3.00E-07	1.06E-08	7.31E-08			4.16E-08	2.43E-09	2.14E-08	
SVOC	2,6-Dinitrotoluene	606-20-2	1.33E-06	2.45E-08	2.03E-07		5.50E-08	2.87E-07	6.14E-09	5.47E-08	
SVOC	2-Chloronaphthalene	91-58-7									
SVOC	2-Methylnaphthalene	91-57-6	5.06E-05	9.33E-07	7.25E-06	3.47E-06		1.04E-05	2.31E-07	2.08E-06	1.67E-06
SVOC	2-Methylphenol	95-48-7	2.95E-05	2.78E-07	2.56E-06	7.24E-06		6.76E-06	6.96E-08	6.90E-07	1.95E-06
SVOC	3,3'-Dichlorobenzidine	91-94-1		4.20E-12					2.52E-12		
SVOC	4-Bromophenyl-phenylether	101-55-3									
SVOC	4-Chloro-3-methylphenol	59-50-7		6.96E-10					4.18E-10		

Table B-10b:c

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

Analyte Group	Substance	CASRN	Current/Future Scenario: Future Location of Exposure: Area 5A Type of Activity at Emission Location: Routine Industrial Location of Emission: All on-site areas C_{air} (mg/m^3)	Future Area 5A Excavation All on-site areas C_{air} (mg/m^3)	Future Area 5A Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future Area 5A Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future AREA 5B Excavation Area 5B C_{air} (mg/m^3)	Future AREA 6 Routine Industrial All on-site areas C_{air} (mg/m^3)	Future AREA 6 Excavation All on-site areas C_{air} (mg/m^3)	Future AREA 6 Construction (0-10') Areas 2 & 3 C_{air} (mg/m^3)	Future AREA 6 Construction (0-4') Areas 2 & 3 C_{air} (mg/m^3)
SVOC	4-Chlorophenyl-phenyl ether	7005-72-3									
SVOC	4-Methylphenol	106-44-5	9.77E-05	1.01E-06	8.53E-06	2.76E-05		2.15E-05	2.53E-07	2.30E-06	7.44E-06
SVOC	4-Nitrophenol	100-02-7	2.00E-07	7.01E-09	4.61E-08			2.78E-08	1.61E-09	1.35E-08	
SVOC	Acenaphthene	83-32-9	6.02E-06	5.87E-08	5.03E-07	2.09E-09		1.68E-06	1.47E-08	1.36E-07	5.60E-09
SVOC	Acenaphthylene	208-96-8	4.34E-07	3.35E-09				2.44E-07	2.01E-09		
SVOC	Anthracene	120-12-7	2.32E-07	2.75E-09	2.54E-08	3.83E-09		5.53E-08	6.32E-10	7.43E-09	2.97E-09
SVOC	Benzo(a)anthracene	56-55-3	2.16E-10	3.67E-10	1.22E-08	1.39E-08		4.06E-11	8.42E-11	3.57E-09	
SVOC	Benzo(a)pyrene	50-32-8	1.29E-10	2.38E-10	8.12E-09	8.12E-09		2.38E-11	5.46E-11	2.38E-09	
SVOC	Benzo(b)fluoranthene	205-99-2	4.15E-10	5.45E-10	2.26E-08	2.26E-08		7.85E-11	1.25E-10	6.63E-09	
SVOC	Benzo(g,h,i)perylene	191-24-2	1.17E-10	1.87E-10	6.38E-09	6.38E-09		2.22E-11	4.29E-11	1.87E-09	
SVOC	Benzo(k)fluoranthene	207-08-9	4.15E-10	5.45E-10	2.26E-08	2.26E-08		7.85E-11	1.25E-10	6.63E-09	
SVOC	Benzoic Acid	65-85-0	5.26E-04	8.85E-06	7.09E-05			9.27E-05	2.03E-06	2.08E-05	
SVOC	Benzyl Alcohol	100-51-6	1.34E-09	2.12E-09	1.12E-07			2.91E-10	5.30E-10	3.03E-08	
SVOC	Butylbenzylphthalate	85-68-7	2.46E-08	3.36E-08	1.39E-06	2.96E-07		5.96E-09	8.40E-09	3.74E-07	
SVOC	Carbazole	86-74-8		4.62E-12					3.71E-12		
SVOC	Chrysene	218-01-9	2.53E-10	3.04E-10	1.25E-08	7.54E-09		5.00E-11	7.60E-11	3.38E-09	
SVOC	Di-n-butylphthalate	84-74-2	7.77E-09	9.63E-09	1.39E-06	5.45E-07		1.98E-09	2.21E-09	4.08E-07	7.48E-08
SVOC	Di-n-octylphthalate	117-84-0	1.42E-09	2.20E-09	2.20E-07	2.20E-07		3.20E-10	5.04E-10	6.46E-08	
SVOC	Dibenzo(a,h)anthracene	53-70-3	1.02E-11	4.59E-11	1.57E-09	1.57E-09		1.41E-12	1.05E-11	4.59E-10	
SVOC	Dibenzofuran	132-64-9	2.21E-10	2.00E-10	8.25E-09	2.49E-09		7.03E-11	5.00E-11	2.23E-09	
SVOC	Diethylphthalate	84-66-2	1.70E-09	1.98E-09	2.11E-07	2.90E-08		4.44E-10	4.95E-10	5.70E-08	
SVOC	Dimethylphthalate	131-11-3	1.45E-08	2.08E-08	8.58E-07	3.63E-07		3.42E-09	5.20E-09	2.31E-07	9.79E-08
SVOC	Fluoranthene	206-44-0	5.01E-10	9.45E-10	3.54E-08	1.97E-08		1.13E-10	2.17E-10	1.04E-08	
SVOC	Fluorene	86-73-7	3.03E-06	3.14E-08	2.95E-07	3.60E-09		8.15E-07	7.84E-09	7.97E-08	4.25E-09
SVOC	Hexachlorobenzene	118-74-1		1.16E-13	3.07E-09				6.96E-14	8.28E-10	
SVOC	Hexachlorobutadiene	87-68-3	7.93E-10	1.09E-09	1.98E-07			2.07E-10	2.73E-10	5.34E-08	
SVOC	Indeno(1,2,3-cd)pyrene	193-39-5	1.02E-10	1.39E-10	4.76E-09	4.76E-09		1.96E-11	3.20E-11	1.39E-09	
SVOC	Isophorone	78-59-1	7.98E-04	1.36E-05	1.30E-04	2.26E-05	5.40E-07	1.63E-04	3.13E-06	3.80E-05	1.02E-05
SVOC	N-Nitroso-di-n-propylamine	621-64-7									
SVOC	N-Nitrosodiphenylamine	86-30-6	2.36E-07	1.07E-08	7.64E-08	2.49E-08		3.27E-08	2.46E-09	2.19E-08	3.56E-08
SVOC	Naphthalene	91-20-3	2.60E-04	3.52E-06	3.00E-05	1.69E-05		5.50E-05	8.52E-07	8.81E-06	5.97E-06
SVOC	Pentachlorophenol	87-86-5	3.27E-09	3.70E-09	2.08E-07	8.70E-09		7.74E-10	9.24E-10	5.61E-08	
SVOC	Phenanthrene	85-01-8	1.29E-09	1.42E-09	6.93E-08	2.49E-08		3.13E-10	3.54E-10	1.87E-08	
SVOC	Phenol	108-95-2	1.95E-04	3.95E-06	3.67E-05	1.55E-05	4.05E-06	3.34E-05	9.08E-07	1.08E-05	4.17E-06
SVOC	Pyrene	129-00-0	6.62E-10	6.49E-10	2.64E-08	1.33E-08		1.65E-10	1.60E-10	7.14E-09	
SVOC	bis(2-Chloroethyl) ether	111-44-4	5.85E-05	6.36E-07	4.81E-06		2.20E-05	2.47E-05	1.84E-07	1.30E-06	
SVOC	bis(2-Ethylhexyl)phthalate	117-81-7	8.08E-08	2.24E-07	5.16E-05	3.13E-06		1.49E-08	5.14E-08	1.51E-05	2.14E-07
P/PCB	4,4'-DDD	72-54-8	1.34E-10	1.16E-10	1.09E-08	8.70E-10		4.98E-11	3.46E-11	2.94E-09	
P/PCB	4,4'-DDE	72-55-9	4.46E-11	7.04E-11	2.90E-09			9.65E-12	1.76E-11	7.83E-10	
P/PCB	4,4'-DDT	50-29-3	1.43E-10	9.97E-11	5.61E-09			5.88E-11	4.62E-11	1.51E-09	
P/PCB	Aldrin	309-00-2	3.06E-10	4.83E-10	2.54E-08			6.62E-11	1.21E-10	6.85E-09	
P/PCB	Aroclor-1242	3469-21-9	1.61E-09	4.39E-09	1.62E-06	1.62E-06		4.41E-10	1.01E-09	4.76E-07	
P/PCB	Aroclor-1248	2672-29-6	3.46E-09	3.97E-09	1.09E-06	1.09E-06		8.25E-10	9.92E-10	2.94E-07	2.94E-07
P/PCB	Aroclor-1254	1097-69-1	2.77E-09	2.88E-09	2.55E-07	1.28E-07		7.74E-10	7.20E-10	7.48E-08	4.18E-09
P/PCB	Aroclor-1260	1096-82-5	1.81E-08	2.76E-08	1.12E-05	2.09E-07		4.03E-09	6.91E-09	3.03E-06	5.52E-08
P/PCB	Dieldrin	60-57-1	4.01E-12	3.94E-12				2.26E-12	2.37E-12		
P/PCB	Endosulfan I	959-98-8	2.01E-11	1.93E-11				1.13E-11	1.16E-11		
P/PCB	Endosulfan sulfate	1031-07-8		5.76E-13					4.62E-13		
P/PCB	Endrin	72-20-8	2.67E-11	2.57E-11				1.50E-11	1.54E-11		
P/PCB	Endrin aldehyde	7421-93-4									
P/PCB	Endrin ketone	3494-70-5		2.20E-13					1.32E-13		
P/PCB	Heptachlor	76-44-8		1.50E-11		5.10E-10			3.43E-12		

Table B-10b:c

Exposure Concentrations (mg/m^3) in Ambient Air - Hypothetical Future Land Use
Soil Approach 2: Subsurface Soil
ACS NPL Site, Griffith, Indiana

	Current/Future Scenario:		Future	Future	Future	Future	Future	Future	Future	Future	Future
	Location of Exposure:		Area 5A	Area 5A	Area 5A	Area 5A	AREA 5B	AREA 6	AREA 6	AREA 6	AREA 6
	Type of Activity at Emission Location:		Routine Industrial	Excavation	Construction (0-10')	Construction (0-10')	Excavation	Routine Industrial	Excavation	Construction (0-10')	Construction (0-4')
	Location of Emission:		All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3	Area 5B	All on-site areas	All on-site areas	Areas 2 & 3	Areas 2 & 3
Analyte Group	Substance	CASRN	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)	C_{air} (mg/m^3)
P/PCB	Heptachlor epoxide	1024-57-3		7.14E-12		2.44E-10			1.64E-12		
P/PCB	Methoxychlor	72-43-5		2.78E-12					2.23E-12		
P/PCB	alpha-BHC	319-84-6	1.67E-11	2.64E-11	1.09E-09			3.62E-12	6.60E-12	2.94E-10	
P/PCB	alpha-Chlordane	5103-71-9		2.11E-12					1.69E-12		
P/PCB	beta-BHC	319-85-7	3.18E-11	5.03E-11	2.64E-09			6.89E-12	1.26E-11	7.12E-10	
P/PCB	gamma-BHC	58-89-9		2.78E-13					2.23E-13		
P/PCB	gamma-Chlordane	5103-74-2	2.01E-11	1.96E-11				1.13E-11	1.17E-11		
INORG	Antimony	7440-36-0	9.30E-09	2.30E-08	8.82E-07	5.41E-07		1.66E-09	5.27E-09	2.58E-07	1.46E-07
INORG	Arsenic	7440-38-2	4.58E-10	1.55E-09	3.13E-08	1.77E-07		1.13E-10	3.55E-10	9.18E-09	6.92E-09
INORG	Barium	7440-39-3	1.44E-07	4.14E-07	3.71E-05	3.32E-05		2.55E-08	9.49E-08	1.09E-05	2.39E-06
INORG	Beryllium	7440-41-7	3.41E-11	1.04E-10	4.64E-09	8.70E-09		7.43E-12	2.39E-11	1.36E-09	
INORG	Cadmium	7440-43-9	2.13E-08	6.21E-08	9.86E-06	1.01E-06		3.48E-09	1.43E-08	2.89E-06	9.43E-08
INORG	Chromium 3+	6065-83-1	1.12E-07	2.01E-07	1.86E-05	1.53E-05		2.17E-08	4.61E-08	5.46E-06	1.13E-06
INORG	Chromium 6+	8540-29-9	1.87E-08	3.35E-08	3.11E-06	2.55E-06		3.62E-09	7.68E-09	9.11E-07	1.88E-07
INORG	Cobalt	7440-48-4	2.67E-09	8.37E-09	8.58E-07	8.58E-07		5.02E-10	1.92E-09	2.52E-07	2.93E-08
INORG	Copper	7440-50-8	1.42E-07	3.09E-07	3.36E-05	2.59E-05		2.54E-08	7.08E-08	9.84E-06	1.17E-06
INORG	Cyanide (total)	57-12-5	1.22E-09	5.48E-09	3.84E-07	3.84E-07		2.37E-10	1.26E-09	1.13E-07	
INORG	Lead	7439-92-1	7.84E-07	1.28E-06	9.98E-05	9.40E-05		1.55E-07	2.93E-07	2.92E-05	9.08E-06
INORG	Manganese	7439-96-5	4.29E-08	1.42E-07	4.22E-06	8.93E-06		9.47E-09	3.26E-08	1.24E-06	3.58E-07
INORG	Mercury	7439-97-6	8.27E-10	1.73E-09	2.09E-07	5.51E-08		1.62E-10	3.98E-10	6.12E-08	6.99E-09
INORG	Nickel	7440-02-0	3.47E-09	9.32E-09	1.14E-06	1.14E-06		6.39E-10	2.14E-09	3.35E-07	4.74E-08
INORG	Selenium	7782-49-2	1.57E-09	5.72E-09	9.11E-07	9.98E-08		2.33E-10	1.31E-09	2.67E-07	7.40E-09
INORG	Silver	7440-22-4	3.54E-09	1.13E-08	1.81E-06	1.44E-07		5.30E-10	2.58E-09	5.30E-07	3.11E-08
INORG	Thallium	7440-28-0	6.66E-11	1.29E-10	8.70E-09			1.21E-11	2.95E-11	2.55E-09	
INORG	Vanadium	7440-62-2	1.38E-09	3.46E-09	2.77E-07	2.77E-07		3.08E-10	7.94E-10	8.11E-08	1.09E-08
INORG	Zinc	7440-66-6	7.68E-07	2.67E-06	9.16E-05	9.16E-05		1.22E-07	6.12E-07	2.69E-05	7.38E-06
TIC	Acetaldehyde	75-07-0									
TIC	Acetophenone	98-86-2									
TIC	Butanol, 1-	71-36-3									
TIC	Caprolactam	105-60-2									
TIC	Chlorodifluoromethane	75-45-6									
TIC	Cyclohexanone	108-94-1									
TIC	Diethyl ether	60-29-7									
TIC	Dioxane, 1,4-	123-91-1									
TIC	Ethanol, 2-(2-butoxyethoxy)-	112-34-5									
TIC	Hexane, n-	110-54-3	7.60E-12	1.20E-11				1.65E-12	3.00E-12		
TIC	Phenol, 4,4'-(1-methylethylide	80-05-7									
TIC	Phthalic anhydride	85-44-9	9.70E-11	9.28E-11				5.45E-11	5.57E-11		

Table B-11: Modeled Vapor Concentrations (mg/m^3) in Ambient Air from Soil - Maximum 8 hr Average 100 ft. from Source ACS NPL Site, Griffith, Indiana

	Location of Exposure:		**AREA 2**	
	Soil Concentration Summary Statistic:		UCL/Max	Max
	Location of Emission:		At Area	At Area
	C/Q (kg/m^3 per $kg/m^2/s$)		7.9E+00	7.9E+00
Analyte Group	**Substance**	**CASRN**	C_{air} (mg/m^3)	C_{air} (mg/m^3)
VOC	1,1,1-Trichloroethane	71-55-6	3.0E-01	1.4E+00
VOC	1,2-Dichloroethene (total)	540-59-0	2.8E-01	5.7E-01
VOC	2-Butanone	78-93-3	2.2E+00	2.0E+01
VOC	Acetone	67-64-1	7.4E-01	5.6E+00
VOC	Benzene	71-43-2	2.7E-01	1.7E+00
VOC	Chloroform	67-66-3	3.4E-01	2.6E+00
VOC	Ethyl Benzene	100-41-4	1.3E+00	5.7E+00
VOC	Methylene Chloride	75-09-2	3.1E-01	1.4E+00
VOC	Styrene	100-42-5	3.3E-02	1.7E-01
VOC	Tetrachloroethene	127-18-4	2.4E+00	1.6E+01
VOC	Toluene	108-88-3	7.7E+00	1.5E+01
VOC	Trichloroethene	79-01-6	7.8E-01	5.0E+00
VOC	Xylenes (total)	1330-20-7	1.1E+01	2.8E+01

Table B-12: Comparison of Monitored Air Concentrations to Modeled Air Concentrations

	conversion factor (mg/m^3 per ppb)	6/23/97		6/25/97		6/26/97		7/16/97		7/17/97		7/18/97		Maximum Measured Air Concentration During Study (mg/m^3)	Predicted Air Concentration (mg/m^3)	
		UW	DW	UW	DW	UW	DW	UW	DW	UW	DW	UW	DW		Based on Minimum of 95% UCL/Max Conc. In Soil	Based on Maximum Conc. In Soil
1,1,1-Trichloroethane	5.55				3.9E-02	3.3E-02	2.2E-02		2.2E-02		2.2E-02			3.9E-02	3.0E-01	1.4E+00
2-Butanone	3				7.5E-02		1.7E-01							1.7E-01	2.2E+00	2.0E+01
Acetone	2.42	9.7E-03		3.6E-02	9.4E-02	4.4E-02	8.7E-01		4.6E-02		2.4E-01	2.7E-02		8.7E-01	7.4E-01	5.6E+00
Benzene	3.25				2.9E-02	2.6E-02	6.5E-03		2.0E-02		2.6E-02			2.9E-02	2.7E-01	1.7E+00
Chloroform	4.96				1.5E-02									1.5E-02	3.4E-01	2.6E+00
cis-1,2-Dichloroethene[1]	4.03						1.2E-02							1.2E-02	2.8E-01	5.7E-01
Ethylbenzene	4.41				2.2E-02	1.8E-02	8.4E-02		8.8E-03		1.8E-02	2.6E-02		8.4E-02	1.3E+00	5.7E+00
Methylene chloride	3.53			1.4E-02	4.9E-02	3.9E-02	2.0E-01	7.1E-03	1.8E-02		3.2E-02			2.0E-01	3.1E-01	1.4E+00
Styrene	4.33						1.7E-02							1.7E-02	3.3E-02	1.7E-01
Tetrachloroethene	6.89				2.1E-01	6.9E-02	7.6E-02	2.1E-02	2.8E-02		6.2E-02	1.4E-02	4.1E-02	2.1E-01	2.4E+00	1.6E+01
Toluene	3.83			1.5E-02	2.0E-01	1.8E-01	2.8E-01	1.9E-02	6.9E-02		1.2E-01	7.3E-02	2.3E-02	2.8E-01	7.7E+00	1.5E+01
Trichloroethene	5.46				3.8E-02	3.8E-02	3.3E-02				3.8E-02			3.8E-02	7.8E-01	5.0E+00
Xylenes	4.41				7.9E-02	1.0E-01	4.9E-01	5.3E-02	6.2E-02	8.8E-03	8.8E-02	1.7E-01	1.8E-02	4.9E-01	1.1E+01	2.8E+01

Note:
UW = Upwind
DW = Downwind

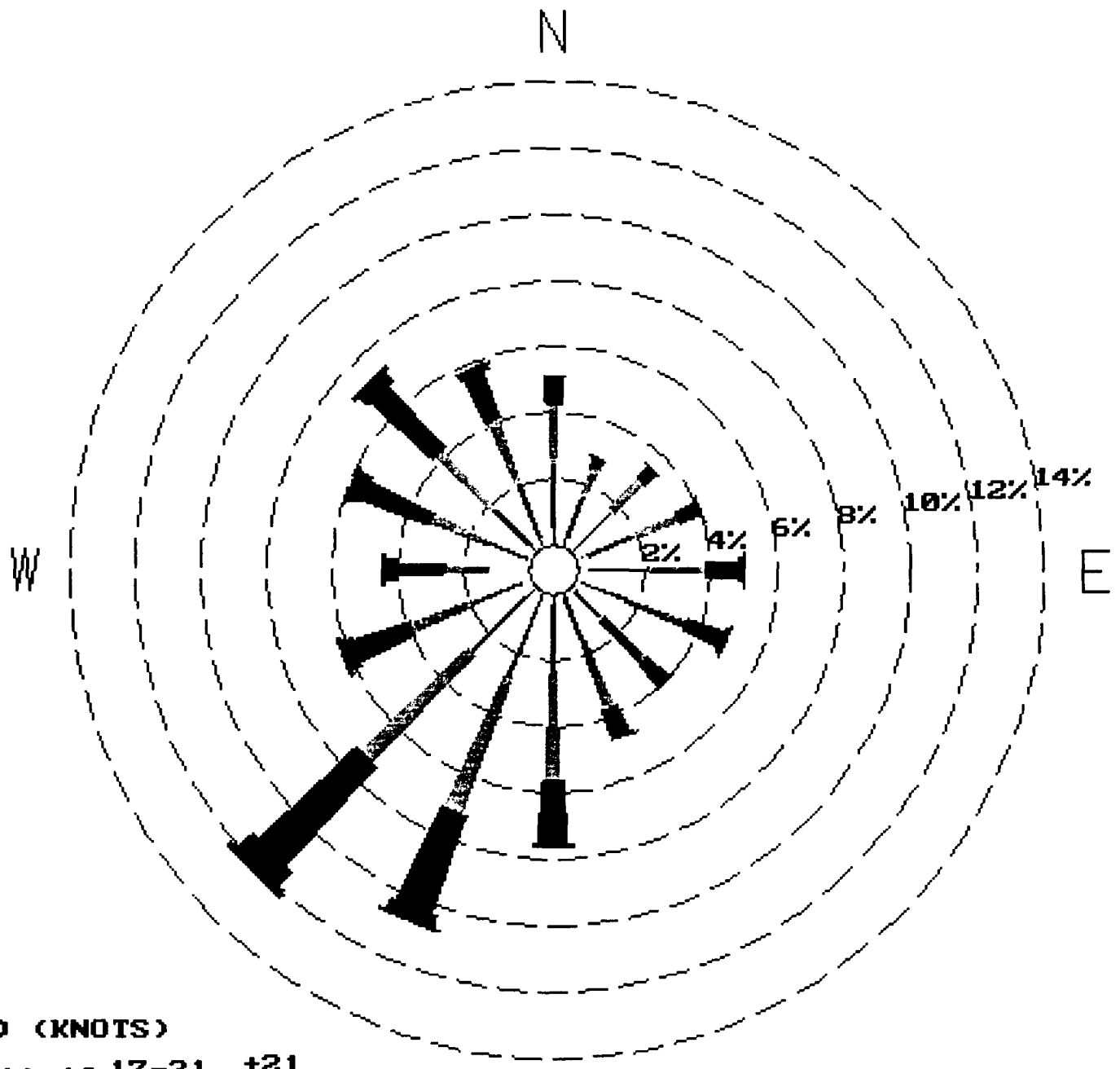
[1] Modeled air concentrations are based on concentrations of 1,2-dichloroethene (total) in soil because most soil samples were not analyzed for isomers.

South Bend, IN

January 1

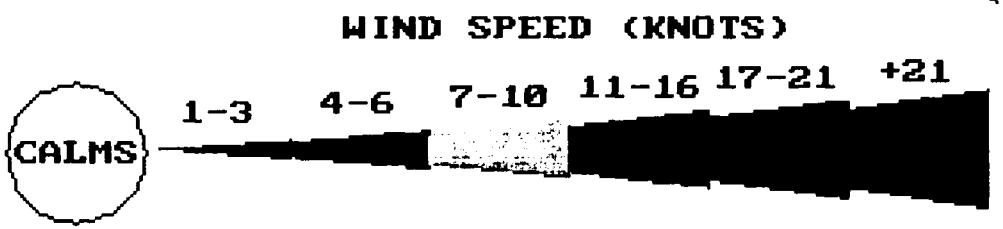
December 31

Midnight-11 PM



NOTE: Frequencies indicate direction from which the wind is blowing.

CALM WINDS 5.06%

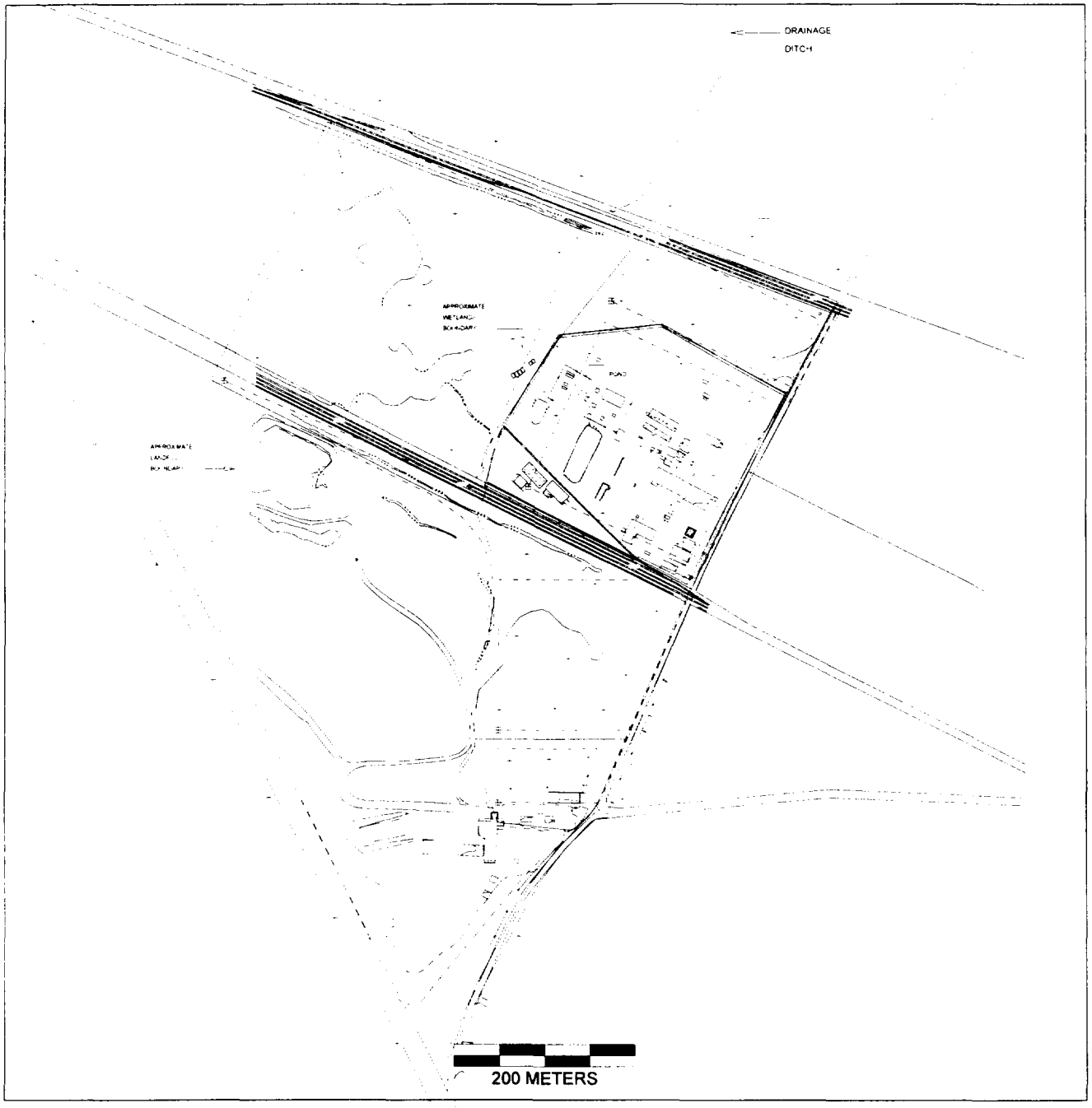


ATTACHMENT 1

ISCST3 Model Output File for Emissions Under Routine Conditions

American Chemical Services (ACS)

Routine Emissions



S:\SONG\ACS\RISKCALC\AIR\ACSFULL.DAT

```
                    ISCST3 - (DATED 96113)

               IBM-PC VERSION (3.04)     ISCST3R
       (C) COPYRIGHT 1992-1996, TRINITY CONSULTANTS, INC.

 Run Began on  7/04/1998 at 16:08:42

 ** BREEZE AIR ISCST3 - C:\ISCST3\ACSFULL.DAT
 ** Trinity Consultants Incorporated, Dallas, TX

 CO STARTING
 CO TITLEONE  American Chemical Services (ACS)
 CO MODELOPT  DFAULT  CONC  RURAL
 CO AVERTIME  1  8  ANNUAL
 CO POLLUTID  OTHER
 CO TERRHGTS  FLAT
 CO RUNORNOT  RUN
 CO FINISHED

 SO STARTING
 SO ELEVUNIT  METERS
 SO LOCATION  AREA1  AREA  1582.0  2073.0  0
 ** SRCDESCR  ONSCA/SBTL
 SO LOCATION  AREA3  AREA  1548.2  1724.7  0
 ** SRCDESCR  Kapica-Pazmey
 SO LOCATION  AREA2  AREA  1549.0  1805.0  0
 ** SRCDESCR  OFFSCA
 SO LOCATION  AREA4A  AREA  1244.0  2189.0  0
 ** SRCDESCR  Wetlands
 SO LOCATION  AREA4B  AREA  1674.0  2277.0  0
 ** SRCDESCR  On-Site North
 SO SRCPARAM  AREA1  1.000000E+00  0  200  200  25  0
 SO SRCPARAM  AREA3  1.000000E+00  0  110  60  0  0
 SO SRCPARAM  AREA2  1.000000E+00  0  145  165  0  0
 SO SRCPARAM  AREA4A  1.000000E+00  0  300  310  23  0
 SO SRCPARAM  AREA4B  1.000000E+00  0  220  80  25  0
 SO CONCUNIT  1.0E+03  GRAMS/SEC  MILLIGRAMS/M**3
 SO SRCGROUP  AREA_1 AREA1
 SO SRCGROUP  AREA_2 AREA2
 SO SRCGROUP  AREA_3 AREA3
 SO SRCGROUP  AREA_4A AREA4A
 SO SRCGROUP  AREA_4B AREA4B
 SO FINISHED

 RE STARTING
 RE DISCCART  1686.4  1729.0
 ** RCPDESCR  Area 5A_1 - Reder
 RE DISCCART  1571.4  1578.2
 ** RCPDESCR  Area 5A_2 - Arbogast
 RE DISCCART  1570.3  2086.5
 ** RCPDESCR  Area 1_1
 RE DISCCART  1612.9  2151.4
```

```
** RCPDESCR  Area 1_2
RE DISCCART  1650.2  2219.5
** RCPDESCR  Area 1_3
RE DISCCART  1665.1  2043.9
** RCPDESCR  Area 1_4
RE DISCCART  1706.6  2117.4
** RCPDESCR  Area 1_5
RE DISCCART  1752.4  2207.8
** RCPDESCR  Area 1_6
RE DISCCART  1748.1  2009.9
** RCPDESCR  Area 1_7
RE DISCCART  1788.6  2085.4
** RCPDESCR  Area 1_8
RE DISCCART  1829.0  2167.4
** RCPDESCR  Area 1_9
RE DISCCART  1715.0  2321.8
** RCPDESCR  Area 4B_1
RE DISCCART  1796.9  2291.0
** RCPDESCR  Area 4B_2
RE DISCCART  1880.8  2259.1
** RCPDESCR  Area 4B_3
RE DISCCART  1685.3  2277.1
** RCPDESCR  Area 4B_4
RE DISCCART  1765.0  2251.6
** RCPDESCR  Area 4B_5
RE DISCCART  1856.4  2215.4
** RCPDESCR  Area 4B_6
RE DISCCART  1376.1  2417.0
** RCPDESCR  Area 4A_1
RE DISCCART  1501.7  2372.3
** RCPDESCR  Area 4A_2
RE DISCCART  1616.7  2330.8
** RCPDESCR  Area 4A_3
RE DISCCART  1331.3  2310.6
** RCPDESCR  Area 4A_4
RE DISCCART  1450.6  2272.3
** RCPDESCR  Area 4A_5
RE DISCCART  1564.5  2235.0
** RCPDESCR  Area 4A_6
RE DISCCART  1281.3  2214.8
** RCPDESCR  Area 4A_7
RE DISCCART  1392.0  2165.9
** RCPDESCR  Area 4A_8
RE DISCCART  1497.4  2113.3
** RCPDESCR  Area 4A_9
RE DISCCART  1580.5  1998.6
** RCPDESCR  Area 2_1
RE DISCCART  1656.1  1965.6
** RCPDESCR  Area 2_2
RE DISCCART  1724.2  1935.8
** RCPDESCR  Area 2_3
RE DISCCART  1568.8  1908.2
```

```
** RCPDESCR  Area 2_4
RE DISCCART  1626.3  1883.7
** RCPDESCR  Area 2_5
RE DISCCART  1690.1  1865.6
** RCPDESCR  Area 2_6
RE DISCCART  1550.7  1827.3
** RCPDESCR  Area 2_7
RE DISCCART  1611.4  1829.4
** RCPDESCR  Area 2_8
RE DISCCART  1665.7  1827.3
** RCPDESCR  Area 2_9
RE DISCCART  1561.3  1771.2
** RCPDESCR  Area 3_1
RE DISCCART  1605.0  1773.3
** RCPDESCR  Area 3_2
RE DISCCART  1648.6  1775.5
** RCPDESCR  Area 3_3
RE DISCCART  1562.4  1740.4
** RCPDESCR  Area 3_4
RE DISCCART  1602.8  1742.5
** RCPDESCR  Area 3_5
RE DISCCART  1643.3  1744.6
** RCPDESCR  Area 3_6
RE DISCCART  1031.8  2255.4
** RCPDESCR  Area 6_1
RE DISCCART  1098.2  2119.2
** RCPDESCR  Area 6_2
RE DISCCART  1167.9  1986.4
** RCPDESCR  Area 6_3
RE DISCCART  1231.1  1860.3
** RCPDESCR  Area 6_4
RE DISCCART  1294.2  1730.8
** RCPDESCR  Area 6_5
RE DISCCART  1367.2  1598.0
** RCPDESCR  Area 6_6
RE DISCCART  1437.0  1461.1
** RCPDESCR  Area 6_7
RE DISCCART  1927.0  2312.0
** RCPDESCR  Area 5B_1
RE DISCCART  1832.0  2348.0
** RCPDESCR  Area 5B_2
RE DISCCART  1740.0  2381.0
** RCPDESCR  Area 5B_3
RE DISCCART  1641.0  2414.0
** RCPDESCR  Area 5B_4
RE DISCCART  1546.0  2451.0
** RCPDESCR  Area 5B_5
RE DISCCART  1418.0  2495.0
** RCPDESCR  Area 5B_6
RE FINISHED

ME STARTING
```

```
ME INPUTFIL  S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT
ME ANEMHGHT  10.0  METERS
ME SURFDATA  14848  1991
ME UAIRDATA  14826  1991
ME STARTEND  91  01  01  1  91  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  ALLAVE  FIRST
OU POSTFILE  1  AREA_1  PLOT  C:\ISCST3\FULL1.PST
OU POSTFILE  1  AREA_2  PLOT  C:\ISCST3\FULL2.PST
OU POSTFILE  1  AREA_3  PLOT  C:\ISCST3\FULL3.PST
OU POSTFILE  1  AREA_4A  PLOT  C:\ISCST3\FULL4a.PST
OU POSTFILE  1  AREA_4B  PLOT  C:\ISCST3\FULL4b.PST
OU FINISHED

**********************************
*** SETUP Finishes Successfully ***
**********************************
```

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR
and Calculates ANNUAL Averages

**This Run Includes: 5 Source(s); 5 Source Group(s); and 54 Receptor(s)

**The Model Assumes A Pollutant Type of: OTHER

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ; Rot. Angle = .0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 1000.0
Output Units = MILLIGRAMS/M**3

**Input Runstream File: C:\ISCST3\ACSFULL.DAT ; **Output Print File: C:\ISCST3\ACSFULL.LST

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
AREA1	0	.10000E+01	1582.0	2073.0	.0	.00	200.00	200.00	25.00	.00	
AREA3	0	.10000E+01	1548.2	1724.7	.0	.00	110.00	60.00	.00	.00	
AREA2	0	.10000E+01	1549.0	1805.0	.0	.00	145.00	165.00	.00	.00	
AREA4A	0	.10000E+01	1244.0	2189.0	.0	.00	300.00	310.00	23.00	.00	
AREA4B	0	.10000E+01	1674.0	2277.0	.0	.00	220.00	80.00	25.00	.00	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
AREA_1	AREA1 ,
AREA_2	AREA2 ,
AREA_3	AREA3 ,
AREA_4A	AREA4A ,
AREA_4B	AREA4B ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(1686.4,	1729.0,	.0,	.0);	(1571.4,	1578.2,	.0,	.0);
(1570.3,	2086.5,	.0,	.0);	(1612.9,	2151.4,	.0,	.0);
(1650.2,	2219.5,	.0,	.0);	(1665.1,	2043.9,	.0,	.0);
(1706.6,	2117.4,	.0,	.0);	(1752.4,	2207.8,	.0,	.0);
(1748.1,	2009.9,	.0,	.0);	(1788.6,	2085.4,	.0,	.0);
(1829.0,	2167.4,	.0,	.0);	(1715.0,	2321.8,	.0,	.0);
(1796.9,	2291.0,	.0,	.0);	(1880.8,	2259.1,	.0,	.0);
(1685.3,	2277.1,	.0,	.0);	(1765.0,	2251.6,	.0,	.0);
(1856.4,	2215.4,	.0,	.0);	(1376.1,	2417.0,	.0,	.0);
(1501.7,	2372.3,	.0,	.0);	(1616.7,	2330.8,	.0,	.0);
(1331.3,	2310.6,	.0,	.0);	(1450.6,	2272.3,	.0,	.0);
(1564.5,	2235.0,	.0,	.0);	(1281.3,	2214.8,	.0,	.0);
(1392.0,	2165.9,	.0,	.0);	(1497.4,	2113.3,	.0,	.0);
(1580.5,	1998.6,	.0,	.0);	(1656.1,	1965.6,	.0,	.0);
(1724.2,	1935.8,	.0,	.0);	(1568.8,	1908.2,	.0,	.0);
(1626.3,	1883.7,	.0,	.0);	(1690.1,	1865.6,	.0,	.0);
(1550.7,	1827.3,	.0,	.0);	(1611.4,	1829.4,	.0,	.0);
(1665.7,	1827.3,	.0,	.0);	(1561.3,	1771.2,	.0,	.0);
(1605.0,	1773.3,	.0,	.0);	(1648.6,	1775.5,	.0,	.0);
(1562.4,	1740.4,	.0,	.0);	(1602.8,	1742.5,	.0,	.0);
(1643.3,	1744.6,	.0,	.0);	(1031.8,	2255.4,	.0,	.0);
(1098.2,	2119.2,	.0,	.0);	(1167.9,	1986.4,	.0,	.0);
(1231.1,	1860.3,	.0,	.0);	(1294.2,	1730.8,	.0,	.0);
(1367.2,	1598.0,	.0,	.0);	(1437.0,	1461.1,	.0,	.0);
(1927.0,	2312.0,	.0,	.0);	(1832.0,	2348.0,	.0,	.0);
(1740.0,	2381.0,	.0,	.0);	(1641.0,	2414.0,	.0,	.0);
(1546.0,	2451.0,	.0,	.0);	(1418.0,	2495.0,	.0,	.0);

**MODELOPTs: CONC   RURAL FLAT   DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 91 1 1 1
AND END DATE: 91 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 14848 UPPER AIR STATION NO.: 14826
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1991 YEAR: 1991

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
91	1	1	1	11.0	5.14	262.6	5	745.0	426.0	.0000	.0	.0000	0	.00
91	1	1	2	8.0	5.14	263.1	5	731.9	426.0	.0000	.0	.0000	0	.00
91	1	1	3	34.0	5.66	263.1	4	718.7	718.7	.0000	.0	.0000	0	.00
91	1	1	4	13.0	4.63	263.7	5	705.6	426.0	.0000	.0	.0000	0	.00
91	1	1	5	13.0	4.63	263.1	5	692.4	426.0	.0000	.0	.0000	0	.00
91	1	1	6	32.0	3.60	263.7	5	679.2	426.0	.0000	.0	.0000	0	.00
91	1	1	7	25.0	3.60	263.1	5	666.1	426.0	.0000	.0	.0000	0	.00
91	1	1	8	3.0	4.12	263.7	5	652.9	426.0	.0000	.0	.0000	0	.00
91	1	1	9	357.0	6.17	264.8	4	70.6	444.2	.0000	.0	.0000	0	.00
91	1	1	10	11.0	5.66	265.9	4	171.3	470.2	.0000	.0	.0000	0	.00
91	1	1	11	24.0	5.66	267.6	4	272.0	496.1	.0000	.0	.0000	0	.00
91	1	1	12	16.0	5.66	269.3	4	372.7	522.1	.0000	.0	.0000	0	.00
91	1	1	13	23.0	7.20	270.9	4	473.3	548.0	.0000	.0	.0000	0	.00
91	1	1	14	19.0	5.66	272.6	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	15	42.0	7.20	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	16	34.0	5.14	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	17	21.0	5.66	272.0	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	18	27.0	4.12	270.9	5	578.0	597.4	.0000	.0	.0000	0	.00
91	1	1	19	24.0	4.63	270.4	5	584.0	632.0	.0000	.0	.0000	0	.00
91	1	1	20	17.0	3.60	269.3	5	589.9	666.6	.0000	.0	.0000	0	.00
91	1	1	21	30.0	4.12	269.8	5	595.9	701.2	.0000	.0	.0000	0	.00
91	1	1	22	52.0	3.60	269.3	5	601.8	735.8	.0000	.0	.0000	0	.00
91	1	1	23	60.0	2.57	268.1	6	607.8	770.4	.0000	.0	.0000	0	.00
91	1	1	24	50.0	3.09	267.6	5	613.7	805.0	.0000	.0	.0000	0	.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	323.08350	1571.40	1578.20	135.33480
1570.30	2086.50	2849.84400	1612.90	2151.40	5726.23500
1650.20	2219.50	9042.33300	1665.10	2043.90	14469.27000
1706.60	2117.40	18950.56000	1752.40	2207.80	15013.42000
1748.10	2009.90	13953.39000	1788.60	2085.40	16743.53000
1829.00	2167.40	14374.16000	1715.00	2321.80	1451.44500
1796.90	2291.00	2028.47400	1880.80	2259.10	1545.80600
1685.30	2277.10	2511.42200	1765.00	2251.60	3487.09700
1856.40	2215.40	2547.93000	1376.10	2417.00	157.48630
1501.70	2372.30	267.78280	1616.70	2330.80	597.04080
1331.30	2310.60	214.61500	1450.60	2272.30	388.62210
1564.50	2235.00	1001.60800	1281.30	2214.80	230.09960
1392.00	2165.90	411.52420	1497.40	2113.30	951.25450
1580.50	1998.60	1304.69200	1656.10	1965.60	1609.02300
1724.20	1935.80	1403.61500	1568.80	1908.20	568.42740
1626.30	1883.70	605.16690	1690.10	1865.60	692.50680
1550.70	1827.30	308.51770	1611.40	1829.40	395.74060
1665.70	1827.30	497.64480	1561.30	1771.20	242.27090
1605.00	1773.30	291.10780	1648.60	1775.50	356.77590
1562.40	1740.40	214.10250	1602.80	1742.50	255.23330
1643.30	1744.60	304.32590	1031.80	2255.40	100.23960
1098.20	2119.20	129.52600	1167.90	1986.40	146.36540
1231.10	1860.30	178.53700	1294.20	1730.80	147.34700
1367.20	1598.00	89.52135	1437.00	1461.10	74.46848
1927.00	2312.00	919.16180	1832.00	2348.00	1185.11800
1740.00	2381.00	896.06500	1641.00	2414.00	393.54600
1546.00	2451.00	209.11790	1418.00	2495.00	130.56210

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	965.70310	1571.40	1578.20	273.42450
1570.30	2086.50	511.68630	1612.90	2151.40	412.68550
1650.20	2219.50	322.25720	1665.10	2043.90	1541.85100
1706.60	2117.40	748.16470	1752.40	2207.80	405.89130
1748.10	2009.90	1395.98800	1788.60	2085.40	694.34920
1829.00	2167.40	403.52150	1715.00	2321.80	224.77970
1796.90	2291.00	268.17130	1880.80	2259.10	251.79410
1685.30	2277.10	262.15180	1765.00	2251.60	323.83780
1856.40	2215.40	309.80960	1376.10	2417.00	51.31290
1501.70	2372.30	78.10678	1616.70	2330.80	161.97210
1331.30	2310.60	67.42708	1450.60	2272.30	93.31734
1564.50	2235.00	184.92210	1281.30	2214.80	80.73304
1392.00	2165.90	130.81010	1497.40	2113.30	244.23510
1580.50	1998.60	2230.54400	1656.10	1965.60	13569.01000
1724.20	1935.80	2479.13200	1568.80	1908.20	15736.40000
1626.30	1883.70	17586.30000	1690.10	1865.60	13404.52000
1550.70	1827.30	10085.14000	1611.40	1829.40	15843.38000
1665.70	1827.30	14798.38000	1561.30	1771.20	1685.88100
1605.00	1773.30	2220.59300	1648.60	1775.50	2251.78000
1562.40	1740.40	1004.84500	1602.80	1742.50	1271.99100
1643.30	1744.60	1347.22300	1031.80	2255.40	48.06802
1098.20	2119.20	80.27739	1167.90	1986.40	124.74850
1231.10	1860.30	173.24050	1294.20	1730.80	214.53000
1367.20	1598.00	155.06070	1437.00	1461.10	96.62126
1927.00	2312.00	193.04270	1832.00	2348.00	209.44410
1740.00	2381.00	183.31380	1641.00	2414.00	129.83270
1546.00	2451.00	81.31705	1418.00	2495.00	43.17896

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	724.76610	1571.40	1578.20	196.96350
1570.30	2086.50	61.74004	1612.90	2151.40	57.16830
1650.20	2219.50	47.32117	1665.10	2043.90	123.76860
1706.60	2117.40	86.89467	1752.40	2207.80	59.45219
1748.10	2009.90	151.15580	1788.60	2085.40	96.11151
1829.00	2167.40	65.93851	1715.00	2321.80	37.52795
1796.90	2291.00	44.83366	1880.80	2259.10	46.47572
1685.30	2277.10	40.76296	1765.00	2251.60	50.72810
1856.40	2215.40	54.40805	1376.10	2417.00	9.32655
1501.70	2372.30	16.88771	1616.70	2330.80	29.15088
1331.30	2310.60	13.17596	1450.60	2272.30	16.48835
1564.50	2235.00	33.31727	1281.30	2214.80	15.52006
1392.00	2165.90	21.92874	1497.40	2113.30	33.72542
1580.50	1998.60	109.48450	1656.10	1965.60	221.72100
1724.20	1935.80	259.86360	1568.80	1908.20	216.28900
1626.30	1883.70	499.50950	1690.10	1865.60	584.86930
1550.70	1827.30	576.08720	1611.40	1829.40	1221.35100
1665.70	1827.30	1215.89000	1561.30	1771.20	11985.36000
1605.00	1773.30	13191.73000	1648.60	1775.50	11600.80000
1562.40	1740.40	12279.49000	1602.80	1742.50	13327.41000
1643.30	1744.60	12291.24000	1031.80	2255.40	9.08234
1098.20	2119.20	14.36917	1167.90	1986.40	26.77253
1231.10	1860.30	45.52235	1294.20	1730.80	72.65996
1367.20	1598.00	101.91940	1437.00	1461.10	43.87103
1927.00	2312.00	38.07388	1832.00	2348.00	37.15246
1740.00	2381.00	32.21401	1641.00	2414.00	23.96527
1546.00	2451.00	17.17988	1418.00	2495.00	9.69552

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4A ***
INCLUDING SOURCE(S): AREA4A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	338.80690	1571.40	1578.20	289.60870
1570.30	2086.50	2460.62500	1612.90	2151.40	2310.82800
1650.20	2219.50	2105.31100	1665.10	2043.90	901.45010
1706.60	2117.40	860.51840	1752.40	2207.80	746.55720
1748.10	2009.90	517.67860	1788.60	2085.40	506.98900
1829.00	2167.40	452.13750	1715.00	2321.80	1365.10300
1796.90	2291.00	637.30140	1880.80	2259.10	372.59350
1685.30	2277.10	1697.57600	1765.00	2251.60	736.16320
1856.40	2215.40	401.80160	1376.10	2417.00	18464.89000
1501.70	2372.30	20096.93000	1616.70	2330.80	16562.93000
1331.30	2310.60	19333.04000	1450.60	2272.30	21449.24000
1564.50	2235.00	18789.39000	1281.30	2214.80	17013.41000
1392.00	2165.90	18863.69000	1497.40	2113.30	16955.31000
1580.50	1998.60	1245.47100	1656.10	1965.60	730.61910
1724.20	1935.80	492.96870	1568.80	1908.20	829.94750
1626.30	1883.70	618.60170	1690.10	1865.60	463.55460
1550.70	1827.30	623.26460	1611.40	1829.40	544.93060
1665.70	1827.30	455.12460	1561.30	1771.20	503.72950
1605.00	1773.30	465.99740	1648.60	1775.50	419.86970
1562.40	1740.40	455.76900	1602.80	1742.50	428.12660
1643.30	1744.60	393.24650	1031.80	2255.40	647.55180
1098.20	2119.20	831.04250	1167.90	1986.40	647.54050
1231.10	1860.30	420.11680	1294.20	1730.80	326.96170
1367.20	1598.00	273.03810	1437.00	1461.10	219.66010
1927.00	2312.00	312.71020	1832.00	2348.00	561.35050
1740.00	2381.00	1206.16500	1641.00	2414.00	3327.28300
1546.00	2451.00	4167.96500	1418.00	2495.00	3577.15400

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	66.12381	1571.40	1578.20	34.92783
1570.30	2086.50	214.84030	1612.90	2151.40	370.56200
1650.20	2219.50	830.99500	1665.10	2043.90	223.89100
1706.60	2117.40	506.89290	1752.40	2207.80	2303.99900
1748.10	2009.90	250.77940	1788.60	2085.40	504.58290
1829.00	2167.40	1704.54700	1715.00	2321.80	13974.64000
1796.90	2291.00	14787.75000	1880.80	2259.10	13123.78000
1685.30	2277.10	10438.43000	1765.00	2251.60	14367.84000
1856.40	2215.40	13939.42000	1376.10	2417.00	103.03880
1501.70	2372.30	204.90290	1616.70	2330.80	637.49770
1331.30	2310.60	99.57747	1450.60	2272.30	174.49790
1564.50	2235.00	381.89380	1281.30	2214.80	78.57419
1392.00	2165.90	115.82060	1497.40	2113.30	187.10300
1580.50	1998.60	134.68260	1656.10	1965.60	134.95150
1724.20	1935.80	156.51730	1568.80	1908.20	82.21444
1626.30	1883.70	86.70033	1690.10	1865.60	103.55200
1550.70	1827.30	59.50831	1611.40	1829.40	68.68896
1665.70	1827.30	82.74532	1561.30	1771.20	50.97713
1605.00	1773.30	57.70907	1648.60	1775.50	67.07494
1562.40	1740.40	47.02913	1602.80	1742.50	53.38847
1643.30	1744.60	60.71002	1031.80	2255.40	38.69614
1098.20	2119.20	41.79910	1167.90	1986.40	50.09047
1231.10	1860.30	53.58430	1294.20	1730.80	36.39933
1367.20	1598.00	25.33442	1437.00	1461.10	22.30529
1927.00	2312.00	1256.43800	1832.00	2348.00	1999.58300
1740.00	2381.00	1523.46400	1641.00	2414.00	314.91160
1546.00	2451.00	152.04730	1418.00	2495.00	85.51704

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	24318.40000	(91081105)	1571.40	1578.20	17228.45000	(91060805)
1570.30	2086.50	79541.77000	(91062006)	1612.90	2151.40	102640.80000	(91062006)
1650.20	2219.50	133515.00000	(91070922)	1665.10	2043.90	130728.50000	(91051003)
1706.60	2117.40	114362.90000	(91081106)	1752.40	2207.80	129513.00000	(91051422)
1748.10	2009.90	136278.60000	(91060701)	1788.60	2085.40	125963.90000	(91060801)
1829.00	2167.40	136700.50000	(91072505)	1715.00	2321.80	45862.32000	(91070924)
1796.90	2291.00	43374.62000	(91020102)	1880.80	2259.10	42766.54000	(91081421)
1685.30	2277.10	69022.47000	(91070924)	1765.00	2251.60	60707.18000	(91030805)
1856.40	2215.40	58655.20000	(91081421)	1376.10	2417.00	14109.21000	(91082521)
1501.70	2372.30	28808.50000	(91070922)	1616.70	2330.80	42926.94000	(91070922)
1331.30	2310.60	14117.81000	(91121906)	1450.60	2272.30	18777.29000	(91042805)
1564.50	2235.00	40115.80000	(91070922)	1281.30	2214.80	21101.43000	(91062006)
1392.00	2165.90	27635.29000	(91062006)	1497.40	2113.30	42243.98000	(91062006)
1580.50	1998.60	49894.63000	(91041722)	1656.10	1965.60	50556.70000	(91041722)
1724.20	1935.80	51224.09000	(91081321)	1568.80	1908.20	33533.07000	(91041722)
1626.30	1883.70	33777.74000	(91041722)	1690.10	1865.60	34628.96000	(91081105)
1550.70	1827.30	26526.90000	(91041722)	1611.40	1829.40	28487.53000	(91041722)
1665.70	1827.30	29774.88000	(91061905)	1561.30	1771.20	23849.14000	(91041722)
1605.00	1773.30	24941.13000	(91041722)	1648.60	1775.50	25474.12000	(91060805)
1562.40	1740.40	22537.85000	(91041722)	1602.80	1742.50	23364.63000	(91041722)
1643.30	1744.60	23752.42000	(91060805)	1031.80	2255.40	14793.27000	(91062006)
1098.20	2119.20	11522.83000	(91092402)	1167.90	1986.40	13985.16000	(91051006)
1231.10	1860.30	28146.04000	(91020608)	1294.20	1730.80	17615.62000	(91060905)
1367.20	1598.00	15645.55000	(91060902)	1437.00	1461.10	14443.87000	(91041722)
1927.00	2312.00	32363.99000	(91081421)	1832.00	2348.00	32729.35000	(91020102)
1740.00	2381.00	33732.52000	(91030804)	1641.00	2414.00	31778.35000	(91070924)
1546.00	2451.00	22675.20000	(91070922)	1418.00	2495.00	21384.76000	(91070922)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	41328.66000	(91060701)	1571.40	1578.20	22603.39000	(91061905)
1570.30	2086.50	32969.72000	(91070924)	1612.90	2151.40	25792.82000	(91070924)
1650.20	2219.50	17387.75000	(91102508)	1665.10	2043.90	41645.11000	(91030804)
1706.60	2117.40	29219.78000	(91030804)	1752.40	2207.80	21580.63000	(91030804)
1748.10	2009.90	46092.36000	(91051422)	1788.60	2085.40	32295.60000	(91020102)
1829.00	2167.40	24158.55000	(91020102)	1715.00	2321.80	20625.11000	(91102508)
1796.90	2291.00	12700.62000	(91030804)	1880.80	2259.10	16990.06000	(91020102)
1685.30	2277.10	19782.44000	(91102508)	1765.00	2251.60	19205.36000	(91030804)
1856.40	2215.40	20108.51000	(91020102)	1376.10	2417.00	9607.65200	(91042804)
1501.70	2372.30	10512.46000	(91121908)	1616.70	2330.80	16249.05000	(91070924)
1331.30	2310.60	16531.59000	(91070922)	1450.60	2272.30	12774.39000	(91082921)
1564.50	2235.00	20571.05000	(91070924)	1281.30	2214.80	11163.88000	(91082521)
1392.00	2165.90	21642.10000	(91070922)	1497.40	2113.30	25129.94000	(91070922)
1580.50	1998.60	60764.60000	(91070924)	1656.10	1965.60	123009.90000	(91020102)
1724.20	1935.80	56650.25000	(91051403)	1568.80	1908.20	112668.30000	(91071122)
1626.30	1883.70	105794.80000	(91051422)	1690.10	1865.60	121912.60000	(91081101)
1550.70	1827.30	126547.10000	(91062002)	1611.40	1829.40	122121.70000	(91041722)
1665.70	1827.30	118619.70000	(91060801)	1561.30	1771.20	59972.96000	(91041722)
1605.00	1773.30	59194.60000	(91041722)	1648.60	1775.50	60839.91000	(91060701)
1562.40	1740.40	46073.06000	(91041722)	1602.80	1742.50	44979.56000	(91060805)
1643.30	1744.60	45524.94000	(91081106)	1031.80	2255.40	7939.90000	(91031101)
1098.20	2119.20	8791.49700	(91010502)	1167.90	1986.40	14601.44000	(91062006)
1231.10	1860.30	10942.52000	(91121823)	1294.20	1730.80	19269.51000	(91071122)
1367.20	1598.00	22669.79000	(91062002)	1437.00	1461.10	17869.29000	(91041722)
1927.00	2312.00	15546.63000	(91020102)	1832.00	2348.00	11006.67000	(91011505)
1740.00	2381.00	20243.82000	(91102508)	1641.00	2414.00	9813.62700	(91090704)
1546.00	2451.00	13926.06000	(91070924)	1418.00	2495.00	7823.33900	(91121908)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	32723.33000	(91042423)	1571.40	1578.20	12780.54000	(91060805)
1570.30	2086.50	7667.48000	(91070924)	1612.90	2151.40	4435.10700	(91090704)
1650.20	2219.50	3902.13900	(91082806)	1665.10	2043.90	8560.00100	(91030804)
1706.60	2117.40	7197.96300	(91030804)	1752.40	2207.80	5905.28500	(91030804)
1748.10	2009.90	6468.87600	(91110905)	1788.60	2085.40	5255.62000	(91030421)
1829.00	2167.40	4370.26200	(91112219)	1715.00	2321.80	5951.02000	(91102508)
1796.90	2291.00	4023.83400	(91030804)	1880.80	2259.10	3663.36400	(91030421)
1685.30	2277.10	5107.08600	(91102508)	1765.00	2251.60	5433.54900	(91030804)
1856.40	2215.40	3973.64400	(91030421)	1376.10	2417.00	2114.69000	(91082921)
1501.70	2372.30	3752.03300	(91070924)	1616.70	2330.80	3273.48400	(91090704)
1331.30	2310.60	3368.71300	(91042804)	1450.60	2272.30	3553.77400	(91121908)
1564.50	2235.00	5686.53600	(91070924)	1281.30	2214.80	5732.50000	(91070922)
1392.00	2165.90	4361.89700	(91042804)	1497.40	2113.30	4835.63200	(91121908)
1580.50	1998.60	9776.12500	(91070924)	1656.10	1965.60	11052.49000	(91030804)
1724.20	1935.80	12677.49000	(91020102)	1568.80	1908.20	14256.50000	(91070924)
1626.30	1883.70	16599.64000	(91030804)	1690.10	1865.60	19692.63000	(91030805)
1550.70	1827.30	28270.78000	(91070922)	1611.40	1829.40	26683.70000	(91030804)
1665.70	1827.30	28931.64000	(91051422)	1561.30	1771.20	103159.10000	(91062006)
1605.00	1773.30	92334.58000	(91081421)	1648.60	1775.50	106586.70000	(91072505)
1562.40	1740.40	101471.00000	(91071122)	1602.80	1742.50	90778.16000	(91051003)
1643.30	1744.60	92889.20000	(91081101)	1031.80	2255.40	3167.13300	(91082521)
1098.20	2119.20	3983.08300	(91042805)	1167.90	1986.40	5557.49600	(91070602)
1231.10	1860.30	7942.96100	(91071601)	1294.20	1730.80	9683.37100	(91051323)
1367.20	1598.00	14501.87000	(91051003)	1437.00	1461.10	8675.63300	(91060902)
1927.00	2312.00	3246.14000	(91110905)	1832.00	2348.00	3135.65300	(91101606)
1740.00	2381.00	5925.66200	(91102508)	1641.00	2414.00	2898.97200	(91032422)
1546.00	2451.00	4029.25600	(91070924)	1418.00	2495.00	2552.44400	(91121908)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4A ***
INCLUDING SOURCE(S): AREA4A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	29948.10000	(91060701)	1571.40	1578.20	26485.51000	(91060624)
1570.30	2086.50	74486.61000	(91060801)	1612.90	2151.40	67582.36000	(91060801)
1650.20	2219.50	64296.19000	(91081102)	1665.10	2043.90	45432.61000	(91060801)
1706.60	2117.40	44086.34000	(91060801)	1752.40	2207.80	40775.12000	(91081101)
1748.10	2009.90	35745.64000	(91060801)	1788.60	2085.40	35033.26000	(91081102)
1829.00	2167.40	30084.57000	(91081101)	1715.00	2321.80	47530.92000	(91072505)
1796.90	2291.00	28643.89000	(91072323)	1880.80	2259.10	22830.38000	(91110723)
1685.30	2277.10	50375.95000	(91081101)	1765.00	2251.60	29632.66000	(91110723)
1856.40	2215.40	22943.34000	(91081022)	1376.10	2417.00	146491.80000	(91070922)
1501.70	2372.30	145902.00000	(91081421)	1616.70	2330.80	153267.30000	(91072505)
1331.30	2310.60	142347.20000	(91070922)	1450.60	2272.30	130326.40000	(91072505)
1564.50	2235.00	143342.50000	(91060801)	1281.30	2214.80	151491.00000	(91071122)
1392.00	2165.90	145669.80000	(91062004)	1497.40	2113.30	153363.70000	(91060701)
1580.50	1998.60	55721.58000	(91060701)	1656.10	1965.60	41812.80000	(91060801)
1724.20	1935.80	35191.47000	(91060801)	1568.80	1908.20	48802.71000	(91060701)
1626.30	1883.70	39870.97000	(91060701)	1690.10	1865.60	25725.31000	(91060701)
1550.70	1827.30	39744.16000	(91081106)	1611.40	1829.40	41143.29000	(91060701)
1665.70	1827.30	31834.06000	(91060701)	1561.30	1771.20	35693.74000	(91081106)
1605.00	1773.30	34323.61000	(91060701)	1648.60	1775.50	35555.27000	(91060701)
1562.40	1740.40	33670.77000	(91060624)	1602.80	1742.50	32763.37000	(91081106)
1643.30	1744.60	34854.13000	(91060701)	1031.80	2255.40	36621.28000	(91062006)
1098.20	2119.20	49087.73000	(91071122)	1167.90	1986.40	38381.86000	(91060905)
1231.10	1860.30	32188.58000	(91041722)	1294.20	1730.80	27440.69000	(91041722)
1367.20	1598.00	23958.69000	(91061905)	1437.00	1461.10	21584.85000	(91081105)
1927.00	2312.00	22014.47000	(91072323)	1832.00	2348.00	28133.25000	(91090424)
1740.00	2381.00	56154.26000	(91072505)	1641.00	2414.00	71063.52000	(91081421)
1546.00	2451.00	71505.88000	(91051422)	1418.00	2495.00	77512.93000	(91070924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	6969.91300	(91060805)	1571.40	1578.20	5603.52300	(91060805)
1570.30	2086.50	12967.19000	(91051003)	1612.90	2151.40	17524.43000	(91071122)
1650.20	2219.50	28452.38000	(91071122)	1665.10	2043.90	12964.42000	(91041722)
1706.60	2117.40	17980.24000	(91041722)	1752.40	2207.80	41201.46000	(91081106)
1748.10	2009.90	13139.30000	(91041722)	1788.60	2085.40	18791.37000	(91081106)
1829.00	2167.40	39714.45000	(91060701)	1715.00	2321.80	109636.20000	(91070922)
1796.90	2291.00	112067.20000	(91070922)	1880.80	2259.10	101074.80000	(91072505)
1685.30	2277.10	131225.70000	(91062006)	1765.00	2251.60	113172.00000	(91062006)
1856.40	2215.40	127486.60000	(91081102)	1376.10	2417.00	14688.70000	(91020104)
1501.70	2372.30	20439.22000	(91032504)	1616.70	2330.80	38687.70000	(91062006)
1331.30	2310.60	12919.23000	(91101022)	1450.60	2272.30	15464.09000	(91092402)
1564.50	2235.00	17215.86000	(91121823)	1281.30	2214.80	9207.31200	(91121823)
1392.00	2165.90	9123.50400	(91051006)	1497.40	2113.30	13038.78000	(91020608)
1580.50	1998.60	10478.79000	(91041722)	1656.10	1965.60	10572.71000	(91041722)
1724.20	1935.80	10546.30000	(91041722)	1568.80	1908.20	8756.17100	(91041722)
1626.30	1883.70	8791.18000	(91041722)	1690.10	1865.60	8819.14500	(91041722)
1550.70	1827.30	7618.18900	(91041722)	1611.40	1829.40	7966.11700	(91041722)
1665.70	1827.30	8165.71000	(91041722)	1561.30	1771.20	7104.45400	(91041722)
1605.00	1773.30	7319.31500	(91041722)	1648.60	1775.50	7351.75800	(91060805)
1562.40	1740.40	6835.62600	(91041722)	1602.80	1742.50	7007.88100	(91041722)
1643.30	1744.60	7023.00600	(91060805)	1031.80	2255.40	6725.41900	(91042503)
1098.20	2119.20	6069.24400	(91031023)	1167.90	1986.40	7906.20100	(91020608)
1231.10	1860.30	9171.38700	(91020608)	1294.20	1730.80	5786.24100	(91062002)
1367.20	1598.00	5244.92600	(91060902)	1437.00	1461.10	4989.36300	(91041722)
1927.00	2312.00	29599.46000	(91072505)	1832.00	2348.00	31407.92000	(91051403)
1740.00	2381.00	34771.74000	(91070922)	1641.00	2414.00	29541.45000	(91070922)
1546.00	2451.00	20569.63000	(91042805)	1418.00	2495.00	15052.88000	(91121906)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	7814.24300c	(91081108)	1571.40	1578.20	3901.94700	(91061724)
1570.30	2086.50	43859.33000	(91051008)	1612.90	2151.40	51233.13000	(91051008)
1650.20	2219.50	62922.36000	(91122524)	1665.10	2043.90	94067.53000c	(91081108)
1706.60	2117.40	88607.91000c	(91081108)	1752.40	2207.80	92397.65000c	(91030808)
1748.10	2009.90	105761.50000c	(91081108)	1788.60	2085.40	95332.00000c	(91081108)
1829.00	2167.40	83896.64000c	(91030808)	1715.00	2321.80	20273.47000c	(91030508)
1796.90	2291.00	29153.86000c	(91030808)	1880.80	2259.10	16508.21000	(91061208)
1685.30	2277.10	29985.52000c	(91030508)	1765.00	2251.60	42036.35000c	(91030808)
1856.40	2215.40	26926.97000c	(91030808)	1376.10	2417.00	4424.68900	(91090724)
1501.70	2372.30	6693.55400	(91122524)	1616.70	2330.80	15758.43000	(91122524)
1331.30	2310.60	5453.72400	(91050924)	1450.60	2272.30	8697.56600	(91050924)
1564.50	2235.00	15190.50000	(91090724)	1281.30	2214.80	6631.22400c	(91020108)
1392.00	2165.90	10356.89000c	(91020108)	1497.40	2113.30	18658.17000c	(91020108)
1580.50	1998.60	21302.57000	(91051008)	1656.10	1965.60	20580.05000	(91112108)
1724.20	1935.80	23860.49000c	(91081108)	1568.80	1908.20	12632.15000c	(91060608)
1626.30	1883.70	10825.21000c	(91060608)	1690.10	1865.60	13922.16000c	(91081108)
1550.70	1827.30	9352.21000c	(91060608)	1611.40	1829.40	8032.73100c	(91072608)
1665.70	1827.30	10156.79000c	(91081108)	1561.30	1771.20	6009.60800	(91041724)
1605.00	1773.30	6785.61200c	(91072608)	1648.60	1775.50	7380.08300c	(91081108)
1562.40	1740.40	5429.81100	(91041724)	1602.80	1742.50	6195.47900c	(91072608)
1643.30	1744.60	6606.76600c	(91081108)	1031.80	2255.40	3468.29900c	(91020108)
1098.20	2119.20	5179.19400c	(91052208)	1167.90	1986.40	3611.20600	(91051008)
1231.10	1860.30	6700.93000	(91051008)	1294.20	1730.80	5716.87500c	(91062008)
1367.20	1598.00	5209.49600c	(91060608)	1437.00	1461.10	3075.17900c	(91092908)
1927.00	2312.00	11522.56000	(91061208)	1832.00	2348.00	19909.69000c	(91030808)
1740.00	2381.00	14295.43000c	(91030508)	1641.00	2414.00	8664.68900	(91122524)
1546.00	2451.00	6062.27900	(91122524)	1418.00	2495.00	4433.95600	(91122524)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	15596.54000	(91111108)	1571.40	1578.20	6293.06200c	(91081108)
1570.30	2086.50	10207.20000	(91122524)	1612.90	2151.40	9317.62500c	(91112124)
1650.20	2219.50	7439.12500c	(91112124)	1665.10	2043.90	21018.42000c	(91030808)
1706.60	2117.40	12594.27000c	(91030808)	1752.40	2207.80	8822.79300	(91101608)
1748.10	2009.90	17065.18000c	(91030808)	1788.60	2085.40	9627.82600c	(91030808)
1829.00	2167.40	6057.98100	(91071708)	1715.00	2321.80	5461.07400c	(91030808)
1796.90	2291.00	7246.00000	(91101608)	1880.80	2259.10	4327.33000	(91071708)
1685.30	2277.10	5648.92700c	(91112124)	1765.00	2251.60	7818.03200	(91101608)
1856.40	2215.40	5055.89700	(91071708)	1376.10	2417.00	1655.21900c	(91111008)
1501.70	2372.30	3089.10800c	(91110924)	1616.70	2330.80	4681.21200	(91102024)
1331.30	2310.60	2595.97300c	(91111008)	1450.60	2272.30	2516.59900c	(91111008)
1564.50	2235.00	5013.97500	(91102024)	1281.30	2214.80	2568.48000	(91090724)
1392.00	2165.90	4632.38100	(91122524)	1497.40	2113.30	6925.84200	(91122524)
1580.50	1998.60	26396.58000	(91122524)	1656.10	1965.60	86236.21000c	(91030808)
1724.20	1935.80	26162.05000c	(91110824)	1568.80	1908.20	70072.63000c	(91062008)
1626.30	1883.70	83121.16000c	(91081108)	1690.10	1865.60	84457.59000c	(91081108)
1550.70	1827.30	79648.32000c	(91062008)	1611.40	1829.40	88781.09000c	(91081108)
1665.70	1827.30	95109.32000c	(91081108)	1561.30	1771.20	23652.98000	(91112108)
1605.00	1773.30	31010.35000c	(91081108)	1648.60	1775.50	38123.93000c	(91081108)
1562.40	1740.40	15884.87000c	(91072608)	1602.80	1742.50	21305.60000c	(91081108)
1643.30	1744.60	22690.82000c	(91081108)	1031.80	2255.40	2142.22700c	(91110924)
1098.20	2119.20	3077.40900	(91050924)	1167.90	1986.40	4014.82800c	(91020108)
1231.10	1860.30	5520.67400	(91090208)	1294.20	1730.80	7066.66100	(91051008)
1367.20	1598.00	6530.00800c	(91060608)	1437.00	1461.10	3699.29200c	(91092908)
1927.00	2312.00	3548.42700	(91071708)	1832.00	2348.00	6268.02000	(91101608)
1740.00	2381.00	4912.06600c	(91030808)	1641.00	2414.00	3680.20700c	(91112124)
1546.00	2451.00	3079.78300	(91102024)	1418.00	2495.00	1577.90200	(91052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	14761.00000	(91042424)	1571.40	1578.20	3771.35000c	(91081108)
1570.30	2086.50	1889.12400	(91102024)	1612.90	2151.40	1716.11000	(91102024)
1650.20	2219.50	1563.25500c	(91112124)	1665.10	2043.90	2824.40100c	(91030808)
1706.60	2117.40	2255.37900c	(91030808)	1752.40	2207.80	1679.98300	(91101608)
1748.10	2009.90	3170.99900	(91101608)	1788.60	2085.40	1949.82300	(91101608)
1829.00	2167.40	1349.79400	(91101608)	1715.00	2321.80	1100.45000c	(91112124)
1796.90	2291.00	1601.41700	(91101608)	1880.80	2259.10	806.64570c	(91011508)
1685.30	2277.10	1378.11100c	(91112124)	1765.00	2251.60	1450.14800c	(91030808)
1856.40	2215.40	1011.33200	(91101608)	1376.10	2417.00	444.89150	(91052224)
1501.70	2372.30	925.98870c	(91110924)	1616.70	2330.80	812.49230	(91102024)
1331.30	2310.60	523.11620	(91042808)	1450.60	2272.30	617.92440	(91052224)
1564.50	2235.00	1385.25600	(91102024)	1281.30	2214.80	716.56260	(91070924)
1392.00	2165.90	837.18220c	(91111008)	1497.40	2113.30	1106.91200c	(91110924)
1580.50	1998.60	2612.09600	(91102024)	1656.10	1965.60	4021.49200c	(91030808)
1724.20	1935.80	3960.55500	(91101608)	1568.80	1908.20	3837.00200	(91102024)
1626.30	1883.70	7501.22300c	(91030508)	1690.10	1865.60	8851.96500c	(91030808)
1550.70	1827.30	13000.72000	(91122524)	1611.40	1829.40	13776.67000c	(91030808)
1665.70	1827.30	19226.51000c	(91030808)	1561.30	1771.20	53864.96000c	(91020108)
1605.00	1773.30	62276.60000c	(91030808)	1648.60	1775.50	63593.78000c	(91030808)
1562.40	1740.40	61460.05000c	(91062008)	1602.80	1742.50	68582.91000c	(91081108)
1643.30	1744.60	68174.93000c	(91081108)	1031.80	2255.40	452.44880c	(91082524)
1098.20	2119.20	647.76310	(91090724)	1167.90	1986.40	1734.64300c	(91110924)
1231.10	1860.30	2832.45500c	(91020108)	1294.20	1730.80	3571.02600	(91090208)
1367.20	1598.00	4445.40700	(91051008)	1437.00	1461.10	1635.13800c	(91060608)
1927.00	2312.00	605.89400	(91071708)	1832.00	2348.00	1573.22100	(91101608)
1740.00	2381.00	965.22020c	(91030808)	1641.00	2414.00	698.95350c	(91112124)
1546.00	2451.00	951.18880	(91102024)	1418.00	2495.00	479.06920	(91122524)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4A ***
INCLUDING SOURCE(S): AREA4A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	7545.61700	(91111108)	1571.40	1578.20	6220.66500c	(91081108)
1570.30	2086.50	42728.70000c	(91081108)	1612.90	2151.40	31356.20000c	(91081108)
1650.20	2219.50	23809.82000c	(91081108)	1665.10	2043.90	17672.07000c	(91081108)
1706.60	2117.40	14685.79000c	(91081108)	1752.40	2207.80	13029.36000	(91042424)
1748.10	2009.90	11875.45000c	(91081108)	1788.60	2085.40	11661.20000c	(91081108)
1829.00	2167.40	9861.18600	(91042424)	1715.00	2321.80	21389.04000	(91070208)
1796.90	2291.00	13008.36000	(91070208)	1880.80	2259.10	9329.45900	(91042424)
1685.30	2277.10	21259.38000	(91070208)	1765.00	2251.60	12580.57000	(91070208)
1856.40	2215.40	9687.22500	(91042424)	1376.10	2417.00	87333.12000c	(91030808)
1501.70	2372.30	102199.60000c	(91030808)	1616.70	2330.80	90035.20000c	(91030808)
1331.30	2310.60	87669.74000c	(91062008)	1450.60	2272.30	100324.60000c	(91081108)
1564.50	2235.00	106525.30000c	(91081108)	1281.30	2214.80	94064.70000c	(91062008)
1392.00	2165.90	108126.80000c	(91081108)	1497.40	2113.30	118567.70000c	(91081108)
1580.50	1998.60	21015.25000c	(91081108)	1656.10	1965.60	15011.62000c	(91081108)
1724.20	1935.80	11754.14000c	(91081108)	1568.80	1908.20	15180.68000	(91111108)
1626.30	1883.70	11838.76000	(91111108)	1690.10	1865.60	11723.51000c	(91080408)
1550.70	1827.30	11641.24000	(91111108)	1611.40	1829.40	11184.04000	(91111108)
1665.70	1827.30	9695.89200c	(91080408)	1561.30	1771.20	9804.07900	(91111108)
1605.00	1773.30	9749.35900	(91111108)	1648.60	1775.50	9092.78500	(91111108)
1562.40	1740.40	8882.80500	(91111108)	1602.80	1742.50	8997.29800	(91111108)
1643.30	1744.60	8616.06100	(91111108)	1031.80	2255.40	14015.71000c	(91020108)
1098.20	2119.20	22173.21000	(91051008)	1167.90	1986.40	14765.25000c	(91060608)
1231.10	1860.30	11109.85000c	(91060608)	1294.20	1730.80	7838.41200c	(91072608)
1367.20	1598.00	6733.54400c	(91081108)	1437.00	1461.10	5883.07400c	(91061708)
1927.00	2312.00	7346.56800	(91070208)	1832.00	2348.00	10176.65000	(91070208)
1740.00	2381.00	20051.78000c	(91110824)	1641.00	2414.00	40137.29000c	(91030808)
1546.00	2451.00	50298.13000c	(91030808)	1418.00	2495.00	39089.55000c	(91030808)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	1825.44000c	(91081108)	1571.40	1578.20	1069.71000c	(91060808)
1570.30	2086.50	4639.42100	(91051008)	1612.90	2151.40	7620.71500	(91051008)
1650.20	2219.50	15535.81000	(91051008)	1665.10	2043.90	4884.32300c	(91060608)
1706.60	2117.40	7479.82400	(91112108)	1752.40	2207.80	21229.64000	(91051008)
1748.10	2009.90	4568.86400c	(91081108)	1788.60	2085.40	8889.47200c	(91081108)
1829.00	2167.40	20185.87000c	(91081108)	1715.00	2321.80	61011.09000c	(91030808)
1796.90	2291.00	65341.67000c	(91030808)	1880.80	2259.10	67509.52000c	(91030808)
1685.30	2277.10	72560.98000c	(91062008)	1765.00	2251.60	80231.14000c	(91081108)
1856.40	2215.40	87240.16000c	(91081108)	1376.10	2417.00	4773.85500	(91050924)
1501.70	2372.30	7405.64100c	(91020108)	1616.70	2330.80	14596.75000c	(91020108)
1331.30	2310.60	2831.54000c	(91052208)	1450.60	2272.30	6668.59200c	(91052208)
1564.50	2235.00	8111.78000	(91051008)	1281.30	2214.80	3193.16500	(91090208)
1392.00	2165.90	2809.75500	(91051008)	1497.40	2113.30	5274.93400	(91051008)
1580.50	1998.60	3984.34600c	(91060608)	1656.10	1965.60	3465.96000c	(91060608)
1724.20	1935.80	3239.98600c	(91072608)	1568.80	1908.20	3125.63900c	(91060608)
1626.30	1883.70	2279.01200	(91041724)	1690.10	1865.60	2573.03600c	(91072608)
1550.70	1827.30	2244.10000c	(91060608)	1611.40	1829.40	1873.80500	(91041724)
1665.70	1827.30	2110.28300c	(91072608)	1561.30	1771.20	1532.53400c	(91092908)
1605.00	1773.30	1581.45400c	(91092908)	1648.60	1775.50	1783.38700	(91061724)
1562.40	1740.40	1476.52700c	(91092908)	1602.80	1742.50	1511.71300c	(91092908)
1643.30	1744.60	1679.86400	(91061724)	1031.80	2255.40	2559.29600c	(91052208)
1098.20	2119.20	1341.16700	(91051008)	1167.90	1986.40	1927.65200c	(91071108)
1231.10	1860.30	1913.84100	(91051008)	1294.20	1730.80	1604.55800c	(91060608)
1367.20	1598.00	1471.65600c	(91060608)	1437.00	1461.10	1016.75400c	(91092908)
1927.00	2312.00	12725.29000c	(91110824)	1832.00	2348.00	21871.55000c	(91030808)
1740.00	2381.00	15978.80000c	(91030508)	1641.00	2414.00	8161.57400	(91122524)
1546.00	2451.00	4739.31400	(91090724)	1418.00	2495.00	4080.43200c	(91110924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1	1ST HIGHEST VALUE IS	18950.56000 AT (	1706.60, 2117.40, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS	16743.53000 AT (	1788.60, 2085.40, .00, .00)	DC	NA
AREA_2	1ST HIGHEST VALUE IS	17586.30000 AT (	1626.30, 1883.70, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS	15843.38000 AT (	1611.40, 1829.40, .00, .00)	DC	NA
AREA_3	1ST HIGHEST VALUE IS	13327.41000 AT (	1602.80, 1742.50, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS	13191.73000 AT (	1605.00, 1773.30, .00, .00)	DC	NA
AREA_4A	1ST HIGHEST VALUE IS	21449.24000 AT (	1450.60, 2272.30, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS	20096.93000 AT (	1501.70, 2372.30, .00, .00)	DC	NA
AREA_4B	1ST HIGHEST VALUE IS	14787.75000 AT (	1796.90, 2291.00, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS	14367.84000 AT (	1765.00, 2251.60, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1	HIGH 1ST HIGH VALUE IS	136700.50000	ON 91072505: AT (	1829.00, 2167.40, .00, .00)	DC	NA
AREA_2	HIGH 1ST HIGH VALUE IS	126547.10000	ON 91062002: AT (	1550.70, 1827.30, .00, .00)	DC	NA
AREA_3	HIGH 1ST HIGH VALUE IS	106586.70000	ON 91072505: AT (	1648.60, 1775.50, .00, .00)	DC	NA
AREA_4A	HIGH 1ST HIGH VALUE IS	153363.70000	ON 91060701: AT (	1497.40, 2113.30, .00, .00)	DC	NA
AREA_4B	HIGH 1ST HIGH VALUE IS	131225.70000	ON 91062006: AT (	1685.30, 2277.10, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1 HIGH 1ST HIGH VALUE IS	105761.50000c	ON 91081108: AT (	1748.10, 2009.90, .00, .00)	DC	NA
AREA_2 HIGH 1ST HIGH VALUE IS	95109.32000c	ON 91081108: AT (	1665.70, 1827.30, .00, .00)	DC	NA
AREA_3 HIGH 1ST HIGH VALUE IS	68582.91000c	ON 91081108: AT (	1602.80, 1742.50, .00, .00)	DC	NA
AREA_4A HIGH 1ST HIGH VALUE IS	118567.70000c	ON 91081108: AT (	1497.40, 2113.30, .00, .00)	DC	NA
AREA_4B HIGH 1ST HIGH VALUE IS	87240.16000c	ON 91081108: AT (	1856.40, 2215.40, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** Message Summary : ISCST3 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 385 Informational Message(s)

A Total of 385 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

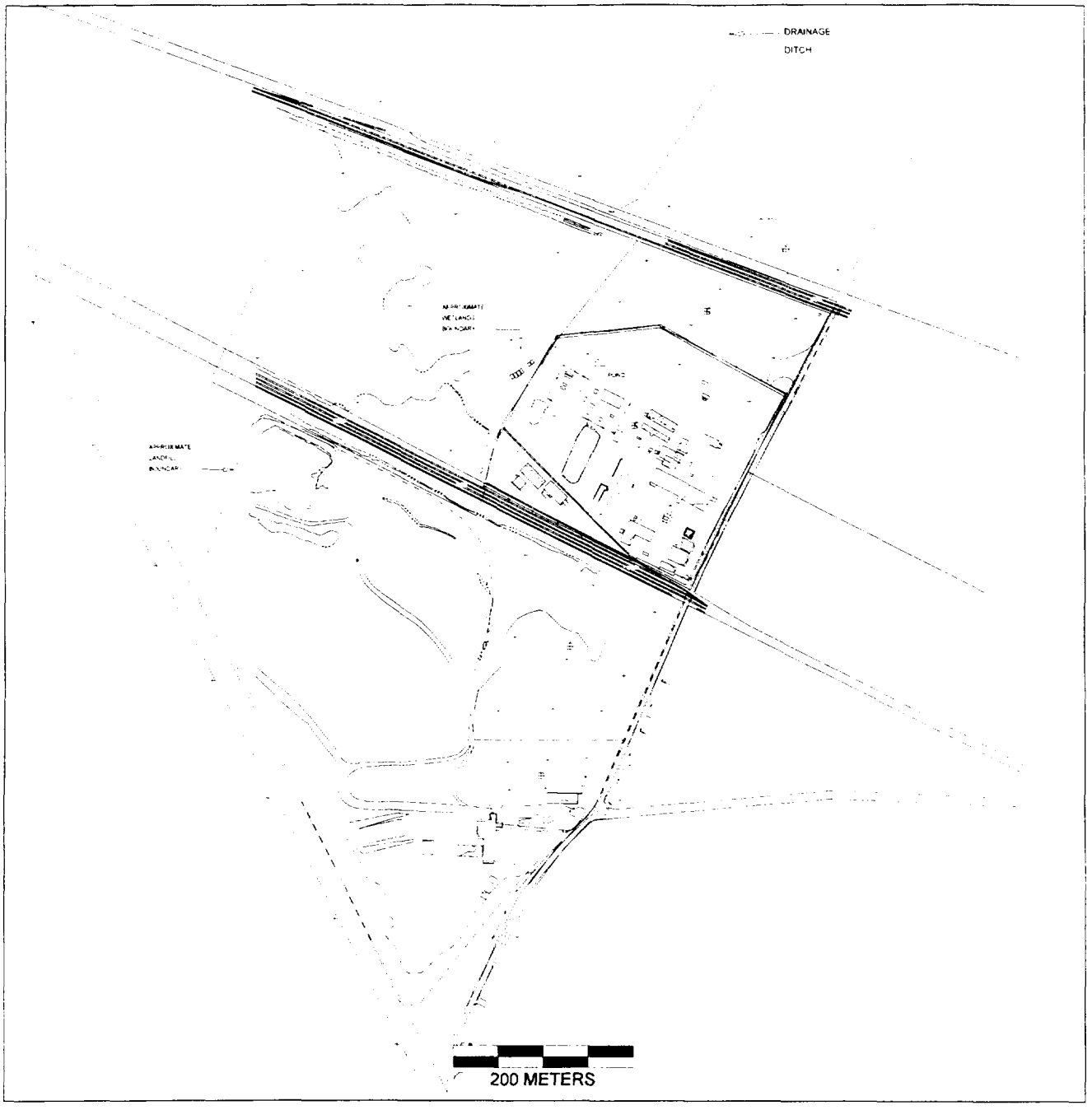
****
*** ISCST3 Finishes Successfully ***
****

ATTACHMENT 2

ISCST3 Model Output File for Emissions During Underground Utility Maintenance Excavation

American Chemical Services (ACS)

Utility Maintenance Excavation



S:\SONG\ACS\RISKCALC\AIR\ACSEXC.DAT

```
1                    ISCST3 - (DATED 96113)

               IBM-PC VERSION (3.04)     ISCST3R
       (C) COPYRIGHT 1992-1996, TRINITY CONSULTANTS, INC.

 Run Began on  7/05/1998 at 18:10:51

 ** BREEZE AIR ISCST3 - C:\ISCST3\ACSEXC.DAT
 ** Trinity Consultants Incorporated, Dallas, TX

 CO STARTING
 CO TITLEONE  American Chemical Services (ACS)
 CO MODELOPT  DFAULT  CONC  RURAL
 CO AVERTIME  1  8  ANNUAL
 CO POLLUTID  OTHER
 CO TERRHGTS  FLAT
 CO RUNORNOT  RUN
 CO FINISHED

 SO STARTING
 SO ELEVUNIT  METERS
 SO LOCATION  AREA1  AREA  1702.0  2141.0  0
 ** SRCDESCR  ONSCA/SBTL
 SO LOCATION  AREA3  AREA  1598.0  1756.0  0
 ** SRCDESCR  Kapica-Pazmey
 SO LOCATION  AREA2  AREA  1630.0  1898.0  0
 ** SRCDESCR  OFFSCA
 SO LOCATION  AREA4B  AREA  1782.0  2267.0  0
 ** SRCDESCR  On-Site North
 SO LOCATION  AREA5B  AREA  1870.0  2335.0  0
 ** SRCDESCR  Offsite North
 SO SRCPARAM  AREA1  1.000000E+00  0  5  5  25  0
 SO SRCPARAM  AREA3  1.000000E+00  0  5  5  0  0
 SO SRCPARAM  AREA2  1.000000E+00  0  5  5  0  0
 SO SRCPARAM  AREA4B  1.000000E+00  0  5  5  25  0
 SO SRCPARAM  AREA5B  1.000000E+00  0  5  5  0  0
 SO CONCUNIT  1.0E+03  GRAMS/SEC  MILLIGRAMS/M**3
 SO SRCGROUP  AREA_1 AREA1
 SO SRCGROUP  AREA_2 AREA2
 SO SRCGROUP  AREA_3 AREA3
 SO SRCGROUP  AREA_4B AREA4B
 SO SRCGROUP  AREA_5B AREA5B
 SO FINISHED

 RE STARTING
 RE DISCCART  1686.4  1729.0
 ** RCPDESCR  Area 5A_1 - Reder
 RE DISCCART  1571.4  1578.2
 ** RCPDESCR  Area 5A_2 - Arbogast
```

```
RE DISCCART  1570.3  2086.5
** RCPDESCR  Area 1_1
RE DISCCART  1612.9  2151.4
** RCPDESCR  Area 1_2
RE DISCCART  1650.2  2219.5
** RCPDESCR  Area 1_3
RE DISCCART  1665.1  2043.9
** RCPDESCR  Area 1_4
RE DISCCART  1706.6  2117.4
** RCPDESCR  Area 1_5
RE DISCCART  1752.4  2207.8
** RCPDESCR  Area 1_6
RE DISCCART  1748.1  2009.9
** RCPDESCR  Area 1_7
RE DISCCART  1788.6  2085.4
** RCPDESCR  Area 1_8
RE DISCCART  1829.0  2167.4
** RCPDESCR  Area 1_9
RE DISCCART  1715.0  2321.8
** RCPDESCR  Area 4B_1
RE DISCCART  1796.9  2291.0
** RCPDESCR  Area 4B_2
RE DISCCART  1880.8  2259.1
** RCPDESCR  Area 4B_3
RE DISCCART  1685.3  2277.1
** RCPDESCR  Area 4B_4
RE DISCCART  1765.0  2251.6
** RCPDESCR  Area 4B_5
RE DISCCART  1856.4  2215.4
** RCPDESCR  Area 4B_6
RE DISCCART  1376.1  2417.0
** RCPDESCR  Area 4A_1
RE DISCCART  1501.7  2372.3
** RCPDESCR  Area 4A_2
RE DISCCART  1616.7  2330.8
** RCPDESCR  Area 4A_3
RE DISCCART  1331.3  2310.6
** RCPDESCR  Area 4A_4
RE DISCCART  1450.6  2272.3
** RCPDESCR  Area 4A_5
RE DISCCART  1564.5  2235.0
** RCPDESCR  Area 4A_6
RE DISCCART  1281.3  2214.8
** RCPDESCR  Area 4A_7
RE DISCCART  1392.0  2165.9
** RCPDESCR  Area 4A_8
RE DISCCART  1497.4  2113.3
** RCPDESCR  Area 4A_9
RE DISCCART  1580.5  1998.6
```

```
** RCPDESCR  Area 2_1
RE DISCCART  1656.1  1965.6
** RCPDESCR  Area 2_2
RE DISCCART  1724.2  1935.8
** RCPDESCR  Area 2_3
RE DISCCART  1568.8  1908.2
** RCPDESCR  Area 2_4
RE DISCCART  1626.3  1883.7
** RCPDESCR  Area 2_5
RE DISCCART  1690.1  1865.6
** RCPDESCR  Area 2_6
RE DISCCART  1550.7  1827.3
** RCPDESCR  Area 2_7
RE DISCCART  1611.4  1829.4
** RCPDESCR  Area 2_8
RE DISCCART  1665.7  1827.3
** RCPDESCR  Area 2_9
RE DISCCART  1561.3  1771.2
** RCPDESCR  Area 3_1
RE DISCCART  1605.0  1773.3
** RCPDESCR  Area 3_2
RE DISCCART  1648.6  1775.5
** RCPDESCR  Area 3_3
RE DISCCART  1562.4  1740.4
** RCPDESCR  Area 3_4
RE DISCCART  1602.8  1742.5
** RCPDESCR  Area 3_5
RE DISCCART  1643.3  1744.6
** RCPDESCR  Area 3_6
RE DISCCART  1031.8  2255.4
** RCPDESCR  Area 6_1
RE DISCCART  1098.2  2119.2
** RCPDESCR  Area 6_2
RE DISCCART  1167.9  1986.4
** RCPDESCR  Area 6_3
RE DISCCART  1231.1  1860.3
** RCPDESCR  Area 6_4
RE DISCCART  1294.2  1730.8
** RCPDESCR  Area 6_5
RE DISCCART  1367.2  1598.0
** RCPDESCR  Area 6_6
RE DISCCART  1437.0  1461.1
** RCPDESCR  Area 6_7
RE DISCCART  1927.0  2312.0
** RCPDESCR  Area 5B_1
RE DISCCART  1832.0  2348.0
** RCPDESCR  Area 5B_2
RE DISCCART  1740.0  2381.0
** RCPDESCR  Area 5B_3
```

```
RE DISCCART  1641.0  2414.0
** RCPDESCR  Area 5B_4
RE DISCCART  1546.0  2451.0
** RCPDESCR  Area 5B_5
RE DISCCART  1418.0  2495.0
** RCPDESCR  Area 5B_6
RE FINISHED

ME STARTING
ME INPUTFIL  S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT
ME ANEMHGHT  10.0  METERS
ME SURFDATA  14848  1991
ME UAIRDATA  14826  1991
ME STARTEND  91  01  01  1  91  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  ALLAVE  FIRST
OU POSTFILE  ANNUAL  AREA_5B  PLOT  C:\ISCST3\EXC5B.PST
OU FINISHED

**********************************
*** SETUP Finishes Successfully ***
**********************************
```

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR
and Calculates ANNUAL Averages
**This Run Includes: 5 Source(s); 5 Source Group(s); and 54 Receptor(s)

**The Model Assumes A Pollutant Type of: OTHER
**Model Set To Continue RUNning After the Setup Testing.
**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ; Rot. Angle = .0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 1000.0
Output Units = MILLIGRAMS/M**3

**Input Runstream File: C:\ISCST3\ACSEXC.DAT ; **Output Print File: C:\ISCST3\ACSEXC.LST

**MODELOPTs: CONC RURAL FLAT DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
AREA1	0	.10000E+01	1702.0	2141.0	.0	.00	5.00	5.00	25.00	.00	
AREA3	0	.10000E+01	1598.0	1756.0	.0	.00	5.00	5.00	.00	.00	
AREA2	0	.10000E+01	1630.0	1898.0	.0	.00	5.00	5.00	.00	.00	
AREA4B	0	.10000E+01	1782.0	2267.0	.0	.00	5.00	5.00	25.00	.00	
AREA5B	0	.10000E+01	1870.0	2335.0	.0	.00	5.00	5.00	.00	.00	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
AREA_1	AREA1 ,
AREA_2	AREA2 ,
AREA_3	AREA3 ,
AREA_4B	AREA4B ,
AREA_5B	AREA5B ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(1686.4,	1729.0,	.0,	.0);	(1571.4,	1578.2,	.0,	.0);
(1570.3,	2086.5,	.0,	.0);	(1612.9,	2151.4,	.0,	.0);
(1650.2,	2219.5,	.0,	.0);	(1665.1,	2043.9,	.0,	.0);
(1706.6,	2117.4,	.0,	.0);	(1752.4,	2207.8,	.0,	.0);
(1748.1,	2009.9,	.0,	.0);	(1788.6,	2085.4,	.0,	.0);
(1829.0,	2167.4,	.0,	.0);	(1715.0,	2321.8,	.0,	.0);
(1796.9,	2291.0,	.0,	.0);	(1880.8,	2259.1,	.0,	.0);
(1685.3,	2277.1,	.0,	.0);	(1765.0,	2251.6,	.0,	.0);
(1856.4,	2215.4,	.0,	.0);	(1376.1,	2417.0,	.0,	.0);
(1501.7,	2372.3,	.0,	.0);	(1616.7,	2330.8,	.0,	.0);
(1331.3,	2310.6,	.0,	.0);	(1450.6,	2272.3,	.0,	.0);
(1564.5,	2235.0,	.0,	.0);	(1281.3,	2214.8,	.0,	.0);
(1392.0,	2165.9,	.0,	.0);	(1497.4,	2113.3,	.0,	.0);
(1580.5,	1998.6,	.0,	.0);	(1656.1,	1965.6,	.0,	.0);
(1724.2,	1935.8,	.0,	.0);	(1568.8,	1908.2,	.0,	.0);
(1626.3,	1883.7,	.0,	.0);	(1690.1,	1865.6,	.0,	.0);
(1550.7,	1827.3,	.0,	.0);	(1611.4,	1829.4,	.0,	.0);
(1665.7,	1827.3,	.0,	.0);	(1561.3,	1771.2,	.0,	.0);
(1605.0,	1773.3,	.0,	.0);	(1648.6,	1775.5,	.0,	.0);
(1562.4,	1740.4,	.0,	.0);	(1602.8,	1742.5,	.0,	.0);
(1643.3,	1744.6,	.0,	.0);	(1031.8,	2255.4,	.0,	.0);
(1098.2,	2119.2,	.0,	.0);	(1167.9,	1986.4,	.0,	.0);
(1231.1,	1860.3,	.0,	.0);	(1294.2,	1730.8,	.0,	.0);
(1367.2,	1598.0,	.0,	.0);	(1437.0,	1461.1,	.0,	.0);
(1927.0,	2312.0,	.0,	.0);	(1832.0,	2348.0,	.0,	.0);
(1740.0,	2381.0,	.0,	.0);	(1641.0,	2414.0,	.0,	.0);
(1546.0,	2451.0,	.0,	.0);	(1418.0,	2495.0,	.0,	.0);

**MODELOPTs: CONC RURAL FLAT DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 91 1 1 1
AND END DATE: 91 12 31 24
NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 14848 UPPER AIR STATION NO.: 14826
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1991 YEAR: 1991

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
91	1	1	1	11.0	5.14	262.6	5	745.0	426.0	.0000	.0	.0000	0	.00
91	1	1	2	8.0	5.14	263.1	5	731.9	426.0	.0000	.0	.0000	0	.00
91	1	1	3	34.0	5.66	263.1	4	718.7	718.7	.0000	.0	.0000	0	.00
91	1	1	4	13.0	4.63	263.7	5	705.6	426.0	.0000	.0	.0000	0	.00
91	1	1	5	13.0	4.63	263.1	5	692.4	426.0	.0000	.0	.0000	0	.00
91	1	1	6	32.0	3.60	263.7	5	679.2	426.0	.0000	.0	.0000	0	.00
91	1	1	7	25.0	3.60	263.1	5	666.1	426.0	.0000	.0	.0000	0	.00
91	1	1	8	3.0	4.12	263.7	5	652.9	426.0	.0000	.0	.0000	0	.00
91	1	1	9	357.0	6.17	264.8	4	70.6	444.2	.0000	.0	.0000	0	.00
91	1	1	10	11.0	5.66	265.9	4	171.3	470.2	.0000	.0	.0000	0	.00
91	1	1	11	24.0	5.66	267.6	4	272.0	496.1	.0000	.0	.0000	0	.00
91	1	1	12	16.0	5.66	269.3	4	372.7	522.1	.0000	.0	.0000	0	.00
91	1	1	13	23.0	7.20	270.9	4	473.3	548.0	.0000	.0	.0000	0	.00
91	1	1	14	19.0	5.66	272.6	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	15	42.0	7.20	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	16	34.0	5.14	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	17	21.0	5.66	272.0	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	18	27.0	4.12	270.9	5	578.0	597.4	.0000	.0	.0000	0	.00
91	1	1	19	24.0	4.63	270.4	5	584.0	632.0	.0000	.0	.0000	0	.00
91	1	1	20	17.0	3.60	269.3	5	589.9	666.6	.0000	.0	.0000	0	.00
91	1	1	21	30.0	4.12	269.8	5	595.9	701.2	.0000	.0	.0000	0	.00
91	1	1	22	52.0	3.60	269.3	5	601.8	735.8	.0000	.0	.0000	0	.00
91	1	1	23	60.0	2.57	268.1	6	607.8	770.4	.0000	.0	.0000	0	.00
91	1	1	24	50.0	3.09	267.6	5	613.7	805.0	.0000	.0	.0000	0	.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	.19851	1571.40	1578.20	.07559
1570.30	2086.50	1.11605	1612.90	2151.40	2.65046
1650.20	2219.50	1.52114	1665.10	2043.90	1.49336
1706.60	2117.40	36.08434	1752.40	2207.80	5.97594
1748.10	2009.90	1.30618	1788.60	2085.40	1.58674
1829.00	2167.40	.72731	1715.00	2321.80	.88934
1796.90	2291.00	1.49602	1880.80	2259.10	.91030
1685.30	2277.10	1.02862	1765.00	2251.60	2.91435
1856.40	2215.40	1.08905	1376.10	2417.00	.09576
1501.70	2372.30	.18300	1616.70	2330.80	.37858
1331.30	2310.60	.15826	1450.60	2272.30	.26974
1564.50	2235.00	.65662	1281.30	2214.80	.14923
1392.00	2165.90	.28039	1497.40	2113.30	.52666
1580.50	1998.60	.52671	1656.10	1965.60	.59579
1724.20	1935.80	.69210	1568.80	1908.20	.21486
1626.30	1883.70	.29307	1690.10	1865.60	.39976
1550.70	1827.30	.16388	1611.40	1829.40	.20821
1665.70	1827.30	.26811	1561.30	1771.20	.13256
1605.00	1773.30	.15650	1648.60	1775.50	.19980
1562.40	1740.40	.12226	1602.80	1742.50	.13676
1643.30	1744.60	.17264	1031.80	2255.40	.06541
1098.20	2119.20	.08350	1167.90	1986.40	.08024
1231.10	1860.30	.12002	1294.20	1730.80	.07473
1367.20	1598.00	.04352	1437.00	1461.10	.04398
1927.00	2312.00	.57571	1832.00	2348.00	.82388
1740.00	2381.00	.66258	1641.00	2414.00	.23943
1546.00	2451.00	.14273	1418.00	2495.00	.09403

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	.80362	1571.40	1578.20	.23819
1570.30	2086.50	.33294	1612.90	2151.40	.40992
1650.20	2219.50	.30913	1665.10	2043.90	1.63527
1706.60	2117.40	.88605	1752.40	2207.80	.43553
1748.10	2009.90	1.61427	1788.60	2085.40	.78460
1829.00	2167.40	.44371	1715.00	2321.80	.22914
1796.90	2291.00	.27993	1880.80	2259.10	.27357
1685.30	2277.10	.29208	1765.00	2251.60	.34844
1856.40	2215.40	.33828	1376.10	2417.00	.05899
1501.70	2372.30	.07474	1616.70	2330.80	.18187
1331.30	2310.60	.07264	1450.60	2272.30	.10801
1564.50	2235.00	.17799	1281.30	2214.80	.08300
1392.00	2165.90	.13644	1497.40	2113.30	.23666
1580.50	1998.60	1.14828	1656.10	1965.60	7.85076
1724.20	1935.80	2.06418	1568.80	1908.20	5.18209
1626.30	1883.70	41.51574	1690.10	1865.60	3.20074
1550.70	1827.30	1.96792	1611.40	1829.40	3.14298
1665.70	1827.30	3.62044	1561.30	1771.20	.69971
1605.00	1773.30	1.21078	1648.60	1775.50	1.74006
1562.40	1740.40	.60144	1602.80	1742.50	.87663
1643.30	1744.60	1.20262	1031.80	2255.40	.05184
1098.20	2119.20	.08868	1167.90	1986.40	.12240
1231.10	1860.30	.16672	1294.20	1730.80	.20291
1367.20	1598.00	.13545	1437.00	1461.10	.09724
1927.00	2312.00	.20854	1832.00	2348.00	.22197
1740.00	2381.00	.18025	1641.00	2414.00	.13344
1546.00	2451.00	.07811	1418.00	2495.00	.03887

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	1.67322	1571.40	1578.20	.72117
1570.30	2086.50	.23613	1612.90	2151.40	.21210
1650.20	2219.50	.18709	1665.10	2043.90	.45922
1706.60	2117.40	.37081	1752.40	2207.80	.24227
1748.10	2009.90	.59656	1788.60	2085.40	.37944
1829.00	2167.40	.26129	1715.00	2321.80	.13561
1796.90	2291.00	.16794	1880.80	2259.10	.18176
1685.30	2277.10	.16634	1765.00	2251.60	.20738
1856.40	2215.40	.21390	1376.10	2417.00	.03160
1501.70	2372.30	.06393	1616.70	2330.80	.10826
1331.30	2310.60	.05323	1450.60	2272.30	.05917
1564.50	2235.00	.13015	1281.30	2214.80	.05730
1392.00	2165.90	.08741	1497.40	2113.30	.11670
1580.50	1998.60	.43429	1656.10	1965.60	.92992
1724.20	1935.80	.97359	1568.80	1908.20	.76261
1626.30	1883.70	2.07592	1690.10	1865.60	2.16019
1550.70	1827.30	1.89719	1611.40	1829.40	6.04846
1665.70	1827.30	4.27988	1561.30	1771.20	10.80112
1605.00	1773.30	119.73240	1648.60	1775.50	6.52106
1562.40	1740.40	11.21696	1602.80	1742.50	79.27129
1643.30	1744.60	6.47810	1031.80	2255.40	.03562
1098.20	2119.20	.05525	1167.90	1986.40	.10023
1231.10	1860.30	.16831	1294.20	1730.80	.27603
1367.20	1598.00	.39276	1437.00	1461.10	.15281
1927.00	2312.00	.14436	1832.00	2348.00	.13541
1740.00	2381.00	.11403	1641.00	2414.00	.08528
1546.00	2451.00	.06557	1418.00	2495.00	.03854

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	.09613	1571.40	1578.20	.05015
1570.30	2086.50	.38678	1612.90	2151.40	.68945
1650.20	2219.50	1.06699	1665.10	2043.90	.26579
1706.60	2117.40	.57278	1752.40	2207.80	2.90227
1748.10	2009.90	.37941	1788.60	2085.40	.95120
1829.00	2167.40	2.13781	1715.00	2321.80	1.83579
1796.90	2291.00	52.34149	1880.80	2259.10	1.50998
1685.30	2277.10	2.28630	1765.00	2251.60	28.53840
1856.40	2215.40	2.24668	1376.10	2417.00	.14544
1501.70	2372.30	.28095	1616.70	2330.80	.72920
1331.30	2310.60	.14777	1450.60	2272.30	.22653
1564.50	2235.00	.47199	1281.30	2214.80	.10946
1392.00	2165.90	.15689	1497.40	2113.30	.28016
1580.50	1998.60	.18457	1656.10	1965.60	.18965
1724.20	1935.80	.22857	1568.80	1908.20	.09443
1626.30	1883.70	.12292	1690.10	1865.60	.13926
1550.70	1827.30	.07945	1611.40	1829.40	.09706
1665.70	1827.30	.11358	1561.30	1771.20	.07781
1605.00	1773.30	.08226	1648.60	1775.50	.09278
1562.40	1740.40	.06964	1602.80	1742.50	.07689
1643.30	1744.60	.08341	1031.80	2255.40	.05464
1098.20	2119.20	.06421	1167.90	1986.40	.06982
1231.10	1860.30	.07653	1294.20	1730.80	.04685
1367.20	1598.00	.02993	1437.00	1461.10	.03318
1927.00	2312.00	.80036	1832.00	2348.00	4.94495
1740.00	2381.00	.92232	1641.00	2414.00	.35846
1546.00	2451.00	.18529	1418.00	2495.00	.12226

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_5B ***
INCLUDING SOURCE(S): AREA5B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	.06290	1571.40	1578.20	.03630
1570.30	2086.50	.21602	1612.90	2151.40	.30763
1650.20	2219.50	.44289	1665.10	2043.90	.15153
1706.60	2117.40	.26558	1752.40	2207.80	.60693
1748.10	2009.90	.16802	1788.60	2085.40	.29721
1829.00	2167.40	.65041	1715.00	2321.80	.91863
1796.90	2291.00	3.26877	1880.80	2259.10	4.13762
1685.30	2277.10	.54736	1765.00	2251.60	1.43572
1856.40	2215.40	1.52279	1376.10	2417.00	.11504
1501.70	2372.30	.21211	1616.70	2330.80	.38839
1331.30	2310.60	.10364	1450.60	2272.30	.14571
1564.50	2235.00	.22237	1281.30	2214.80	.08393
1392.00	2165.90	.10577	1497.40	2113.30	.18192
1580.50	1998.60	.11214	1656.10	1965.60	.09294
1724.20	1935.80	.11860	1568.80	1908.20	.07684
1626.30	1883.70	.07299	1690.10	1865.60	.08590
1550.70	1827.30	.04893	1611.40	1829.40	.06509
1665.70	1827.30	.07369	1561.30	1771.20	.04793
1605.00	1773.30	.06014	1648.60	1775.50	.06194
1562.40	1740.40	.04792	1602.80	1742.50	.05639
1643.30	1744.60	.05676	1031.80	2255.40	.04482
1098.20	2119.20	.04258	1167.90	1986.40	.05485
1231.10	1860.30	.05881	1294.20	1730.80	.03695
1367.20	1598.00	.02781	1437.00	1461.10	.02630
1927.00	2312.00	3.43947	1832.00	2348.00	10.09128
1740.00	2381.00	1.15195	1641.00	2414.00	.41387
1546.00	2451.00	.22029	1418.00	2495.00	.12168

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	69.32445	(91081105)	1571.40	1578.20	25.20576	(91080923)
1570.30	2086.50	268.69990	(91042502)	1612.90	2151.40	573.41410	(91090721)
1650.20	2219.50	820.53680	(91070922)	1665.10	2043.90	461.79640	(91040206)
1706.60	2117.40	3675.27500	(91081321)	1752.40	2207.80	725.94560	(91020102)
1748.10	2009.90	266.85490	(91100101)	1788.60	2085.40	753.03230	(91081101)
1829.00	2167.40	287.34340	(91090424)	1715.00	2321.80	177.05950	(91032422)
1796.90	2291.00	194.52600	(91110905)	1880.80	2259.10	140.19770	(91092620)
1685.30	2277.10	269.37280	(91070924)	1765.00	2251.60	351.64070	(91030421)
1856.40	2215.40	323.00290	(91051403)	1376.10	2417.00	37.98410	(91082521)
1501.70	2372.30	75.72237	(91031605)	1616.70	2330.80	139.60130	(91042804)
1331.30	2310.60	47.28529	(91010502)	1450.60	2272.30	87.66996	(91110923)
1564.50	2235.00	211.18020	(91062606)	1281.30	2214.80	54.56840	(91062006)
1392.00	2165.90	71.22720	(91101022)	1497.40	2113.30	131.35060	(91051001)
1580.50	1998.60	237.42380	(91070923)	1656.10	1965.60	179.93220	(91081822)
1724.20	1935.80	165.57240	(91081321)	1568.80	1908.20	143.10950	(91060902)
1626.30	1883.70	130.23600	(91060805)	1690.10	1865.60	138.47590	(91081105)
1550.70	1827.30	82.78228	(91041722)	1611.40	1829.40	87.77308	(91060805)
1665.70	1827.30	68.30861	(91060722)	1561.30	1771.20	46.74952	(91040206)
1605.00	1773.30	53.39142	(91081822)	1648.60	1775.50	56.17442	(91061724)
1562.40	1740.40	50.28522	(91060805)	1602.80	1742.50	46.36546	(91080923)
1643.30	1744.60	49.10089	(91061724)	1031.80	2255.40	23.09997	(91062006)
1098.20	2119.20	24.38429	(91042503)	1167.90	1986.40	28.04028	(91073006)
1231.10	1860.30	33.90756	(91020608)	1294.20	1730.80	23.48185	(91031523)
1367.20	1598.00	22.00284	(91060902)	1437.00	1461.10	17.36533	(91040206)
1927.00	2312.00	134.12000	(91081421)	1832.00	2348.00	112.09690	(91110905)
1740.00	2381.00	110.51450	(91122507)	1641.00	2414.00	67.75089	(91082606)
1546.00	2451.00	52.51656	(91042804)	1418.00	2495.00	39.83711	(91031622)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	152.34240	(91100101)	1571.40	1578.20	69.00959	(91092422)
1570.30	2086.50	99.31670	(91081806)	1612.90	2151.40	128.03530	(91070924)
1650.20	2219.50	67.64625	(91032422)	1665.10	2043.90	269.00390	(91112607)
1706.60	2117.40	118.14310	(91030803)	1752.40	2207.80	57.05956	(91101606)
1748.10	2009.90	280.77510	(91051422)	1788.60	2085.40	123.87580	(91030805)
1829.00	2167.40	76.53566	(91020102)	1715.00	2321.80	44.07159	(91112120)
1796.90	2291.00	33.70443	(91101603)	1880.80	2259.10	42.48872	(91081802)
1685.30	2277.10	48.62041	(91082806)	1765.00	2251.60	52.64834	(91101606)
1856.40	2215.40	51.72826	(91081802)	1376.10	2417.00	26.22974	(91042804)
1501.70	2372.30	34.31510	(91121908)	1616.70	2330.80	43.83511	(91101520)
1331.30	2310.60	49.08856	(91070922)	1450.60	2272.30	46.88174	(91042804)
1564.50	2235.00	63.36338	(91070222)	1281.30	2214.80	34.79409	(91082521)
1392.00	2165.90	59.71568	(91031605)	1497.40	2113.30	106.67730	(91082522)
1580.50	1998.60	315.90630	(91042804)	1656.10	1965.60	920.01620	(91101606)
1724.20	1935.80	482.46060	(91070205)	1568.80	1908.20	1031.40300	(91072706)
1626.30	1883.70	7037.20200	(91060805)	1690.10	1865.60	852.15310	(91081101)
1550.70	1827.30	499.35780	(91060905)	1611.40	1829.40	1063.97900	(91060805)
1665.70	1827.30	631.57560	(91080323)	1561.30	1771.20	355.60340	(91060902)
1605.00	1773.30	330.26080	(91041723)	1648.60	1775.50	519.20120	(91081321)
1562.40	1740.40	261.03880	(91041722)	1602.80	1742.50	229.49470	(91092422)
1643.30	1744.60	243.61900	(91073004)	1031.80	2255.40	18.92448	(91121906)
1098.20	2119.20	26.46835	(91032504)	1167.90	1986.40	54.51557	(91062006)
1231.10	1860.30	48.57175	(91121823)	1294.20	1730.80	66.58361	(91071122)
1367.20	1598.00	69.34950	(91062002)	1437.00	1461.10	49.79090	(91041722)
1927.00	2312.00	32.72400	(91071701)	1832.00	2348.00	31.56549	(91011505)
1740.00	2381.00	35.58124	(91102508)	1641.00	2414.00	29.33908	(91030422)
1546.00	2451.00	19.18589	(91051524)	1418.00	2495.00	17.11151	(91081806)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	359.54750	(91110802)	1571.40	1578.20	186.46580	(91061724)
1570.30	2086.50	97.62452	(91070924)	1612.90	2151.40	50.96643	(91090704)
1650.20	2219.50	35.62499	(91082806)	1665.10	2043.90	83.82252	(91112607)
1706.60	2117.40	81.47826	(91030804)	1752.40	2207.80	35.30899	(91030803)
1748.10	2009.90	81.91952	(91110905)	1788.60	2085.40	50.02200	(91030421)
1829.00	2167.40	37.86641	(91030421)	1715.00	2321.80	28.97939	(91102508)
1796.90	2291.00	27.26907	(91101606)	1880.80	2259.10	26.77581	(91030421)
1685.30	2277.10	30.99403	(91122507)	1765.00	2251.60	31.13908	(91030803)
1856.40	2215.40	31.25071	(91030421)	1376.10	2417.00	12.25464	(91081806)
1501.70	2372.30	16.13721	(91110924)	1616.70	2330.80	26.61655	(91090704)
1331.30	2310.60	24.00645	(91042804)	1450.60	2272.30	25.06506	(91121908)
1564.50	2235.00	39.73307	(91070924)	1281.30	2214.80	37.52430	(91070922)
1392.00	2165.90	34.39019	(91042804)	1497.40	2113.30	48.40234	(91121908)
1580.50	1998.60	150.07990	(91070924)	1656.10	1965.60	194.42790	(91030804)
1724.20	1935.80	140.39910	(91081802)	1568.80	1908.20	231.96340	(91070222)
1626.30	1883.70	337.69130	(91032423)	1690.10	1865.60	317.29660	(91020102)
1550.70	1827.30	1001.48800	(91070922)	1611.40	1829.40	866.23930	(91122507)
1665.70	1827.30	708.45680	(91030805)	1561.30	1771.20	1937.62300	(91052122)
1605.00	1773.30	8011.63900	(91030804)	1648.60	1775.50	1433.01800	(91012822)
1562.40	1740.40	2073.72400	(91071122)	1602.80	1742.50	7473.11700	(91081321)
1643.30	1744.60	1119.96000	(91042423)	1031.80	2255.40	17.00216	(91082521)
1098.20	2119.20	22.45145	(91042805)	1167.90	1986.40	32.93914	(91110923)
1231.10	1860.30	51.43277	(91071601)	1294.20	1730.80	72.05858	(91121823)
1367.20	1598.00	129.93950	(91051003)	1437.00	1461.10	84.13392	(91060902)
1927.00	2312.00	21.67035	(91110905)	1832.00	2348.00	17.68408	(91101606)
1740.00	2381.00	28.07471	(91102508)	1641.00	2414.00	20.87826	(91032422)
1546.00	2451.00	22.10733	(91070924)	1418.00	2495.00	14.58950	(91121908)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	28.60015	(91081821)	1571.40	1578.20	25.48355	(91060805)
1570.30	2086.50	134.52970	(91060905)	1612.90	2151.40	224.13830	(91051003)
1650.20	2219.50	210.07150	(91041103)	1665.10	2043.90	114.23320	(91060902)
1706.60	2117.40	207.19070	(91061303)	1752.40	2207.80	1217.37300	(91060902)
1748.10	2009.90	101.93530	(91060722)	1788.60	2085.40	186.62060	(91091024)
1829.00	2167.40	432.80660	(91080323)	1715.00	2321.80	465.74630	(91063023)
1796.90	2291.00	3240.62500	(91112219)	1880.80	2259.10	463.89980	(91120120)
1685.30	2277.10	508.86720	(91101022)	1765.00	2251.60	5017.63000	(91062004)
1856.40	2215.40	806.91640	(91081102)	1376.10	2417.00	38.56142	(91020104)
1501.70	2372.30	69.29799	(91020104)	1616.70	2330.80	160.45320	(91020104)
1331.30	2310.60	39.30301	(91101022)	1450.60	2272.30	55.86658	(91092402)
1564.50	2235.00	130.45210	(91051001)	1281.30	2214.80	33.25961	(91121823)
1392.00	2165.90	46.60076	(91051006)	1497.40	2113.30	104.03220	(91071122)
1580.50	1998.60	65.55624	(91022224)	1656.10	1965.60	72.93651	(91041722)
1724.20	1935.80	64.89381	(91081821)	1568.80	1908.20	60.89124	(91060902)
1626.30	1883.70	45.40107	(91040206)	1690.10	1865.60	44.48442	(91080923)
1550.70	1827.30	34.09679	(91061303)	1611.40	1829.40	36.92453	(91040206)
1665.70	1827.30	39.52626	(91081822)	1561.30	1771.20	42.59625	(91041722)
1605.00	1773.30	31.15483	(91070904)	1648.60	1775.50	31.83066	(91081822)
1562.40	1740.40	26.98996	(91062501)	1602.80	1742.50	36.43641	(91060805)
1643.30	1744.60	29.54675	(91081822)	1031.80	2255.40	14.98184	(91042503)
1098.20	2119.20	18.98221	(91031023)	1167.90	1986.40	19.73679	(91051002)
1231.10	1860.30	19.51042	(91051223)	1294.20	1730.80	26.52191	(91062002)
1367.20	1598.00	14.59629	(91060902)	1437.00	1461.10	14.49952	(91041722)
1927.00	2312.00	250.11730	(91073104)	1832.00	2348.00	561.87160	(91110905)
1740.00	2381.00	371.24060	(91082921)	1641.00	2414.00	114.91120	(91090724)
1546.00	2451.00	59.40385	(91063023)	1418.00	2495.00	43.22088	(91031101)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_5B ***
INCLUDING SOURCE(S): AREA5B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	30.07847	(91060805)	1571.40	1578.20	14.78363	(91040206)
1570.30	2086.50	76.17478	(91060905)	1612.90	2151.40	81.70317	(91051003)
1650.20	2219.50	163.18600	(91071122)	1665.10	2043.90	59.20046	(91060601)
1706.60	2117.40	93.35206	(91022224)	1752.40	2207.80	278.93170	(91062002)
1748.10	2009.90	58.07414	(91070904)	1788.60	2085.40	146.42120	(91060805)
1829.00	2167.40	197.68640	(91080923)	1715.00	2321.80	236.26640	(91121823)
1796.90	2291.00	614.60000	(91051004)	1880.80	2259.10	1053.55700	(91081321)
1685.30	2277.10	123.39340	(91111624)	1765.00	2251.60	447.27330	(91062004)
1856.40	2215.40	355.82180	(91060722)	1376.10	2417.00	33.09764	(91062006)
1501.70	2372.30	55.28185	(91101022)	1616.70	2330.80	103.14420	(91042503)
1331.30	2310.60	29.64136	(91051323)	1450.60	2272.30	44.26530	(91051001)
1564.50	2235.00	52.16604	(91111624)	1281.30	2214.80	24.49872	(91031023)
1392.00	2165.90	24.33346	(91041103)	1497.40	2113.30	43.11242	(91081401)
1580.50	1998.60	57.87622	(91070923)	1656.10	1965.60	65.60719	(91060902)
1724.20	1935.80	43.93579	(91070904)	1568.80	1908.20	30.98820	(91060601)
1626.30	1883.70	36.86443	(91060902)	1690.10	1865.60	30.57469	(91040206)
1550.70	1827.30	23.11487	(91112102)	1611.40	1829.40	27.03917	(91092022)
1665.70	1827.30	28.90257	(91040206)	1561.30	1771.20	27.61270	(91060902)
1605.00	1773.30	35.47362	(91041722)	1648.60	1775.50	24.42194	(91040206)
1562.40	1740.40	20.08865	(91092022)	1602.80	1742.50	31.88688	(91041722)
1643.30	1744.60	20.69366	(91040206)	1031.80	2255.40	13.95033	(91121823)
1098.20	2119.20	15.29461	(91073006)	1167.90	1986.40	17.88305	(91071122)
1231.10	1860.30	15.33144	(91062424)	1294.20	1730.80	15.41941	(91062002)
1367.20	1598.00	12.29431	(91060601)	1437.00	1461.10	13.33153	(91041722)
1927.00	2312.00	409.13860	(91120107)	1832.00	2348.00	1722.79800	(91071601)
1740.00	2381.00	294.34880	(91052122)	1641.00	2414.00	113.83940	(91052122)
1546.00	2451.00	63.45008	(91020104)	1418.00	2495.00	36.30983	(91020104)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_1 ***
INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	11.60887c	(91081108)	1571.40	1578.20	4.22505c	(91081824)
1570.30	2086.50	53.34497c	(91071108)	1612.90	2151.40	83.99770c	(91072708)
1650.20	2219.50	102.56710	(91070924)	1665.10	2043.90	80.67623c	(91062508)
1706.60	2117.40	1102.97900	(91081324)	1752.40	2207.80	160.62630	(91070508)
1748.10	2009.90	49.61399c	(91081008)	1788.60	2085.40	167.00260c	(91081108)
1829.00	2167.40	41.04906c	(91090424)	1715.00	2321.80	30.02297c	(91082908)
1796.90	2291.00	33.05549c	(91121108)	1880.80	2259.10	31.17817	(91061208)
1685.30	2277.10	77.48780c	(91110924)	1765.00	2251.60	53.51117c	(91011508)
1856.40	2215.40	71.64770c	(91072508)	1376.10	2417.00	5.42630c	(91082524)
1501.70	2372.30	12.62040c	(91031608)	1616.70	2330.80	20.22030	(91042808)
1331.30	2310.60	6.80001	(91050924)	1450.60	2272.30	20.47059c	(91110924)
1564.50	2235.00	36.70050c	(91062608)	1281.30	2214.80	10.79197c	(91062008)
1392.00	2165.90	10.26692c	(91062108)	1497.40	2113.30	31.45256	(91031108)
1580.50	1998.60	39.51442c	(91062008)	1656.10	1965.60	35.65244	(91061224)
1724.20	1935.80	30.64228	(91112024)	1568.80	1908.20	23.85159c	(91060908)
1626.30	1883.70	22.41289c	(91060808)	1690.10	1865.60	23.18998c	(91081108)
1550.70	1827.30	13.40951c	(91060708)	1611.40	1829.40	15.17082c	(91060808)
1665.70	1827.30	12.34531c	(91061708)	1561.30	1771.20	7.79159c	(91040208)
1605.00	1773.30	9.38724	(91061224)	1648.60	1775.50	8.86624c	(91060724)
1562.40	1740.40	8.44959c	(91060808)	1602.80	1742.50	8.14536c	(91081824)
1643.30	1744.60	7.62154c	(91060724)	1031.80	2255.40	4.64352c	(91062008)
1098.20	2119.20	7.93593c	(91052208)	1167.90	1986.40	5.09033	(91092808)
1231.10	1860.30	8.47123c	(91090608)	1294.20	1730.80	4.75324	(91080508)
1367.20	1598.00	3.66714c	(91060908)	1437.00	1461.10	2.89422c	(91040208)
1927.00	2312.00	22.84693c	(91110824)	1832.00	2348.00	18.82415c	(91121108)
1740.00	2381.00	32.58356c	(91112124)	1641.00	2414.00	16.93772	(91122524)
1546.00	2451.00	7.92261	(91042808)	1418.00	2495.00	8.72111	(91122524)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	32.61987c	(91081008)	1571.40	1578.20	12.48651c	(91092424)
1570.30	2086.50	18.70336	(91052224)	1612.90	2151.40	32.69076	(91102024)
1650.20	2219.50	11.08086c	(91082908)	1665.10	2043.90	56.38086c	(91112608)
1706.60	2117.40	29.13947c	(91030808)	1752.40	2207.80	25.66945	(91101608)
1748.10	2009.90	46.79584c	(91051424)	1788.60	2085.40	24.41861	(91122508)
1829.00	2167.40	13.50052	(91070508)	1715.00	2321.80	7.96675c	(91112124)
1796.90	2291.00	17.50091	(91101608)	1880.80	2259.10	8.31340	(91070508)
1685.30	2277.10	14.96821c	(91112124)	1765.00	2251.60	18.83918	(91101608)
1856.40	2215.40	10.73533	(91070508)	1376.10	2417.00	3.80950	(91042808)
1501.70	2372.30	5.71918c	(91121908)	1616.70	2330.80	11.56699	(91102024)
1331.30	2310.60	6.13607	(91070924)	1450.60	2272.30	6.77266	(91042808)
1564.50	2235.00	12.29312c	(91110924)	1281.30	2214.80	4.97058c	(91082524)
1392.00	2165.90	9.95261c	(91031608)	1497.40	2113.30	19.22585c	(91082524)
1580.50	1998.60	57.38756	(91021208)	1656.10	1965.60	319.97250	(91101608)
1724.20	1935.80	96.15383	(91051208)	1568.80	1908.20	171.90050c	(91072708)
1626.30	1883.70	1351.28600c	(91092908)	1690.10	1865.60	152.04060c	(91081108)
1550.70	1827.30	113.31860c	(91092824)	1611.40	1829.40	189.09640c	(91060808)
1665.70	1827.30	120.54150	(91080324)	1561.30	1771.20	59.26723c	(91060908)
1605.00	1773.30	61.20384c	(91081824)	1648.60	1775.50	78.28883	(91062524)
1562.40	1740.40	42.28445c	(91060708)	1602.80	1742.50	42.05040c	(91092424)
1643.30	1744.60	51.33074	(91112024)	1031.80	2255.40	3.75864c	(91110924)
1098.20	2119.20	5.40566	(91050924)	1167.90	1986.40	10.25011c	(91062008)
1231.10	1860.30	9.16054	(91090208)	1294.20	1730.80	11.85753c	(91071108)
1367.20	1598.00	11.55825c	(91062008)	1437.00	1461.10	8.06539c	(91060708)
1927.00	2312.00	6.74664	(91070508)	1832.00	2348.00	12.08684	(91101608)
1740.00	2381.00	6.31763c	(91112608)	1641.00	2414.00	7.33453c	(91011508)
1546.00	2451.00	7.46385c	(91110924)	1418.00	2495.00	2.85302c	(91081808)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	56.19711	(91042424)	1571.40	1578.20	29.14598c	(91092708)
1570.30	2086.50	17.31467	(91102024)	1612.90	2151.40	8.86299c	(91011508)
1650.20	2219.50	9.27962c	(91112124)	1665.10	2043.90	16.40613c	(91112608)
1706.60	2117.40	20.17256c	(91030508)	1752.40	2207.80	8.59205c	(91030808)
1748.10	2009.90	13.65325c	(91110908)	1788.60	2085.40	8.03012c	(91110908)
1829.00	2167.40	5.40949c	(91030424)	1715.00	2321.80	4.34485c	(91112124)
1796.90	2291.00	8.41199	(91101608)	1880.80	2259.10	3.82512c	(91030424)
1685.30	2277.10	7.37714c	(91112124)	1765.00	2251.60	7.89495c	(91030808)
1856.40	2215.40	4.46439c	(91030424)	1376.10	2417.00	2.07089	(91052224)
1501.70	2372.30	6.32725c	(91110924)	1616.70	2330.80	4.93958c	(91011508)
1331.30	2310.60	3.45419	(91042808)	1450.60	2272.30	4.17751c	(91121908)
1564.50	2235.00	11.07853	(91102024)	1281.30	2214.80	4.69054	(91070924)
1392.00	2165.90	5.13172	(91042808)	1497.40	2113.30	8.06706c	(91121908)
1580.50	1998.60	33.55104	(91102024)	1656.10	1965.60	47.92668c	(91030508)
1724.20	1935.80	28.63552	(91070508)	1568.80	1908.20	43.21385c	(91110924)
1626.30	1883.70	60.28858c	(91112124)	1690.10	1865.60	60.71416	(91122508)
1550.70	1827.30	125.18590	(91070924)	1611.40	1829.40	264.29690c	(91112124)
1665.70	1827.30	115.87920c	(91051424)	1561.30	1771.20	604.51790c	(91020108)
1605.00	1773.30	2617.11700c	(91030808)	1648.60	1775.50	361.69150	(91051208)
1562.40	1740.40	559.48050c	(91071108)	1602.80	1742.50	1772.23700	(91081324)
1643.30	1744.60	246.53090	(91042424)	1031.80	2255.40	2.42888c	(91082524)
1098.20	2119.20	3.34743	(91090724)	1167.90	1986.40	8.80912c	(91110924)
1231.10	1860.30	12.76848c	(91020108)	1294.20	1730.80	15.08362	(91090208)
1367.20	1598.00	32.75876	(91051008)	1437.00	1461.10	14.02232c	(91060908)
1927.00	2312.00	3.61172c	(91110908)	1832.00	2348.00	8.27378	(91101608)
1740.00	2381.00	4.02841c	(91112608)	1641.00	2414.00	3.23867c	(91082908)
1546.00	2451.00	5.66379	(91102024)	1418.00	2495.00	2.85144	(91122524)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_4B ***
INCLUDING SOURCE(S): AREA4B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	4.95761c	(91092424)	1571.40	1578.20	4.33010c	(91060808)
1570.30	2086.50	26.65942c	(91092824)	1612.90	2151.40	58.69706	(91051008)
1650.20	2219.50	42.24060c	(91071108)	1665.10	2043.90	20.96077c	(91072608)
1706.60	2117.40	45.53735c	(91072608)	1752.40	2207.80	202.89550c	(91060908)
1748.10	2009.90	17.10676c	(91060724)	1788.60	2085.40	40.48485c	(91061708)
1829.00	2167.40	78.38715	(91080324)	1715.00	2321.80	76.02861	(91090724)
1796.90	2291.00	1316.04500	(91101608)	1880.80	2259.10	65.17927	(91120124)
1685.30	2277.10	72.69532c	(91101024)	1765.00	2251.60	1231.56100c	(91092824)
1856.40	2215.40	226.70880c	(91081108)	1376.10	2417.00	10.06310	(91050924)
1501.70	2372.30	19.11696	(91050924)	1616.70	2330.80	47.52333	(91050924)
1331.30	2310.60	5.61472c	(91101024)	1450.60	2272.30	13.05271c	(91031608)
1564.50	2235.00	29.73122	(91031108)	1281.30	2214.80	5.98119	(91090208)
1392.00	2165.90	8.33468	(91080724)	1497.40	2113.30	16.54235c	(91081408)
1580.50	1998.60	15.88220c	(91060608)	1656.10	1965.60	12.74422c	(91062508)
1724.20	1935.80	11.41471c	(91092424)	1568.80	1908.20	10.14854c	(91060908)
1626.30	1883.70	7.98577c	(91062508)	1690.10	1865.60	7.70953c	(91081824)
1550.70	1827.30	6.76259c	(91072608)	1611.40	1829.40	6.15409c	(91040208)
1665.70	1827.30	6.84174	(91061224)	1561.30	1771.20	6.89997c	(91060708)
1605.00	1773.30	4.85940c	(91060808)	1648.60	1775.50	6.03475	(91061224)
1562.40	1740.40	4.88195c	(91062508)	1602.80	1742.50	6.12200c	(91060808)
1643.30	1744.60	5.07485	(91061224)	1031.80	2255.40	4.49149c	(91052208)
1098.20	2119.20	2.71174c	(91101024)	1167.90	1986.40	5.09693c	(91071108)
1231.10	1860.30	3.36084	(91051008)	1294.20	1730.80	4.42032c	(91062008)
1367.20	1598.00	2.43271c	(91060908)	1437.00	1461.10	2.43685c	(91062508)
1927.00	2312.00	53.42395	(91051208)	1832.00	2348.00	93.64526c	(91110908)
1740.00	2381.00	61.87344c	(91082924)	1641.00	2414.00	18.05053	(91042724)
1546.00	2451.00	8.38255	(91090724)	1418.00	2495.00	6.89857c	(91121908)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_5B ***
INCLUDING SOURCE(S): AREA5B ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	5.13504c	(91060808)	1571.40	1578.20	2.46394c	(91040208)
1570.30	2086.50	14.95334c	(91092824)	1612.90	2151.40	19.20742	(91051008)
1650.20	2219.50	24.32965c	(91081408)	1665.10	2043.90	12.12725c	(91060608)
1706.60	2117.40	22.54840c	(91060608)	1752.40	2207.80	46.56667c	(91062008)
1748.10	2009.90	8.83436c	(91040208)	1788.60	2085.40	24.78600c	(91060808)
1829.00	2167.40	36.29293c	(91081824)	1715.00	2321.80	47.42110	(91090208)
1796.90	2291.00	203.60950	(91051008)	1880.80	2259.10	156.08570	(91081324)
1685.30	2277.10	25.31162	(91092808)	1765.00	2251.60	82.48832c	(91092824)
1856.40	2215.40	60.81792c	(91060724)	1376.10	2417.00	7.00110c	(91062008)
1501.70	2372.30	7.89741c	(91101024)	1616.70	2330.80	32.77315c	(91052208)
1331.30	2310.60	9.55402c	(91052208)	1450.60	2272.30	9.74792	(91031108)
1564.50	2235.00	8.99771c	(91071108)	1281.30	2214.80	3.49982c	(91101024)
1392.00	2165.90	4.45001c	(91071108)	1497.40	2113.30	12.70457c	(91090608)
1580.50	1998.60	9.03616c	(91060608)	1656.10	1965.60	10.93453c	(91060908)
1724.20	1935.80	6.32405c	(91092908)	1568.80	1908.20	6.23690c	(91060608)
1626.30	1883.70	6.14407c	(91060908)	1690.10	1865.60	5.09578c	(91040208)
1550.70	1827.30	3.37739c	(91060908)	1611.40	1829.40	5.83787c	(91072608)
1665.70	1827.30	4.81710c	(91040208)	1561.30	1771.20	4.60212c	(91060908)
1605.00	1773.30	5.74620c	(91060708)	1648.60	1775.50	4.07032c	(91040208)
1562.40	1740.40	4.35112c	(91072608)	1602.80	1742.50	5.16520c	(91060708)
1643.30	1744.60	3.44894c	(91040208)	1031.80	2255.40	2.59743	(91090208)
1098.20	2119.20	2.63716	(91092808)	1167.90	1986.40	3.49476c	(91071108)
1231.10	1860.30	2.44675c	(91071008)	1294.20	1730.80	2.57323c	(91062008)
1367.20	1598.00	2.20414c	(91060608)	1437.00	1461.10	2.33090c	(91072608)
1927.00	2312.00	122.31270	(91120108)	1832.00	2348.00	575.03040c	(91020108)
1740.00	2381.00	74.67915c	(91020108)	1641.00	2414.00	27.68529c	(91020108)
1546.00	2451.00	14.05444	(91050924)	1418.00	2495.00	7.86117	(91050924)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1	1ST HIGHEST VALUE IS 36.08434	AT (1706.60, 2117.40, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 5.97594	AT (1752.40, 2207.80, .00, .00)	DC	NA
AREA_2	1ST HIGHEST VALUE IS 41.51574	AT (1626.30, 1883.70, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 7.85076	AT (1656.10, 1965.60, .00, .00)	DC	NA
AREA_3	1ST HIGHEST VALUE IS 119.73240	AT (1605.00, 1773.30, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 79.27129	AT (1602.80, 1742.50, .00, .00)	DC	NA
AREA_4B	1ST HIGHEST VALUE IS 52.34149	AT (1796.90, 2291.00, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 28.53840	AT (1765.00, 2251.60, .00, .00)	DC	NA
AREA_5B	1ST HIGHEST VALUE IS 10.09128	AT (1832.00, 2348.00, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 4.13762	AT (1880.80, 2259.10, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** ISCST3 - VERSION 96113 *** *** American Chemical Services (ACS) *** 07/05/98
*** *** 18:10:51

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1	HIGH 1ST HIGH VALUE IS 3675.27500	ON 91081321:	AT (1706.60, 2117.40, .00, .00)	DC	NA
AREA_2	HIGH 1ST HIGH VALUE IS 7037.20200	ON 91060805:	AT (1626.30, 1883.70, .00, .00)	DC	NA
AREA_3	HIGH 1ST HIGH VALUE IS 8011.63900	ON 91030804:	AT (1605.00, 1773.30, .00, .00)	DC	NA
AREA_4B	HIGH 1ST HIGH VALUE IS 5017.63000	ON 91062004:	AT (1765.00, 2251.60, .00, .00)	DC	NA
AREA_5B	HIGH 1ST HIGH VALUE IS 1722.79800	ON 91071601:	AT (1832.00, 2348.00, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** ISCST3 - VERSION 96113 *** *** American Chemical Services (ACS) *** 07/05/98
*** *** 18:10:51
PAGE 24

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_1 HIGH 1ST HIGH VALUE IS	1102.97900	ON 91081324:	AT (1706.60, 2117.40, .00, .00)	DC	NA
AREA_2 HIGH 1ST HIGH VALUE IS	1351.28600c	ON 91092908:	AT (1626.30, 1883.70, .00, .00)	DC	NA
AREA_3 HIGH 1ST HIGH VALUE IS	2617.11700c	ON 91030808:	AT (1605.00, 1773.30, .00, .00)	DC	NA
AREA_4B HIGH 1ST HIGH VALUE IS	1316.04500	ON 91101608:	AT (1796.90, 2291.00, .00, .00)	DC	NA
AREA_5B HIGH 1ST HIGH VALUE IS	575.03040c	ON 91020108:	AT (1832.00, 2348.00, .00, .00)	DC	NA

*** RECEPTOR TYPES: DC = DISCCART

*** ISCST3 - VERSION 96113 *** *** American Chemical Services (ACS) *** 07/05/98
*** *** 18:10:51
PAGE 25

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 385 Informational Message(s)

A Total of 385 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

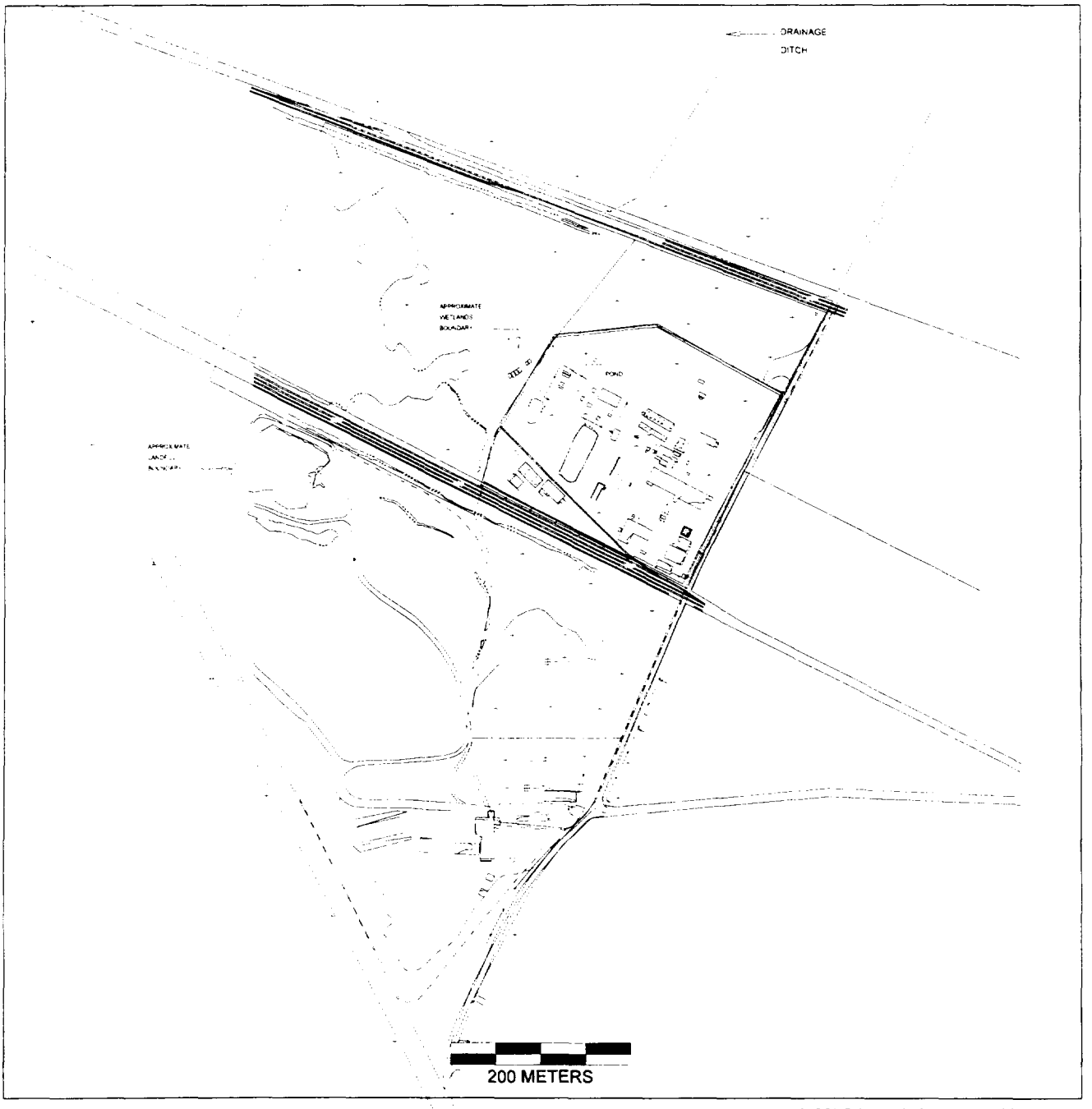
****
*** ISCST3 Finishes Successfully ***
****

ATTACHMENT 3

ISCST3 Model Output File for Emissions During Construction

American Chemical Services (ACS)

Construction



S:\SONG\ACS\RISKCALC\AIR\ACSCONST.DAT

IBM-PC VERSION (3.04) ISCST3R
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Run Began on 7/05/1998 at 14:17:18

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** BREEZE AIR ISCST3 - C:\ISCST3\ACSCONST.DAT
** Trinity Consultants Incorporated, Dallas, TX

CO STARTING
CO TITLEONE  American Chemical Services (ACS)
CO MODELOPT  DFAULT  CONC  RURAL
CO AVERTIME  1  8  ANNUAL
CO POLLUTID  OTHER
CO TERRHGTS  FLAT
CO RUNORNOT  RUN
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
SO LOCATION  AREA3  AREA  1585.0  1740.0  0
** SRCDESCR  Kapica-Pazmey
SO LOCATION  AREA2  AREA  1608.0  1879.0  0
** SRCDESCR  OFFSCA
SO SRCPARAM  AREA3  1.000000E+00  0  30  30  0  0
SO SRCPARAM  AREA2  1.000000E+00  0  30  30  0  0
SO CONCUNIT  1.0E+03  GRAMS/SEC  MILLIGRAMS/M**3
SO SRCGROUP  AREA_2 AREA2
SO SRCGROUP  AREA_3 AREA3
SO FINISHED

RE STARTING
RE DISCCART  1686.4  1729.0
** RCPDESCR  Area 5A_1 - Reder
RE DISCCART  1571.4  1578.2
** RCPDESCR  Area 5A_2 - Arbogast
RE DISCCART  1570.3  2086.5
** RCPDESCR  Area 1_1
RE DISCCART  1612.9  2151.4
** RCPDESCR  Area 1_2
RE DISCCART  1650.2  2219.5
** RCPDESCR  Area 1_3
RE DISCCART  1665.1  2043.9
** RCPDESCR  Area 1_4
RE DISCCART  1706.6  2117.4
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** RCPDESCR  Area 1_5
RE DISCCART  1752.4  2207.8
** RCPDESCR  Area 1_6
RE DISCCART  1748.1  2009.9
** RCPDESCR  Area 1_7
RE DISCCART  1788.6  2085.4
** RCPDESCR  Area 1_8
RE DISCCART  1829.0  2167.4
** RCPDESCR  Area 1_9
RE DISCCART  1715.0  2321.8
** RCPDESCR  Area 4B_1
RE DISCCART  1796.9  2291.0
** RCPDESCR  Area 4B_2
RE DISCCART  1880.8  2259.1
** RCPDESCR  Area 4B_3
RE DISCCART  1685.3  2277.1
** RCPDESCR  Area 4B_4
RE DISCCART  1765.0  2251.6
** RCPDESCR  Area 4B_5
RE DISCCART  1856.4  2215.4
** RCPDESCR  Area 4B_6
RE DISCCART  1376.1  2417.0
** RCPDESCR  Area 4A_1
RE DISCCART  1501.7  2372.3
** RCPDESCR  Area 4A_2
RE DISCCART  1616.7  2330.8
** RCPDESCR  Area 4A_3
RE DISCCART  1331.3  2310.6
** RCPDESCR  Area 4A_4
RE DISCCART  1450.6  2272.3
** RCPDESCR  Area 4A_5
RE DISCCART  1564.5  2235.0
** RCPDESCR  Area 4A_6
RE DISCCART  1281.3  2214.8
** RCPDESCR  Area 4A_7
RE DISCCART  1392.0  2165.9
** RCPDESCR  Area 4A_8
RE DISCCART  1497.4  2113.3
** RCPDESCR  Area 4A_9
RE DISCCART  1580.5  1998.6
** RCPDESCR  Area 2_1
RE DISCCART  1656.1  1965.6
** RCPDESCR  Area 2_2
RE DISCCART  1724.2  1935.8
** RCPDESCR  Area 2_3
RE DISCCART  1568.8  1908.2
```

```
** RCPDESCR  Area 2_4
RE DISCCART  1626.3  1883.7
** RCPDESCR  Area 2_5
RE DISCCART  1690.1  1865.6
** RCPDESCR  Area 2_6
RE DISCCART  1550.7  1827.3
** RCPDESCR  Area 2_7
RE DISCCART  1611.4  1829.4
** RCPDESCR  Area 2_8
RE DISCCART  1665.7  1827.3
** RCPDESCR  Area 2_9
RE DISCCART  1561.3  1771.2
** RCPDESCR  Area 3_1
RE DISCCART  1605.0  1773.3
** RCPDESCR  Area 3_2
RE DISCCART  1648.6  1775.5
** RCPDESCR  Area 3_3
RE DISCCART  1562.4  1740.4
** RCPDESCR  Area 3_4
RE DISCCART  1602.8  1742.5
** RCPDESCR  Area 3_5
RE DISCCART  1643.3  1744.6
** RCPDESCR  Area 3_6
RE DISCCART  1031.8  2255.4
** RCPDESCR  Area 6_1
RE DISCCART  1098.2  2119.2
** RCPDESCR  Area 6_2
RE DISCCART  1167.9  1986.4
** RCPDESCR  Area 6_3
RE DISCCART  1231.1  1860.3
** RCPDESCR  Area 6_4
RE DISCCART  1294.2  1730.8
** RCPDESCR  Area 6_5
RE DISCCART  1367.2  1598.0
** RCPDESCR  Area 6_6
RE DISCCART  1437.0  1461.1
** RCPDESCR  Area 6_7
RE DISCCART  1927.0  2312.0
** RCPDESCR  Area 5B_1
RE DISCCART  1832.0  2348.0
** RCPDESCR  Area 5B_2
RE DISCCART  1740.0  2381.0
** RCPDESCR  Area 5B_3
RE DISCCART  1641.0  2414.0
** RCPDESCR  Area 5B_4
RE DISCCART  1546.0  2451.0
```

```
** RCPDESCR  Area 5B_5
RE DISCCART  1418.0  2495.0
** RCPDESCR  Area 5B_6
RE FINISHED

ME STARTING
ME INPUTFIL  S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT
ME ANEMHGHT  10.0  METERS
ME SURFDATA  14848  1991
ME UAIRDATA  14826  1991
ME STARTEND  91  03  01  1  91  11  30  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  ALLAVE  FIRST
OU POSTFILE  ANNUAL  AREA_2  PLOT  C:\ISCST3\CONST2.PST
OU POSTFILE  ANNUAL  AREA_3  PLOT  C:\ISCST3\CONST3.PST
OU FINISHED

************************************
*** SETUP Finishes Successfully ***
************************************

 *** ISCST3 - VERSION 96113 ***     ***  American Chemical Services (ACS)                                  ***        07/05/98
                                    ***                                                                    ***        14:17:18
                                                                                                                      PAGE   1
**MODELOPTs: CONC                          RURAL  FLAT          DFAULT

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE = F
**Model Uses NO WET DEPLETION.  WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
          1. Final Plume Rise.
          2. Stack-tip Downwash.
          3. Buoyancy-induced Dispersion.
```

4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR
and Calculates ANNUAL Averages
**This Run Includes: 2 Source(s); 2 Source Group(s); and 54 Receptor(s)
**The Model Assumes A Pollutant Type of: OTHER
**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ; Rot. Angle = .0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 1000.0
Output Units = MILLIGRAMS/M**3

**Input Runstream File: C:\ISCST3\ACSCONST.DAT ; **Output Print File: C:\ISCST3\ACSCONST.LST

**MODELOPTs: CONC RURAL FLAT DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
AREA3	0	.10000E+01	1585.0	1740.0	.0	.00	30.00	30.00	.00	.00	

AREA2	0	.10000E+01	1608.0	1879.0	.0	.00	30.00	30.00	.00	.00

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
AREA_2	AREA2 ,
AREA_3	AREA3 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(1686.4,	1729.0,	.0,	.0);	(1571.4,	1578.2,	.0,	.0);
(1570.3,	2086.5,	.0,	.0);	(1612.9,	2151.4,	.0,	.0);
(1650.2,	2219.5,	.0,	.0);	(1665.1,	2043.9,	.0,	.0);
(1706.6,	2117.4,	.0,	.0);	(1752.4,	2207.8,	.0,	.0);
(1748.1,	2009.9,	.0,	.0);	(1788.6,	2085.4,	.0,	.0);
(1829.0,	2167.4,	.0,	.0);	(1715.0,	2321.8,	.0,	.0);
(1796.9,	2291.0,	.0,	.0);	(1880.8,	2259.1,	.0,	.0);
(1685.3,	2277.1,	.0,	.0);	(1765.0,	2251.6,	.0,	.0);
(1856.4,	2215.4,	.0,	.0);	(1376.1,	2417.0,	.0,	.0);
(1501.7,	2372.3,	.0,	.0);	(1616.7,	2330.8,	.0,	.0);
(1331.3,	2310.6,	.0,	.0);	(1450.6,	2272.3,	.0,	.0);
(1564.5,	2235.0,	.0,	.0);	(1281.3,	2214.8,	.0,	.0);
(1392.0,	2165.9,	.0,	.0);	(1497.4,	2113.3,	.0,	.0);
(1580.5,	1998.6,	.0,	.0);	(1656.1,	1965.6,	.0,	.0);
(1724.2,	1935.8,	.0,	.0);	(1568.8,	1908.2,	.0,	.0);
(1626.3,	1883.7,	.0,	.0);	(1690.1,	1865.6,	.0,	.0);
(1550.7,	1827.3,	.0,	.0);	(1611.4,	1829.4,	.0,	.0);
(1665.7,	1827.3,	.0,	.0);	(1561.3,	1771.2,	.0,	.0);
(1605.0,	1773.3,	.0,	.0);	(1648.6,	1775.5,	.0,	.0);
(1562.4,	1740.4,	.0,	.0);	(1602.8,	1742.5,	.0,	.0);
(1643.3,	1744.6,	.0,	.0);	(1031.8,	2255.4,	.0,	.0);
(1098.2,	2119.2,	.0,	.0);	(1167.9,	1986.4,	.0,	.0);
(1231.1,	1860.3,	.0,	.0);	(1294.2,	1730.8,	.0,	.0);
(1367.2,	1598.0,	.0,	.0);	(1437.0,	1461.1,	.0,	.0);
(1927.0,	2312.0,	.0,	.0);	(1832.0,	2348.0,	.0,	.0);
(1740.0,	2381.0,	.0,	.0);	(1641.0,	2414.0,	.0,	.0);
(1546.0,	2451.0,	.0,	.0);	(1418.0,	2495.0,	.0,	.0);

**MODELOPTs: CONC   RURAL FLAT   DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 91 3 1 1
AND END DATE: 91 11 30 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00

D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 14848 UPPER AIR STATION NO.: 14826
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1991 YEAR: 1991

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
91	1	1	1	11.0	5.14	262.6	5	745.0	426.0	.0000	.0	.0000	0	.00
91	1	1	2	8.0	5.14	263.1	5	731.9	426.0	.0000	.0	.0000	0	.00
91	1	1	3	34.0	5.66	263.1	4	718.7	718.7	.0000	.0	.0000	0	.00
91	1	1	4	13.0	4.63	263.7	5	705.6	426.0	.0000	.0	.0000	0	.00
91	1	1	5	13.0	4.63	263.1	5	692.4	426.0	.0000	.0	.0000	0	.00
91	1	1	6	32.0	3.60	263.7	5	679.2	426.0	.0000	.0	.0000	0	.00
91	1	1	7	25.0	3.60	263.1	5	666.1	426.0	.0000	.0	.0000	0	.00
91	1	1	8	3.0	4.12	263.7	5	652.9	426.0	.0000	.0	.0000	0	.00
91	1	1	9	357.0	6.17	264.8	4	70.6	444.2	.0000	.0	.0000	0	.00
91	1	1	10	11.0	5.66	265.9	4	171.3	470.2	.0000	.0	.0000	0	.00
91	1	1	11	24.0	5.66	267.6	4	272.0	496.1	.0000	.0	.0000	0	.00
91	1	1	12	16.0	5.66	269.3	4	372.7	522.1	.0000	.0	.0000	0	.00
91	1	1	13	23.0	7.20	270.9	4	473.3	548.0	.0000	.0	.0000	0	.00
91	1	1	14	19.0	5.66	272.6	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	15	42.0	7.20	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	16	34.0	5.14	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	17	21.0	5.66	272.0	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	18	27.0	4.12	270.9	5	578.0	597.4	.0000	.0	.0000	0	.00
91	1	1	19	24.0	4.63	270.4	5	584.0	632.0	.0000	.0	.0000	0	.00
91	1	1	20	17.0	3.60	269.3	5	589.9	666.6	.0000	.0	.0000	0	.00
91	1	1	21	30.0	4.12	269.8	5	595.9	701.2	.0000	.0	.0000	0	.00
91	1	1	22	52.0	3.60	269.3	5	601.8	735.8	.0000	.0	.0000	0	.00
91	1	1	23	60.0	2.57	268.1	6	607.8	770.4	.0000	.0	.0000	0	.00
91	1	1	24	50.0	3.09	267.6	5	613.7	805.0	.0000	.0	.0000	0	.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.

FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (6600 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	33.01768	1571.40	1578.20	10.79095
1570.30	2086.50	14.24301	1612.90	2151.40	17.86534
1650.20	2219.50	13.21052	1665.10	2043.90	66.28300
1706.60	2117.40	31.49229	1752.40	2207.80	16.11413
1748.10	2009.90	46.07403	1788.60	2085.40	22.39270
1829.00	2167.40	12.71566	1715.00	2321.80	9.11070
1796.90	2291.00	10.35947	1880.80	2259.10	8.00725
1685.30	2277.10	11.28546	1765.00	2251.60	12.93890
1856.40	2215.40	9.80204	1376.10	2417.00	2.17320
1501.70	2372.30	2.81086	1616.70	2330.80	7.28520
1331.30	2310.60	2.51773	1450.60	2272.30	3.93458
1564.50	2235.00	7.06102	1281.30	2214.80	3.22103
1392.00	2165.90	5.00917	1497.40	2113.30	8.94968
1580.50	1998.60	40.12411	1656.10	1965.60	233.53200
1724.20	1935.80	69.12730	1568.80	1908.20	255.16390
1626.30	1883.70	8550.17500	1690.10	1865.60	86.66372
1550.70	1827.30	91.39446	1611.40	1829.40	197.94320
1665.70	1827.30	117.20600	1561.30	1771.20	33.55806
1605.00	1773.30	63.21255	1648.60	1775.50	73.30949
1562.40	1740.40	26.83180	1602.80	1742.50	42.64893
1643.30	1744.60	52.38328	1031.80	2255.40	2.07548
1098.20	2119.20	3.57991	1167.90	1986.40	4.73280
1231.10	1860.30	7.06315	1294.20	1730.80	8.91107
1367.20	1598.00	5.42504	1437.00	1461.10	3.96020
1927.00	2312.00	6.09072	1832.00	2348.00	8.06586
1740.00	2381.00	7.51446	1641.00	2414.00	5.25153
1546.00	2451.00	3.21744	1418.00	2495.00	1.45602

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (6600 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1686.40	1729.00	58.10864	1571.40	1578.20	30.60055
1570.30	2086.50	9.75637	1612.90	2151.40	8.59599
1650.20	2219.50	7.45709	1665.10	2043.90	18.93030
1706.60	2117.40	14.22767	1752.40	2207.80	9.40965
1748.10	2009.90	19.61441	1788.60	2085.40	12.59405
1829.00	2167.40	8.74765	1715.00	2321.80	5.47421
1796.90	2291.00	6.54648	1880.80	2259.10	6.09917
1685.30	2277.10	6.55376	1765.00	2251.60	8.06282
1856.40	2215.40	7.16892	1376.10	2417.00	1.21570
1501.70	2372.30	2.53678	1616.70	2330.80	4.37497
1331.30	2310.60	1.90946	1450.60	2272.30	2.13156
1564.50	2235.00	5.32845	1281.30	2214.80	2.10067
1392.00	2165.90	3.12123	1497.40	2113.30	4.21840
1580.50	1998.60	17.72575	1656.10	1965.60	35.71243
1724.20	1935.80	30.00141	1568.80	1908.20	27.61824
1626.30	1883.70	84.62263	1690.10	1865.60	64.82876
1550.70	1827.30	66.48687	1611.40	1829.40	223.41340
1665.70	1827.30	131.25590	1561.30	1771.20	417.85540
1605.00	1773.30	3339.80700	1648.60	1775.50	271.13550
1562.40	1740.40	528.04900	1602.80	1742.50	7553.76700
1643.30	1744.60	220.78710	1031.80	2255.40	1.41350
1098.20	2119.20	2.20635	1167.90	1986.40	4.02224
1231.10	1860.30	6.47382	1294.20	1730.80	11.12775
1367.20	1598.00	16.69344	1437.00	1461.10	5.86761
1927.00	2312.00	4.77918	1832.00	2348.00	5.25673
1740.00	2381.00	4.62185	1641.00	2414.00	3.48795
1546.00	2451.00	2.69596	1418.00	2495.00	1.31922

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	6319.96300	(91060701)	1571.40	1578.20	2069.96400	(91061724)
1570.30	2086.50	2740.35200	(91110906)	1612.90	2151.40	2716.00600	(91101520)
1650.20	2219.50	1944.69400	(91032422)	1665.10	2043.90	7038.18200	(91030804)
1706.60	2117.40	2994.52700	(91101606)	1752.40	2207.80	1413.07400	(91101603)
1748.10	2009.90	5874.58900	(91051422)	1788.60	2085.40	4010.34000	(91030805)
1829.00	2167.40	1788.23800	(91071701)	1715.00	2321.80	1357.20400	(91102508)
1796.90	2291.00	1168.64500	(91100723)	1880.80	2259.10	1302.08800	(91081802)
1685.30	2277.10	1525.49500	(91070403)	1765.00	2251.60	1309.30500	(91101606)
1856.40	2215.40	1555.24800	(91071701)	1376.10	2417.00	836.21900	(91042804)
1501.70	2372.30	798.09660	(91110906)	1616.70	2330.80	1270.14500	(91030422)
1331.30	2310.60	1467.82300	(91070922)	1450.60	2272.30	1202.22900	(91042804)
1564.50	2235.00	1673.47900	(91070222)	1281.30	2214.80	911.06730	(91050921)
1392.00	2165.90	1581.52900	(91031622)	1497.40	2113.30	2203.32100	(91082522)
1580.50	1998.60	6479.59500	(91082921)	1656.10	1965.60	9217.73900	(91030804)
1724.20	1935.80	9419.85900	(91072505)	1568.80	1908.20	16868.67000	(91062006)
1626.30	1883.70	66300.55000	(91041722)	1690.10	1865.60	8295.64100	(91042423)
1550.70	1827.30	11113.63000	(91060905)	1611.40	1829.40	14464.60000	(91061905)
1665.70	1827.30	9517.55500	(91041021)	1561.30	1771.20	8262.80300	(91041722)
1605.00	1773.30	7472.02300	(91061905)	1648.60	1775.50	8713.82800	(91060624)
1562.40	1740.40	5124.48300	(91041722)	1602.80	1742.50	5819.65400	(91061905)
1643.30	1744.60	7109.47100	(91081321)	1031.80	2255.40	641.63900	(91031101)
1098.20	2119.20	895.43030	(91050924)	1167.90	1986.40	1809.72600	(91062006)
1231.10	1860.30	1173.65500	(91051323)	1294.20	1730.80	2139.10700	(91071122)
1367.20	1598.00	2256.42400	(91070923)	1437.00	1461.10	1410.42900	(91041722)
1927.00	2312.00	1050.46200	(91071701)	1832.00	2348.00	1096.06900	(91100723)
1740.00	2381.00	1223.89500	(91102508)	1641.00	2414.00	1036.77800	(91090704)
1546.00	2451.00	975.16780	(91070924)	1418.00	2495.00	495.13860	(91081806)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	7610.51400	(91042423)	1571.40	1578.20	4049.11200	(91061724)
1570.30	2086.50	2807.67500	(91070924)	1612.90	2151.40	1545.29500	(91090704)
1650.20	2219.50	1146.33200	(91082806)	1665.10	2043.90	2289.94800	(91112607)
1706.60	2117.40	2464.63200	(91030804)	1752.40	2207.80	1143.17700	(91030803)
1748.10	2009.90	2239.57800	(91110905)	1788.60	2085.40	1587.70700	(91030421)
1829.00	2167.40	1205.34800	(91030421)	1715.00	2321.80	1016.86900	(91102508)
1796.90	2291.00	897.24910	(91101606)	1880.80	2259.10	884.77860	(91030421)
1685.30	2277.10	961.79380	(91070403)	1765.00	2251.60	1014.99000	(91030803)
1856.40	2215.40	1017.71600	(91030421)	1376.10	2417.00	406.55010	(91081806)
1501.70	2372.30	532.66720	(91110924)	1616.70	2330.80	877.01880	(91090704)
1331.30	2310.60	794.43080	(91042804)	1450.60	2272.30	655.44600	(91110906)
1564.50	2235.00	1314.82600	(91070924)	1281.30	2214.80	1185.89400	(91070922)
1392.00	2165.90	1172.16900	(91042804)	1497.40	2113.30	1182.62500	(91110906)
1580.50	1998.60	3981.87300	(91070924)	1656.10	1965.60	4765.10500	(91030804)
1724.20	1935.80	3357.45300	(91081802)	1568.80	1908.20	4629.05900	(91070222)
1626.30	1883.70	6360.99500	(91030804)	1690.10	1865.60	6785.53500	(91030805)
1550.70	1827.30	12767.21000	(91070922)	1611.40	1829.40	11523.94000	(91030804)
1665.70	1827.30	12394.47000	(91030805)	1561.30	1771.20	22647.64000	(91062006)
1605.00	1773.30	51624.92000	(91030804)	1648.60	1775.50	18755.52000	(91072505)
1562.40	1740.40	23187.50000	(91071122)	1602.80	1742.50	67632.21000	(91041722)
1643.30	1744.60	13705.47000	(91042423)	1031.80	2255.40	572.20530	(91082521)
1098.20	2119.20	717.44280	(91042805)	1167.90	1986.40	1066.76000	(91070602)
1231.10	1860.30	1624.93100	(91071601)	1294.20	1730.80	1907.76300	(91051323)
1367.20	1598.00	3755.46700	(91051003)	1437.00	1461.10	2747.84000	(91060902)
1927.00	2312.00	715.96340	(91110905)	1832.00	2348.00	623.08260	(91101606)
1740.00	2381.00	988.23760	(91102508)	1641.00	2414.00	701.61800	(91032422)
1546.00	2451.00	752.65480	(91070924)	1418.00	2495.00	399.75440	(91082606)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	1053.32700c	(91060708)	1571.40	1578.20	345.34450c	(91081824)
1570.30	2086.50	498.66990	(91052224)	1612.90	2151.40	877.63850	(91102024)
1650.20	2219.50	432.60870c	(91082908)	1665.10	2043.90	1940.24800c	(91030808)
1706.60	2117.40	1277.99900	(91101608)	1752.40	2207.80	852.16830	(91101608)
1748.10	2009.90	1183.81000c	(91030808)	1788.60	2085.40	588.71450c	(91030808)
1829.00	2167.40	386.97810	(91070508)	1715.00	2321.80	238.95920c	(91112608)
1796.90	2291.00	540.08800	(91101608)	1880.80	2259.10	278.90360	(91070508)
1685.30	2277.10	449.27640c	(91112124)	1765.00	2251.60	680.73540	(91101608)
1856.40	2215.40	334.70110	(91070508)	1376.10	2417.00	120.73770	(91042808)
1501.70	2372.30	133.01610c	(91110908)	1616.70	2330.80	317.52600c	(91102008)
1331.30	2310.60	183.47790	(91070924)	1450.60	2272.30	178.69130c	(91111008)
1564.50	2235.00	524.13580c	(91110924)	1281.30	2214.80	115.92980	(91050924)
1392.00	2165.90	246.03140c	(91031608)	1497.40	2113.30	403.05740c	(91082524)
1580.50	1998.60	1079.93200c	(91082924)	1656.10	1965.60	5320.99200	(91101608)
1724.20	1935.80	2276.97600c	(91072508)	1568.80	1908.20	4278.34700c	(91062008)
1626.30	1883.70	51687.79000c	(91081108)	1690.10	1865.60	2122.67200c	(91032508)
1550.70	1827.30	3070.13400c	(91062008)	1611.40	1829.40	4051.21700c	(91081108)
1665.70	1827.30	3966.30700c	(91080408)	1561.30	1771.20	1394.41900c	(91072608)
1605.00	1773.30	1603.90100c	(91081108)	1648.60	1775.50	1852.05500	(91062524)
1562.40	1740.40	1100.60900c	(91092908)	1602.80	1742.50	1040.91400c	(91081108)
1643.30	1744.60	1315.00700	(91062524)	1031.80	2255.40	100.90150c	(91110924)
1098.20	2119.20	169.28210	(91050924)	1167.90	1986.40	334.60830c	(91062008)
1231.10	1860.30	340.57880	(91090208)	1294.20	1730.80	429.07220c	(91071108)
1367.20	1598.00	379.05760c	(91060608)	1437.00	1461.10	228.46880c	(91060708)
1927.00	2312.00	218.84980	(91070508)	1832.00	2348.00	362.44740	(91101608)
1740.00	2381.00	259.61870c	(91112608)	1641.00	2414.00	178.15870c	(91102008)
1546.00	2451.00	204.07620c	(91110924)	1418.00	2495.00	85.24645	(91052224)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_3 ***
INCLUDING SOURCE(S): AREA3 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1686.40	1729.00	2119.31400	(91042424)	1571.40	1578.20	846.37550c	(91081824)
1570.30	2086.50	569.31560	(91102024)	1612.90	2151.40	293.81100c	(91102008)
1650.20	2219.50	307.94540c	(91112124)	1665.10	2043.90	537.70860c	(91112608)
1706.60	2117.40	619.15480c	(91030508)	1752.40	2207.80	303.41250c	(91030808)
1748.10	2009.90	376.89450	(91071708)	1788.60	2085.40	249.42880	(91071708)
1829.00	2167.40	172.19250c	(91030424)	1715.00	2321.80	152.50100c	(91112124)
1796.90	2291.00	288.21230	(91101608)	1880.80	2259.10	126.39690c	(91030424)
1685.30	2277.10	261.91910c	(91112124)	1765.00	2251.60	276.44530c	(91030808)
1856.40	2215.40	145.38800c	(91030424)	1376.10	2417.00	73.43285	(91052224)
1501.70	2372.30	211.51160c	(91110924)	1616.70	2330.80	167.96500c	(91102008)
1331.30	2310.60	114.93510	(91042808)	1450.60	2272.30	109.24100c	(91110908)
1564.50	2235.00	366.42080	(91102024)	1281.30	2214.80	148.23680	(91070924)
1392.00	2165.90	174.98410	(91042808)	1497.40	2113.30	197.10420c	(91110908)
1580.50	1998.60	952.36500	(91102024)	1656.10	1965.60	1213.64600c	(91030508)
1724.20	1935.80	792.96010	(91070508)	1568.80	1908.20	1305.92300c	(91110924)
1626.30	1883.70	2010.92900c	(91030808)	1690.10	1865.60	1329.91300	(91071708)
1550.70	1827.30	2273.62900c	(91111008)	1611.40	1829.40	4067.59900c	(91112124)
1665.70	1827.30	2669.72200c	(91030808)	1561.30	1771.20	6363.82300	(91050924)
1605.00	1773.30	33426.86000c	(91030808)	1648.60	1775.50	5824.30400	(91051208)
1562.40	1740.40	11416.61000	(91051008)	1602.80	1742.50	52457.64000c	(91081108)
1643.30	1744.60	5925.59700	(91042424)	1031.80	2255.40	81.74361c	(91082524)
1098.20	2119.20	111.05950	(91090724)	1167.90	1986.40	305.87110c	(91110924)
1231.10	1860.30	270.82170c	(91071608)	1294.20	1730.80	569.20590c	(91052208)
1367.20	1598.00	1030.89500	(91051008)	1437.00	1461.10	457.97330c	(91060908)
1927.00	2312.00	119.32720c	(91110908)	1832.00	2348.00	286.66020	(91101608)
1740.00	2381.00	140.08870c	(91112608)	1641.00	2414.00	113.44470c	(91082908)
1546.00	2451.00	196.22900	(91102024)	1418.00	2495.00	61.31570c	(91110908)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (6600 HRS) RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
AREA_2	1ST HIGHEST VALUE IS	8550.17500 AT (	1626.30,	1883.70,	.00,	.00)	DC	NA
	2ND HIGHEST VALUE IS	255.16390 AT (	1568.80,	1908.20,	.00,	.00)	DC	NA
AREA_3	1ST HIGHEST VALUE IS	7553.76700 AT (	1602.80,	1742.50,	.00,	.00)	DC	NA
	2ND HIGHEST VALUE IS	3339.80700 AT (	1605.00,	1773.30,	.00,	.00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_2 HIGH 1ST HIGH VALUE IS	66300.55000	ON 91041722:	AT (1626.30, 1883.70, .00, .00)	DC	NA
AREA_3 HIGH 1ST HIGH VALUE IS	67632.21000	ON 91041722:	AT (1602.80, 1742.50, .00, .00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_2 HIGH 1ST HIGH VALUE IS	51687.79000c	ON 91081108:	AT (1626.30, 1883.70, .00, .00)	DC	NA
AREA_3 HIGH 1ST HIGH VALUE IS	52457.64000c	ON 91081108:	AT (1602.80, 1742.50, .00, .00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR

```
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY
```

```
*** ISCST3 - VERSION 96113 ***    ***  American Chemical Services (ACS)                    ***        07/05/98
                                  ***                                                       ***        14:17:18
                                                                                                       PAGE  16
**MODELOPTs: CONC                        RURAL  FLAT          DFAULT


*** Message Summary : ISCST3 Model Execution ***

 --------- Summary of Total Messages --------

A Total of           0 Fatal Error Message(s)
A Total of           0 Warning Message(s)
A Total of         367 Informational Message(s)

A Total of         367 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST3 Finishes Successfully ***
   ************************************
```

ATTACHMENT 4

ISCST3 Model Output File for Emissions During Pretreatment/Materials Handling Study (Focus 1997)

American Chemical Services (ACS)

Est. Dispersion for Comparison to Focus (1997) Monitoring

S:\SONG\ACS\RISKCALC\AIR\ACSFOCUS.DAT

ISCST3 - (DATED 96113)

IBM-PC VERSION (3.04) ISCST3R
(C) COPYRIGHT 1992-1996, TRINITY CONSULTANTS, INC.

Run Began on 7/05/1998 at 21:32:49

```
** BREEZE AIR ISCST3 - C:\ISCST3\ACSFOCUS.DAT
** Trinity Consultants Incorporated, Dallas, TX

CO STARTING
CO TITLEONE  American Chemical Services (ACS)
CO MODELOPT  DFAULT  CONC  RURAL
CO AVERTIME  1  8  ANNUAL
CO POLLUTID  OTHER
CO TERRHGTS  FLAT
CO RUNORNOT  RUN
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
SO LOCATION  AREA2  AREA  1572.0  1898.0  0
** SRCDESCR  Area 2 - Focus Study
SO SRCPARAM  AREA2  1.000000E+00  0  20  30  0  0
SO CONCUNIT  1.0E+03  GRAMS/SEC  MILLIGRAMS/M**3
SO SRCGROUP  AREA_2 AREA2
SO FINISHED

RE STARTING
RE DISCCART  1583.0  1961.0
** RCPDESCR  North
RE DISCCART  1583.0  1868.0
** RCPDESCR  South
RE DISCCART  1617.0  1915.0
** RCPDESCR  East
RE DISCCART  1550.0  1915.0
** RCPDESCR  West
RE DISCCART  1609.0  1949.0
** RCPDESCR  NE
RE DISCCART  1609.0  1882.0
** RCPDESCR  SE
RE DISCCART  1558.0  1888.0
** RCPDESCR  SW
RE DISCCART  1558.0  1943.0
** RCPDESCR  NW
RE FINISHED
```

```
ME STARTING
ME INPUTFIL  S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT
ME ANEMHGHT  10.0  METERS
ME SURFDATA  14848  1991
ME UAIRDATA  14826  1991
ME STARTEND  91  01  01  1  91  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  1  FIRST
OU RECTABLE  8  FIRST
OU RECTABLE  ALLAVE  FIRST
OU POSTFILE  8  AREA_2  PLOT  C:\ISCST3\ACSFOCUS.PST
OU FINISHED

**********************************
*** SETUP Finishes Successfully ***
**********************************
```

**MODELOPTs: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Intermediate Terrain Processing is Selected
**Model Is Setup For Calculation of Average CONCentration Values.
-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations
**Model Uses RURAL Dispersion.
**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.
**Model Assumes No FLAGPOLE Receptor Heights.
**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR
and Calculates ANNUAL Averages
**This Run Includes: 1 Source(s); 1 Source Group(s); and 8 Receptor(s)
**The Model Assumes A Pollutant Type of: OTHER
**Model Set To Continue RUNning After the Setup Testing.
**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours
**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ; Rot. Angle = .0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 1000.0
Output Units = MILLIGRAMS/M**3

**Input Runstream File: C:\ISCST3\ACSFOCUS.DAT ; **Output Print File: C:\ISCST3\ACSFOCUS.LST

**MODELOPTs: CONC RURAL FLAT DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
AREA2	0	.10000E+01	1572.0	1898.0	.0	.00	20.00	30.00	.00	.00	

**MODELOPTs: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
AREA_2	AREA2 ,

**MODELOPTs: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(1583.0,	1961.0,	.0,	.0);	(1583.0,	1868.0,	.0,	.0);
(1617.0,	1915.0,	.0,	.0);	(1550.0,	1915.0,	.0,	.0);
(1609.0,	1949.0,	.0,	.0);	(1609.0,	1882.0,	.0,	.0);
(1558.0,	1888.0,	.0,	.0);	(1558.0,	1943.0,	.0,	.0);

**MODELOPTs: CONC   RURAL FLAT   DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 91 1 1 1
AND END DATE: 91 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY	WIND SPEED CATEGORY					
CATEGORY	1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: S:\SONG\ACS\RISKCALC\AIR\SOBEND91.DAT FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 14848 UPPER AIR STATION NO.: 14826
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1991 YEAR: 1991

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
91	1	1	1	11.0	5.14	262.6	5	745.0	426.0	.0000	.0	.0000	0	.00
91	1	1	2	8.0	5.14	263.1	5	731.9	426.0	.0000	.0	.0000	0	.00
91	1	1	3	34.0	5.66	263.1	4	718.7	718.7	.0000	.0	.0000	0	.00
91	1	1	4	13.0	4.63	263.7	5	705.6	426.0	.0000	.0	.0000	0	.00
91	1	1	5	13.0	4.63	263.1	5	692.4	426.0	.0000	.0	.0000	0	.00
91	1	1	6	32.0	3.60	263.7	5	679.2	426.0	.0000	.0	.0000	0	.00
91	1	1	7	25.0	3.60	263.1	5	666.1	426.0	.0000	.0	.0000	0	.00
91	1	1	8	3.0	4.12	263.7	5	652.9	426.0	.0000	.0	.0000	0	.00
91	1	1	9	357.0	6.17	264.8	4	70.6	444.2	.0000	.0	.0000	0	.00
91	1	1	10	11.0	5.66	265.9	4	171.3	470.2	.0000	.0	.0000	0	.00
91	1	1	11	24.0	5.66	267.6	4	272.0	496.1	.0000	.0	.0000	0	.00
91	1	1	12	16.0	5.66	269.3	4	372.7	522.1	.0000	.0	.0000	0	.00
91	1	1	13	23.0	7.20	270.9	4	473.3	548.0	.0000	.0	.0000	0	.00
91	1	1	14	19.0	5.66	272.6	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	15	42.0	7.20	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	16	34.0	5.14	273.1	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	17	21.0	5.66	272.0	4	574.0	574.0	.0000	.0	.0000	0	.00
91	1	1	18	27.0	4.12	270.9	5	578.0	597.4	.0000	.0	.0000	0	.00
91	1	1	19	24.0	4.63	270.4	5	584.0	632.0	.0000	.0	.0000	0	.00
91	1	1	20	17.0	3.60	269.3	5	589.9	666.6	.0000	.0	.0000	0	.00
91	1	1	21	30.0	4.12	269.8	5	595.9	701.2	.0000	.0	.0000	0	.00
91	1	1	22	52.0	3.60	269.3	5	601.8	735.8	.0000	.0	.0000	0	.00
91	1	1	23	60.0	2.57	268.1	6	607.8	770.4	.0000	.0	.0000	0	.00
91	1	1	24	50.0	3.09	267.6	5	613.7	805.0	.0000	.0	.0000	0	.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE ANNUAL (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
1583.00	1961.00	265.20010	1583.00	1868.00	291.07370
1617.00	1915.00	268.41580	1550.00	1915.00	418.90300
1609.00	1949.00	445.87520	1609.00	1882.00	239.39430
1558.00	1888.00	378.74480	1558.00	1943.00	221.98750

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1583.00	1961.00	17833.28000	(91070924)	1583.00	1868.00	19720.76000	(91081105)
1617.00	1915.00	10748.34000	(91112220)	1550.00	1915.00	17380.78000	(91062006)
1609.00	1949.00	21136.19000	(91020102)	1609.00	1882.00	18059.73000	(91060801)
1558.00	1888.00	23704.29000	(91062002)	1558.00	1943.00	22892.42000	(91070922)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AREA_2 ***
INCLUDING SOURCE(S): AREA2 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
1583.00	1961.00	6420.69100c	(91112124)	1583.00	1868.00	6769.39400c	(91081108)
1617.00	1915.00	5561.83500	(91070208)	1550.00	1915.00	7860.84700c	(91020108)
1609.00	1949.00	5583.65100c	(91030808)	1609.00	1882.00	5793.87000c	(91080408)
1558.00	1888.00	7839.20800c	(91062008)	1558.00	1943.00	5401.43600	(91122524)

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_2	1ST HIGHEST VALUE IS 445.87520	AT (1609.00, 1949.00, .00, .00)	DC	NA
	2ND HIGHEST VALUE IS 418.90300	AT (1550.00, 1915.00, .00, .00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_2	HIGH 1ST HIGH VALUE IS	23704.29000	ON 91062002: AT (1558.00, 1888.00, .00, .00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MILLIGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
AREA_2	HIGH 1ST HIGH VALUE IS	7860.84700c	ON 91020108: AT (1550.00, 1915.00, .00, .00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

**MODELOPTs: CONC RURAL FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 385 Informational Message(s)

A Total of 385 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST3 Finishes Successfully ***
****

APPENDIX C

Human Health Risk Assessment
Exposure Equations and Risk Estimates

CONTENTS

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1.2 Dermal Contact with Soil	C-1
1.3 Ingestion of Water	C-2
1.4 Dermal Contact with Water	C-2
1.5 Inhalation of Vapors and Particulates	C-3

1.0 EXPOSURE EQUATIONS

The following sections present the exposure equations that are referred to in Section 3.4. The calculations of theoretical dose, cancer risk, and hazard quotient/hazard index (HQ/HI) values are presented in Attachment 1 (bound separately) to this appendix.

1.1 Ingestion of Soil

$$Dose = \frac{C_s \cdot IR \cdot CF \cdot FI \cdot EF \cdot ED}{BW \cdot AT}$$

where:

Dose	=	(mg-chemical)/(kg-bw/day)
C_s	=	chemical concentration in soil (mg-chemical/kg-soil)
IR	=	soil ingestion rate (mg-soil/day)
CF	=	conversion factor (10^{-6} kg/mg)
FI	=	fraction ingested from an area (unitless)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg-bw)
AT	=	averaging time (days); AT_c (carcinogens) is equal to lifetime of 70 years, and AT_{nc} (noncarcinogens) is equal to exposure duration, ED expressed in days:

$$AT_{nc} = ED \cdot \frac{AP}{12\ months/yr} \cdot 365\ days/yr$$

where:

ED	=	exposure duration (years)

AP = averaging period (months/year)

1.2 Dermal Contact with Soil

$$Dose = \frac{C_s \cdot AD \cdot CF \cdot SA \cdot EF \cdot ED \cdot AF_{derm}}{BW \cdot AT}$$

where:

Dose = (mg-chemical)/(kg-bw/day)
C_s = chemical concentration in soil (mg-chemical/kg-soil)
AD = soil-to-skin adherence factor (kg-soil/cm^2)
CF = conversion factor (10^{-6} kg/mg)
SA = skin surface area available for contact (cm^2/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)
AF_{derm} = dermal absorption fraction (unitless)
BW = body weight (kg)
AT = averaging time (days); AT_c(carcinogens) is equal to lifetime of 70 years, and AT_{nc} (noncarcinogens) is equal to exposure duration, ED in days

1.3 Ingestion of Water

$$Dose = \frac{C_w \cdot DR \cdot EF \cdot ED}{BW \cdot AT}$$

where:

Dose = (mg-chemical)/(kg-bw/day)
C_w = chemical concentration in water (mg-chemical/L-water)
DR = drinking rate (L-water/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)

BW = body weight (kg)
AT = averaging time (days); AT_c (carcinogens) is equal to lifetime of 70 years, and AT_{nc} (noncarcinogens) is equal to exposure duration, ED in days

1.4 Dermal Contact with Water

$$Dose = \frac{C_w \cdot CF \cdot SA \cdot K_p \cdot ET \cdot EF \cdot ED}{BW \cdot AT}$$

where:

Dose = (mg-chemical)/(kg-bw/day)
C_w = chemical concentration in water (mg-chemical/L-water)
CF = conversion factor (10^{-3} L/cm^3)
SA = skin surface area available for contact (cm^2/day)
K_p = permeability coefficient (cm/hr)
ET = exposure time (hr/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)
BW = body weight (kg)
AT = averaging time (days); AT_c(carcinogens) is equal to lifetime of 70 years, and AT_{nc} (noncarcinogens) is equal to exposure duration, ED in days

1.5 Inhalation of Vapors and Particulates

$$Exposure\ Concentration = \frac{C_a \cdot FC \cdot EF \cdot ED}{AT}$$

where:

C_a = chemical concentration in air (mg/m^3)
FC = fraction contacted or exposure time (hours exposed/hours per day)
EF = exposure frequency (days/year)
ED = exposure duration (years)

AT = averaging time (days); AT_c (carcinogens) is equal to lifetime of 70 years, and AT_{nc} (noncarcinogens) is equal to exposure duration, ED in days