Beazer

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January 29, 2009

Mr. Scott Miller
Remedial Project Manager
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Section C
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: Evaluation of Potential On-Site Human Health Risks Associated with Soils and Sediments Koppers, Inc. Wood-Treating Facility Gainesville, Florida

Dear Mr. Miller:

Under cover of this letter is Beazer East, Inc.'s ("Beazer's") EVALUATION OF POTENTIAL ON-SITE HUMAN HEALTH RISKS ASSOCIATED WITH SOILS AND SEDIMENTS AT THE KOPPERS, INC. WOOD-TREATING FACILITY IN GAINESVILLE, FLORIDA (the "Risk Assessment"). The Risk Assessment was performed for Beazer by AMEC Earth & Environmental "(AMEC").

The Risk Assessment provides a conservative and comprehensive baseline conditions risk evaluation for the Koppers, Inc. ("KI") facility (the Site"), *i.e.*, an assessment of both potential cancer and potential non-cancer risk without consideration of the types of institutional and/or engineering controls that will be evaluated along with other remedial alternatives in the forthcoming Feasibility Study. The methodology for the Risk Assessment was designed and conducted with the benefit of input provided by the Environmental Protection Agency ("Agency") and other stakeholders. Please note, to facilitate U.S. EPA's review of the Risk Assessment, we will shortly, in a separate letter, transmit responses to U.S. EPA's comments on the "Proposed Approach to Estimating Potential On-Site Human Health Risks Associated with Soils and Sediments at the Koppers Inc. Wood-Treating Facility in Gainesville, Florida."

The Risk Assessment did not identify any non-cancer risks reaching or exceeding a total Hazard Index of 1. As discussed with the Agency, the Risk Assessment contains both simplistic and highly conservative deterministic potential cancer risk evaluations for all hypothetical potential receptors, as well as advanced and more realistic assessments of potential cancer risks using Microexposure Event Modeling ("MEE") for those hypothetical receptors identified via the deterministic assessments as facing the greatest potential excess lifetime cancer risks. The more realistic and refined potential cancer risks predicted by the MEE analysis are substantially lower than the conservative point source estimates resulting from the deterministic risk analysis.

The MEE analysis indicates that, with the exception of certain KI workers in certain areas of the site who are, hypothetically, the most highly-exposed receptors evaluated in the Risk Assessment, all hypothetical receptors are presented with risks within or below the Agency's allowable risk range. However, because the potential risk predicted using the MEE for certain hypothetical receptors remains at or above the highly conservative risk levels adopted by the Florida Department of Environmental Protection, appropriate institutional and engineering controls protective of such receptors will be evaluated in the forthcoming FS.

As you requested, we have enclosed one hard copy and one electronic copy. We look forward to receiving your comments. Please contact me or Paul Anderson of AMEC if you have any questions regarding the Risk Assessment.

Sincerely,

Mitchell D. Brourman, P.G.
Environmental Manager

Enclosure

cc: Jack Spicuzza (KI)
Paul Anderson (AMEC)
Greg Council (HSI Geotrans)

Evaluation of Potential On-Site Human Health Risks Associated with Soils and Sediments at the Koppers Inc. Wood-Treating Facility in Gainesville, Florida

Submitted to:
Beazer East, Inc.

Submitted by:

AMEC Earth & Environmental
Westford, Massachusetts

January 29, 2009

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ACRONYMS

ADD	Average Daily Dose
ALM	Adult Lead Model
AT	Averaging Time
BaP-TE	Benzo(a)pyrene Toxic Equivalent
BBA	Boiler/Bathhouse Area
BW	Body Weight
CCA	Chromated Copper Arsenate
CF	Conversion Factor
cm^2	square centimeter
COPC	Constituent of Potential Concern
CSF	Cancer Slope Factor
d	day(s)
DD	Drainage Ditch
EAA	Eastern Active Area
ED	Exposure Duration
ED01	estimated dose corresponding to a 1% increase in extra risk
EF	Exposure Frequency
EPC	Exposure Point Concentration
ET	Exposure Time
FDEP	Florida Department of Environmental Protection
FI	Fraction of daily exposure
GSD	Geometric Standard Deviation
HEAST	Health Effects Assessment Summary Table
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
hr	hour(s)
IR	Ingestion Rate
IRIS	Integrated Risk Information System
kg	kilogram
KI	Koppers, Inc.
LADD	Lifetime Average Daily Dose
LED01	95% lower confidence limit of the estimated dose corresponding to a 1% increase in extra risk
LOAEL	Lowest Observed Adverse Effect Level
MEE	Microexposure Event
m^3	cubic meter
mg	milligram
µg/dL	microgram per deciliter
NAS	National Academy of Sciences
NEGA	Northeast Grassed Area
NOAEL	No Observed Adverse Effect Level
NTP	National Toxicological Program
NWGA	Northwest Grassed Area
PA	Process Area

PAH	Polycyclic Aromatic Hydrocarbons
PBPK	Physiologically Based Pharmacokinetic
pcPAH	Potentially Carcinogenic Polycyclic Aromatic Hydrocarbons
PELCR	Potential Excess Lifetime Cancer Risk
PM10	Particulate Matter less than 10 microns
PRP	Potentially Responsible Party
RAF	Relative Absorption Factor
RfD	Reference Dose
RME	Reasonable Maximum Exposure
RPM	Respirable Particulate Matter
RSD	Relative Standard Deviation
RSL	Regional Screening Level
SCTL	Soil Cleanup Target Level
SSA	Exposed Skin Surface Area
SWWA	Southwest Wooded Area
TCDD	2,3,7,8-Tetracholordibenzo-p-dioxin
TCDD-TEQ	2,3,7,8-Tetracholordibenzo-p-dioxin Toxic Equivalent Quotient
TEF	Toxic Equivalent Factor
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
WAA	Western Active Area
yr	year(s)

EXECUTIVE SUMMARY

This report presents on-Site human health risk assessment (HHRA) for the Koppers, Inc. (KI) wood-treating facility in Gainesville, Florida, assuming baseline (i.e., pre-remediation) conditions. The HHRA evaluates the potential non-cancer and cancer health risks associated with potential exposures of receptors under current use conditions to constituents in on-Site soils and sediments. Results of the risk assessment will be used to design and evaluate potential Site remedies. The risk assessment contains both a conservative deterministic risk assessment used to estimate potential risk for all on-Site receptors assuming a reasonable maximum exposure (RME) and an advanced probabilistic risk assessment used to refine and develop more realistic estimates of potential risk for those potential on-Site receptors identified by the deterministic risk assessment as having the greatest potential risks. This HHRA was conducted consistent with United States Environmental Protection Agency (USEPA) human health risk assessment guidance that divides the risk assessment process into:

- Hazard Identification
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization

The Hazard Identification step of the HHRA identifies the constituents of potential concern (COPCs) in each environmental medium to which potential on-Site human receptors may be exposed. Environmental media at the Site include surface soil, subsurface soil, and sediment. COPCs were identified by reviewing current and historical operations at the Facility, reviewing data collected during several previous Site investigations, and comparing the maximum constituent concentrations to one-tenth of the lowest (i.e., most conservative), risk-based screening benchmarks developed by either the USEPA or the Florida Department of Environmental Protection (FDEP). Eighteen constituents (or classes of constituents) were identified as COPCs for the non-cancer risk assessment and four constituents (i.e., arsenic, benzo(a)pyrene toxic equivalents (BaP-TE), pentachlorophenol, and 2,3,7,8-tetracholordibenzo-p-dioxin toxic equivalents (TCDD-TEQ)) were identified as COPCs for the cancer risk assessment.

The Exposure Assessment step estimates the potential dose of each COPC for each potentially complete exposure pathway for each kind of on-Site human receptor included in the HHRA. Potentially complete exposure pathways include incidental ingestion of soil (or sediment), dermal contact with soil (or sediment), and inhalation of soil derived dust. The following potential receptors were identified based on behaviors and activities that are consistent with the current and likely future use of the Site (where both current and future use of the Site is assumed to be for treatment of wood):

- Current and Future On-Site Workers;
- Current and Future Trespassers;
- Future Construction Workers; and
- Future Utility Workers.

The potential dose (expressed as the Average Daily Dose (ADD) for non-cancer effects and as the Lifetime Average Daily Dose (LADD) for cancer effects) is a function of the Exposure Point Concentration (EPC) of a COPC in an environmental medium, selected receptor-specific parameters that describe the frequency and extent of a receptor's contact with a particular environmental medium, and selected COPC-specific parameters that describe a COPCs potential absorption. EPCs were estimated using a geostatistical bootstrapping approach to account for the spatial dependence of soil samples and the non-random nature of sampling at the Site. Receptor-specific exposure parameters were developed based upon Site-specific information provided by Koppers, Inc (KI), USEPA and FDEP sources, as well as the scientific literature. COPC-specific exposure parameters were obtained from USEPA sources and from peer-reviewed scientific literature.

Based upon information provided by KI regarding worker activity patterns, eight on-Site exposure areas were identified for evaluation in the HHRA:

- Process Area (PA);
- Southwest Wooded Area (SWWA);
- Western Active Area (WAA);
- Northwest Grassed Area (NWGA);
- Boiler Area (BA);
- Eastern Active Area (EAA);
- Northeast Grassed Area (NEGA); and,
- Drainage Ditch (DD).

Under current use conditions KI workers and trespassers are assumed to potentially be exposed to COPCs in surface soils (or sediments in the case of the Drainage Ditch) in each of these on-Site exposure areas. In addition, potential exposure to COPCs in subsurface soils was evaluated in the HHRA. Potential risks associated with COPCs in each of these areas are evaluated independently in the HHRA.

The Toxicity Assessment summarizes the dose-response characteristics of each COPC and identifies available Reference Doses (RfDs) and Cancer Slope Factors (CSFs) for COPCs. All non-cancer dose-response information was obtained from USEPA sources. For the deterministic risk assessment, information on cancer dose-response relationships was also obtained from USEPA sources. To estimate the potential excess lifetime cancer risks (PELCRs) associated with potential exposures to 2,3,7,8-Tetracholordibenzo-p-dioxin Toxic Equivalent Quotients (TCDD-TEQs), the probabilistic risk assessment uses a distribution of CSFs. The distribution of CSFs for TCDD-TEQ is based upon the current scientific understanding of how dioxin may cause cancer.

Risk Characterization combines the potential exposures estimated in the Exposure Assessment with the dose-response values identified in the Toxicity Assessment to predict potential risks. Both potential non-cancer and potential cancer risks are evaluated. The risk characterization presented in this HHRA was conducted in two phases including both a deterministic risk assessment, to develop preliminary, conservative RME estimates of potential risk, and an advanced probabilistic assessment (Microexposure® Event (MEE) Modeling), to refine the preliminary risks for environmental media, potential receptors and Site-related constituents that exceed

allowable risk benchmarks. The risk characterization is designed to provide both conservative RME evaluations and realistic estimates of current risks to human receptors due to exposure to on-Site soil and sediment. The results of each of these phases are described below.

For non-cancer risk, the deterministic risk assessment found that all receptors in every on-Site exposure area have a total Hazard Index of less than 1. Accordingly, based upon the conservative assumptions used in the deterministic risk assessment, potential non-cancer health effects are not expected to occur as a result of potential exposure to COPCs in on-Site soils and on-Site sediments. Given that the conservative deterministic risk assessment predicts an absence of potential non-cancer risks, a more refined evaluation of potential non-cancer risks using the MEE model was not deemed necessary and was not conducted.

For on-Site KI workers, potentially exposed to COPCs in surface soils in the PA, BA, and EAA the conservative deterministic risk assessment indicated potential excess lifetime cancer risks above USEPA's allowable risk range of $1x10^{-6}$ to $1x10^{-4}$ (one in one million to one in ten thousand) (Figure ES-1). All other areas had potential excess lifetime cancer risks within USEPA's allowable risk range. Potential excess lifetime cancer risks for trespassers, construction workers and utility workers in all exposure areas were also within or below USEPA's allowable risk range. These results establish that under USEPA's risk management policy, only COPCs in the PA, BA, and EAA pose a potentially unacceptable risk. Two of these three exposure areas (PA and BA) are also the exposure areas that have TCDD-TEQ EPCs that exceed the lower end of USEPA's range of TCDD-TEQ cleanup levels of commercial/industrial sites. Thus, the conservative deterministic risk assessment results and USEPA's range of TCDD-TEQ cleanup levels reach consistent conclusions about which areas warrant additional evaluation of potential risk among the various on-Site exposure areas.

Under FDEP's risk management policy (an allowable excess lifetime cancer risk limit of $1x10^{-6}$); potential excess lifetime cancer risks estimated for on-Site KI workers by the conservative deterministic risk assessment exceed the FDEP cancer risk limit for COPCs in surface soils in all exposure areas. Potential excess lifetime cancer risk estimated for on-Site KI workers by the conservative deterministic risk assessment for COPCs in sediments in the Drainage Ditch (DD) is below FDEP's allowable risk limit. Moreover, the potential excess lifetime cancer risks estimated for trespassers also exceed FDEP's allowable risk limit in the PA, BA, EAA, WAA and NEGA, as compared to trespasser potential risk falling within or below USEPA's allowable risk range in all exposure areas. Similarly, the potential excess lifetime cancer risks estimated for construction and utility workers by the conservative deterministic risk assessment also exceed FDEP's allowable risk limit but these potential risks not did not exceed USEPA's allowable risk range. Only potential excess lifetime risks associated with potential trespasser exposure to COPCs in NWGA and SWWA soils and DD sediments and KI worker exposure to COPCs in DD sediments fell below FDEP's risk limit of $1x10^{-6}$.

Based upon the results of the conservative deterministic risk assessment the On-Site Worker was identified as the potentially most highly exposed scenario, and therefore the

MEE analysis was run for the KI worker potentially exposed to all of the four potentially carcinogenic COPCs included in the conservative deterministic risk assessment (i.e., arsenic, BaP-TE, pentachlorophenol, and TCDD-TEQ) in surface soils in all on-Site exposure areas. Potential excess lifetime cancer risks associated with potential exposure to COPCs in DD sediments were not refined using the MEE analysis because conservative deterministic risk estimates met FDEP's allowable risk limit and refinement of those potential risks would have only decreased those potential risks further.

Similarly, potential excess lifetime cancer risks associated with a trespasser's or construction or utility worker's potential exposure to COPCs were also not refined using the MEE analysis. All of these receptors had potential risks lower than those potential risks estimated for the KI worker (Figure ES-1).

For these reasons, the KI worker was treated as the most sensitive or highly exposed receptor for the purposes of the HHRA. Accordingly, if the KI worker's potential risks meet USEPA's or FDEP's allowable risk limit, potential risks associated with the potential exposures of other receptors will also meet the allowable risk limit.

The more realistic and refined potential cancer risks predicted by the MEE analysis are substantially lower than the conservative estimates of potential cancer risk developed by the deterministic risk assessment used in the first phase of risk characterization (Figure ES-2). This is consistent with the deterministic assessment's use, and combination, of multiple conservative assumptions leading to likely unrealistic estimates of risk.

Even though the refined MEE analysis is far more realistic than the conservative deterministic risk assessment in its representation of the parameters that may determine a KI worker's potential exposure and risk, the MEE analysis may not fully capture and accurately represent all of the characteristics that influence the determination of estimated potential risk, including parameters that would likely result in lower potential risk. For example, the MEE analysis assumes that on the days a hypothetical KI worker is in an on-Site exposure area with an active wood treating operation, he or she spends the entire day in that area. This is likely not be true for all workers in all areas, such as in the BA. Some workers may only be in the BA for one hour a day. It is also possible that during that hour, a worker may not be engaged in active wood treating operations and, thus, may not be exposed to soil from the BA. For such workers, the potential excess lifetime cancer risks estimated for the BA, even by the refined MEE analysis, would represent significant overestimates of potential risk. Any actual risks would be substantially lower. So even though the MEE results are far more representative of potential risks than the results of the conservative deterministic risk assessment, the modeled KI worker parameters should not be viewed as representing any actual KI workers. Consequently, the results of the MEE analysis are discussed as representing "hypothetical" KI workers.

The results of the MEE analysis indicate that all hypothetical KI workers are predicted to have potential excess lifetime cancer risks within or below USEPA's allowable risk range (Figure ES-2) and, thus, do not have an unacceptable cancer risk under USEPA's risk management policy. Given that USEPA is generally focused on the RME, defined as

falling between the 90th and 99.9th percentiles, the refined and more realistic potential risks, associated with baseline conditions, developed by the MEE analysis suggest that current and future hypothetical KI workers do not have potential cancer risks above USEPA's allowable risk range.

Similarly, the more realistic estimates of potential risk to the typical hypothetical KI worker estimated by the MEE analysis are below FDEP's risk limit in six of the seven on-Site exposure areas (PA, EAA, NEGA, NWGA, SWWA and WAA) included in the MEE analysis. In the BA, the MEE analysis predicts that the typical (or median) hypothetical KI worker's potential risk is slightly greater than the FDEP risk limit; however, had more realistic assumptions been used for one or two other parameters for which such assumptions are available, potential risks for the typical hypothetical worker in the BA would have been below the FDEP risk limit as well.

Though the upper percentiles of the distribution of potential excess lifetime cancer risk (PELCR) predicted by the MEE analysis are substantially lower than point estimates of potential risk predicted by the conservative deterministic risk assessment, for four of seven on-Site exposure areas, the 95th percentile of the PELCR distribution exceeds the FDEP risk limit. This does not mean, though, that these estimated potential risks are unacceptable. FDEP's risk management policy does not specify what percentile of the distribution of potential risk must meet FDEP's allowable risk limit of $1x10^{-6}$ (one in one million). Absent information to the contrary, the HHRA assumes that the statutory language refers to the typical, or average, Floridian (as opposed to some statistically defined upper bound Floridian) having an excess lifetime cancer risk equal to or less than the allowable risk limit. As described above, the potential excess lifetime risk for the typical, or average, hypothetical KI worker is below or just about equal to the FDEP risk limit in all on-Site exposure areas under current conditions.

Given that refinement of potential excess lifetime cancer risk using the MEE analysis reduced potential risks for most hypothetical KI workers to allowable levels in most exposure areas, a similar reduction in potential risk would result for the other receptors not included in the MEE analysis, as described above. Thus, in exposure areas where hypothetical KI workers did not have an unacceptable potential excess lifetime cancer risk, other lesser exposed receptors (i.e., trespassers, construction/utility workers) would also not have an unacceptable potential excess lifetime cancer risk.

In summary, when a conservative deterministic risk assessment methodology is exclusively used to estimate potential risks, potential excess lifetime cancer risks for on-Site KI workers in the SWWA, NWGA, NEGA, WAA and DD, as well as for the trespasser in all on-Site exposure areas and for utility and construction workers, are below or within USEPA's allowable risk range. Potential excess lifetime cancer risks developed using the conservative deterministic risk assessment for on-Site KI workers in the PA, BA, and EAA exceed USEPA's allowable risk range. The PA and BA also have TCDD-TEQ surface soil EPCs that exceed 5 ug/kg, the lower end of USEPA's range of TCDD-TEQ cleanup levels for commercial/industrial sites. Potential risks estimated using the conservative deterministic risk assessment methodology exceed FDEP's risk limit for most receptors in most exposure areas. When estimates of potential risk are

refined using the MEE analysis, potential excess lifetime cancer risks for the typical, or median, hypothetical KI worker meets both the FDEP and USEPA risk limits. In addition, the percentiles of the distribution of potential excess lifetime cancer risk representative of the RME also meet USEPA's risk limits. These findings indicate that when the refined estimates of potential risk developed by the MEE analysis are used, unacceptable potential risk does not exist under current conditions. Given that future use of the Site is expected to remain the same as current use, unacceptable potential risks are not expected to be present in the future either

1.0 INTRODUCTION

This report presents a risk assessment that estimates potential on-Site human health risks that may result from direct contact with Site-related constituents in on-Site soils and sediments at the Koppers Inc. (KI) wood-treating facility in Gainesville, Florida (the Site) assuming baseline (i.e., pre-remediation) conditions. The Gainesville Site is owned and operated by KI and Beazer East, Inc. (Beazer) maintains responsibility for certain environmental matters including the completion of this risk assessment. The overall approach follows USEPA's standard four-step human health risk assessment paradigm (i.e., Hazard Identification, Exposure Assessment, Toxicity Assessment and Risk Characterization). The approach incorporates several phases including both a conservative assessment of potential risks using deterministic risk estimation methods to develop preliminary highly conservative estimates of potential risk and an advanced probabilistic method (Microexposure® Event (MEE) Modeling) to refine the preliminary conservative potential risks for environmental media, potential receptors and Site-related constituents that exceed allowable risk benchmarks. The risk characterization is designed to provide conservative and realistic estimates of current risks to human receptors due to exposure to on-Site soil and sediment.

1.1 Site Description

The Site encompasses approximately 90 acres of land within the northern part of the city limits of Gainesville, Florida. It is zoned industrial and is the only parcel of land that is operating as industrial in the area. The next closest area zoned industrial is the Gainesville Industrial Area, which is located several miles to the north. The former Cabot Carbon property, located east of the Site, the marshy area to the north of the old Cabot Carbon facility, and the property to the east and south of the Site are zoned commercial. The land to the west and northwest of the Site is zoned single family and multiple family residential. Scattered small businesses and a few mobile homes are located to the north/northwest of the Site. Commercial facilities border the Site to the south and east along NW 23rd Avenue and north Main Street. To the northeast, the adjacent land is primarily undeveloped and heavily vegetated.

The Site is characterized by relatively flat terrain that slopes generally toward the north-northeast. Low swampy areas are prevalent in an undeveloped, heavily vegetated area to the northeast of the Site. A drainage ditch bisects the Site from southwest to northeast, carrying surface run-off toward Springstead Creek, located approximately 750 feet to the north.

The central and northeastern portions of the Site are primarily used for wood storage. The Site is serviced by a series of railroad sidings that enter the northeast corner. A railroad track forms the eastern boundary of the Site.

The former and current wood-treating facilities are located within the southeastern portion of the Site. This area, includes the former processing buildings, former tank containment and cooling pond areas, former drip track areas, and the currently operating process buildings and drip tracks and has been further subdivided in this human health risk assessment (HHRA), as described below, to account for KI worker potential

exposures. The central and northern portions of the Site have been cleared and graded and are now used as storage areas. These portions of the Site also contain railroad tracks, gravel access roads, and a wood debarking area.

The former North and South Lagoons were used to manage wastewater generated by the treatment process. Based on aerial photographs, it appears that the North Lagoon operated from 1956 until the 1970s, and the South Lagoon operated from 1943 (or earlier) through 1975 or 1976. Both lagoons have been closed, covered and graded and the areas are currently used for storage of utility poles.

Wood-treatment activities are ongoing on the Site and KI is currently treating wood with chromated copper arsenate (CCA) in a smaller process building and separate drip tracks. These are located to the west of the former process building and drip tracks.

Over time, shallow soil fill, including crushed limestone, has been placed over much of the Site and continued surface maintenance is ongoing as part of routine, site-related activities. This maintenance includes the addition of soil fill and crushed limestone and surface grading as necessary.

For the foreseeable future, land use at the Site will continue to be the same as current uses. The Site is expected to remain zoned for industrial use and adjacent lands are expected to remain mixed residential and commercial. In the event that the current use of the Site were to change at some point in the future to a different industrial or commercial use, the risk assessment methodology developed in this on-Site HHRA would be used to estimate potential risks associated with the alternate future used by modifying the assumptions used to estimate potential exposures of current on-Site workers such that they are representative of on-Site workers under the alternate future use.

1.2 Overview of the Risk Assessment Approach

As presented above, the human health risk assessment presented herein incorporates several phases and decision points (as described in AMEC, 2008a). Multiple phases and decision points are employed to expedite the overall risk assessment process and to focus the more advanced probabilistic risk assessment methods (i.e., the MEE model) on the media, receptors and constituents that pose the greatest potential risks. The overall process can be viewed as having four key decision points at which either constituents, receptors or media may be documented to meet allowable risk benchmarks and not need to be evaluated further in the risk assessment. The first decision point arises during the Hazard Identification step of the risk assessment. After examining the detection frequency of constituents or comparing constituent concentrations to screening levels, some constituents were eliminated from the on-Site risk assessment.

For constituents remaining in the risk assessment after the Hazard Identification step, conservative point estimates of potential risk were developed using a deterministic risk assessment approach. The resulting conservative estimates of potential risk were compared to FDEP risk benchmarks (i.e., an excess lifetime cancer risk of one in one million and an allowable Hazard Quotient of 1.0) to identify constituents, receptors and exposure media that meet FDEP benchmarks and those that exceed the FDEP

benchmarks. The comparison of the conservative point estimates of potential risk to USEPA and FDEP risk benchmarks is the second key decision point in the overall risk assessment process.

For those combinations of constituents, receptors and exposure media that have conservative point estimates of potential risk exceeding USEPA and FDEP benchmarks, estimated potential risks may be refined using advance probabilistic risk assessment methods (i.e., MEE modeling). The MEE model was described in a white paper (AMEC, 2008a). That white paper was previously provided to USEPA, and is included in the risk assessment as Appendix E. Given that current KI workers are assumed to have a greater potential for exposure to COPCs in on-Site soils than the other potential on-Site receptors (i.e., trespasser, construction worker, utility worker), the risk assessment contained herein uses probabilistic analysis only to refine the potential risk of on-Site KI workers. If potential risks for the KI worker meet allowable risk levels, potential risks for the other, less exposed, receptors are also assumed to meet these benchmarks. AMEC 2008b indicated that the probabilistic modeling could be conducted in two phases. The key difference between the phases being the use of point estimates for all toxicity values in the first phase and distributions in the second phase. The risk assessment presented herein uses only a single phase with probabilistic modeling. Consistent with AMEC 2008b, the MEE model develops distributions of potential risk using probabilistic distributions instead of conservative deterministic (point) estimates for key exposure assumptions. AMEC 2008b further described an initial phase of MEE modeling that uses point estimates for toxicity values and second phase, if necessary, that uses distributions for toxicity factors. The MEE analysis presented herein uses point estimates for toxicity factors for all constituents, except 2,3,7,8-Tetracholordibenzo-p-dioxin (TCDD) and related compounds. Based upon the absence of a cancer slope factor for TCDD in USEPA's Integrated Risk Information System (IRIS) and the availability of substantial new scientific information on the potential carcinogenicity of dioxin (discussed in Appendix D) a distribution of cancer slope factors is employed for 2,3,7,8-Tetracholordibenzo-p-dioxin Toxic Equivalent Quotient (TCDD-TEQ). Resulting distributions of potential risk were, once again, compared to allowable risk benchmarks to identify any combinations of constituents, receptors and exposure media that exceed allowable risk benchmarks.

1.3 Document Structure

Section 2 summarizes the Hazard Identification process, the key outcome of which is the selection of constituents of potential concern (COPCs). COPCs were selected by comparing the maximum concentration of all constituents with a detection frequency of greater than 5% to industrial soil screening benchmarks.

The Exposure Assessment (Section 3) describes the basis for partitioning of the Site into eight potential exposure areas: the Process Area (PA); the Southwest Wooded Area (SWWA); the Western Active Area (WAA); the Northwest Grassed Area (NWGA); the Boiler Area (BA); the Eastern Active Area (EAA); the Northeast Grassed Area (NEGA); and sediments in the Drainage Ditch (DD). The Site contains a ninth area (the Northern Inactive Area (Figure 2)) that is wooded and is distant from the active portions of the Site. Potential exposures and risks in this area are expected to be lower than estimated for any other area of the Site for two reasons. First, wood-treating activity is not known

to have occurred in this area and this area is therefore unlikely to contain elevated constituent concentrations. Second, no active wood treating occurs in this area currently and, thus, KI workers are assumed to visit this part of the Site infrequently, if at all. Thus, this portion of the Site is not included in the quantitative HHRA presented herein because no potential risk is assumed to be associated with this portion of the Site. As noted above, the default assumption is that the future use of the Site will remain the same as current use.

Division of the Site into the different exposure areas is based upon different types of wood treating-related activities with unique worker exposures occurring within unique portions of the Site. Information provided by the KI Gainesville Plant Manager, enabled the risk assessment to use Site-specific observations to divide the Site into the unique exposure areas and to establish realistic, but conservative exposure assumptions for on-Site workers in each area. DD sediments are differentiated from soils because of expected differences in contact frequency. The receptors potentially assumed to be exposed to soils or sediments are described in Section 3 along with the equations and exposure parameters that will be used to estimate their potential exposures. Note that the conservative deterministic and the more realistic probabilistic MEE assessments both use the same fundamental exposure estimation equations but the former uses conservative point estimates for each exposure assumption while the latter uses a distribution for most parameters. An overview of the geostatistical spatial bootstrapping method used to derive exposure point concentrations (EPCs) for each COPC in each exposure area is also presented in Section 3, as is a general description of the application of COPC-specific relative absorption factors (RAFs).

The Toxicity Assessment section (Section 4) contains a brief discussion of the sources of Reference doses (RfDs) and cancer slope factors (CSFs) for the conservative deterministic assessment and the MEE model as well as a summary of the distribution of toxicity values used in the MEE evaluation to estimate potential excess lifetime cancer risks. A combination of conservative point estimate toxicity values for arsenic, benzo(a)pyrene toxicity equivalents and pentachlorophenol and distributions of toxicity values for TCDD-TEQ were used to derive distributions of potential risk using the MEE model. A more extended description of the derivation of the distribution of TCDD slope factors is provided in Appendix D.

Section 5 presents the Risk Characterization. The equations used to estimate potential risk are described first, followed by the results of the phased approach to characterizing potential risk at the Site. The first phase of risk characterization consists of developing conservative estimates of potential risk using a deterministic approach where each parameter in the equations that are used to estimate risk is represented by a single value. As described above, the second phase of the risk characterization of the HHRA presented in this report is an MEE analysis to refine potential excess lifetime cancer risks for the receptors and exposure areas with the greatest potential risks.

Section 6 describes the analysis of uncertainty involved in the characterization of risk. Conclusions are presented in Section 7 and references are listed in Section 8.

2.0 HAZARD IDENTIFICATION

The Hazard Identification step of the HHRA involves identifying the Site-related COPCs to be quantitatively evaluated in the risk assessment. This risk assessment refers to the COPCs as being "Site-related". Use of "Site-related" does not mean that wood-treating operations conducted on the Site are potentially solely responsible for observed concentrations. Most of the COPCs have a variety of sources that may have contributed to the presence of a constituent at a sampling location. While wood-treating activities at the Site may also have contributed to the observed levels, use of the term "Site-related" does not mean the Site is responsible for most, or even the majority, of a COPC at a particular location. It only means that the COPCs are associated with wood-treating activity and the Site may have contributed to the observed concentrations. This is especially relevant for arsenic, polycyclic aromatic hydrocarbons (PAH) and TCDD-TEQ, all of which occur naturally but, more importantly, have anthropogenic sources that are present in the vicinity of the Site.

As a result of several phases of environmental investigation conducted at the Site, certain constituents were identified in one or more of the environmental media to which humans may be exposed. Soils (at a variety of depths) and sediments at a variety of locations were sampled and analyzed for a variety of constituents. In order to focus the human health risk assessment on the Site-related constituents that have the greatest potential to pose a risk, a multi-step screening process was used to identify COPCs.

2.1 Site Soil Data

Soil samples were collected from the Site between 1984 and 2006. AMEC previously reviewed and discussed the historic data in the *Revised Data Summary Report* (AMEC, 2007). In that report, AMEC concluded that the historic dataset was not complete because: the samples representing surface soil conditions in some portions of the Site were limited in extent; not all samples were analyzed for all constituents; most of the historic data were collected from source areas while the remainder of the Site was infrequently sampled; constituent concentrations may have changed over time due to transport and degradation; and, dioxin congener data were limited to mostly field immunoassay screening test.

In a letter to USEPA Region 4 dated October 31, 2006 (Beazer, 2006), Beazer agreed to use data collected from the Site post-1990. Upon further review of the dataset, several limitations were identified for the 1990 to 1995 data set. All data collected from the Site between 1990 and 1995 were missing detection limits for constituents not detected and could not be used in development of EPCs. Using only the detected constituents from the 1990 to 1995 data would unnecessarily bias the dataset and result in EPCs that are biased high. Also, there are no surface soil samples, i.e., samples starting at a 0 depth, from the 1990 – 1995 dataset. Of the 59 soil samples collected between 1990 and 1995, 58 were collected from the 1 to 3 foot depth and one was collected from the 2 to 4 foot depth. All soil samples collected from 2006 were analyzed across a 0 to 2 foot depth, which is a better representation of surface soil exposure, and represented all areas of the Site, not primarily the source areas; therefore, the more recent data better

characterize the concentration of constituents in surface soil. Consequently, the risk assessment presented herein included all data collected from 1995 to present.

Twenty-one soil samples were collected from the Site in August 1995 from eighteen locations. Five samples were collected from a depth of 0 to 6 inches. One sample was collected from a depth of 0 to 1 foot. Five samples were collected from a depth of 2 feet. Two samples were collected from a depth of 2.5 feet. Three samples were collected from a depth of 3 feet. Two samples were collected from a depth of 3.5 feet. Two samples were collected from a depth of 5 feet. One sample was collected from a depth of 5.5 feet.

Three hundred and twenty-one soil samples were collected from the Site in November and December 2006 from ninety-five locations. Ninety-five samples and twelve duplicate samples were collected from a depth of 0 to 3 inches. Ninety-five samples and twelve duplicate samples were collected from a depth of 3 to 6 inches. Forty-seven samples and six duplicate samples were collected from a depth of 6 inches to 2 feet. Forty-seven samples and seven duplicate samples were collected from a depth of 2 to 6 feet. Figure 1A shows the location of the 0 to 6 inch soil samples. Figure 1B shows the location of the 0 to 6 foot soil locations. A summary of the analytical results from the surface and subsurface soil samples that were evaluated in this HHRA is provided in Appendix A.

2.2 Site Sediment Data

Thirteen sediment samples were collected from nine locations from the Drainage Ditch that runs from the southwest corner of the Site to the northeast corner of the Site in December 2006. Nine surface samples, 0 to 6 inch depth, were collected, along with two duplicate samples. Two deeper samples, 6 inch to 2 feet depth, were collected from two of the nine locations. Figure 1C shows the location of the sediment samples. A summary of the analytical results from the sediment samples is provided in Appendix A.

2.3 COPC Screening

Maximum concentrations for all constituents detected at least once in surface soil, subsurface soil, or sediment were compared to the lower of the Florida Soil Cleanup Target Levels (FL SCTLs) for direct exposure to Commercial/Industrial Worker (FDEP, 2005) and the USEPA Industrial Soil Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites (USEPA, 2008a). Prior to conducting the screening the lower of the two screening values (i.e., the lower of SCTL or RSL) was divided by 10, as requested by FDEP. Table 1 shows the screening values used to evaluate the soil and sediment data. Note that industrial surface soil screening levels were consistently applied to subsurface soils and sediments even though potential exposure to subsurface soils and sediments is expected to be much lower than potential exposure to soils, and, thus soil screening levels are not really applicable to sediments.

Duplicate samples were averaged before the constituents were screened. To average the duplicates, the following rules were followed. If a constituent was detected in both the sample and the duplicate, the concentration was the arithmetic average at the

sampling location. If a compound was detected in a sample but not detected in the duplicate, then the detected concentration was conservatively used to represent that sample. If a constituent was not detected in either the sample or the duplicate, the lower detection limit was used to represent that sample.

The TCDD-TEQ concentration was calculated for each soil and sediment sample prior to the comparison of dioxin and furan congener concentrations to screening values. Dioxin and furan congeners are conservatively assumed to have analogous modes of action in their carcinogenic toxicity (van den Berg et al., 2006). Toxic equivalent factors (TEFs) have been developed to relate the carcinogenic potency of all other congeners to the potency of TCDD (van den Berg et al., 2006). These TEFs were applied to concentrations of individual dioxin and furan congeners in each sample and the total TCDD-TEQ was calculated for each sample. If one of the congeners was not detected in any particular sample, half of the detection limit for that congener was used in the calculation of TCDD-TEQ for that sample. Table 2 presents the TCDD TEFs used in the TCDD-TEQ calculations. TEFs developed by van den Berg et al. (2006) were used in the HHRA because they represent the most recent evaluation of the relative carcinogenic potency of the different 2,3,7,8-substituted dioxin and furan congeners. TEFs presented in FDEP (2005) are based upon a set of TEFs (van den Berg et al., 1998) that have been superseded by those presented in van den Berg et al. (2006).

Similar to dioxin and furan congeners, potentially carcinogenic polycyclic aromatic hydrocarbons (pcPAHs) are also assumed by USEPA to have analogous modes of action in their toxicity (USEPA, 1993). TEFs have been developed to relate the potency of all other pcPAHs to the potency of benzo(a)pyrene (BaP) (USEPA, 1993). These TEFs were applied to concentrations of pcPAHs in each sample and the total BaP toxic equivalent (BaP-TE) was calculated for each sample. If one of the pcPAHs was not detected in any particular sample, half of the detection limit for that pcPAH was used in the calculation of BaP-TE for that sample. Table 3 presents the pcPAH TEFs used in the BaP-TE calculations.

Four constituents lacked screening values in either the FL SCTL table or the RSL table. These included: 4-bromophenyl phenyl ether, 4-chlorophenyl phenyl ether, dimethyl phthalate, and methylcyclohexane. 4-Bromophenyl phenyl ether, 4-chlorophenyl phenyl ether, and dimethyl phthalate were only detected once. For all three compounds, the single detection occurred in the same sample, SS067BA, but all three were not detected in the accompanying duplicate sample, SS067BB. Methylcyclohexane was detected in six of the 190 samples included in the surface soil (0 to 6 inches) and ten of the 279 surface and surface and subsurface soil samples (0 to 6 feet). None of the four constituents have toxicity values listed in IRIS; therefore they were excluded from further analysis.

Bis(2-chloroethyl)ether was detected above the screening level of 0.05 mg/kg in only one of the 279 soil samples collected to represent the depth of zero to six feet. The one sample, SS054AA, had a duplicate sample, SS054AB, collected in which bis(2-chloroethyl)ether was not detected. Bis(2-chloroethyl)ether is also not considered a COPC because it was only detected once and was not detected in the duplicate sample.

For all other constituents, if the maximum detected concentration exceeded its screening value, then the constituent in that medium was retained as a COPC.

Table 4A presents the COPC screening results for the 0 to 6 inch soil data. Table 4B presents the COPC screening results for the 0 to 6 foot soil data and Table 4C presents the COPC screening results for the sediment data. Table 5 compiles all of the COPCs by media.

Surface soil COPCs include arsenic, pcPAHs expressed as BaP-TE, pentachlorophenol, and dioxin and furan congeners expressed as TCDD-TEQ. In addition to these constituents, antimony, chromium, lead, mercury, 2-methylnaphthalene, and naphthalene are also COPCs in surface soil. Because maximum concentrations were used for screening COPCs, subsurface soil has the same set of COPCs as the surface soils, plus copper, mercury, acenaphthene, anthracene, carbazole, fluoranthene, fluorine, phenanthrene, and pyrene.

Sediment COPCs include arsenic, pcPAHs expressed as BaP-TE, pentachlorophenol, and dioxin and furan congeners expressed as TCDD-TEQ, as well as chromium, lead, and mercury. Table 5 lists the COPCs by media.

3.0 EXPOSURE ASSESSMENT

The risk assessment process requires the identification of exposure scenarios to assess the potential for adverse health effects from on-Site COPCs. While these scenarios represent hypothetical people and activities, they reflect the physical description of the Site, as well as the activities that may typically occur in these areas. Both current and reasonably foreseeable future potential exposures are evaluated.

The potential exposure assessment involves estimating the Average Daily Dose (ADD) for assessing potentially non-carcinogenic risks and the Lifetime Average Daily Dose (LADD) for estimating potential excess lifetime cancer risk of each COPC for each human receptor from all complete exposure pathways. This potential dose of a COPC, when combined with that COPC's dose-response value (or values) identified in the Toxicity Assessment, is used to estimate potential health risks.

A receptor's dose depends on:

- the COPC's concentration in various environmental media (e.g., soil, sediment);
- assumed biological characteristics and behaviors of an individual (e.g., body weight, ingestion rates of soil and sediment, skin surface area, frequency and duration of contact with each environmental medium, etc); and,
- COPC-specific parameters that influence COPC absorption.

If a COPC is absent from a medium or it is physically impossible for a receptor to contact a medium, then the exposure pathway is considered incomplete (USEPA, 1989), and there is no exposure to the receptor. Only potentially complete exposure pathways are evaluated in this risk assessment.

3.1 Exposure Areas

Nine exposure areas have been identified at the Site corresponding to the potential for different intensities of contact by receptors to soils and sediments in different parts of the Site. As requested by FDEP, AMEC conducted interviews with KI to determine which areas of the Site had greater exposure to on-Site KI workers. On August 11, 2008, AMEC interviewed John Spicuzza of KI to discuss Site-specific worker exposures. A questionnaire was then sent to Mr. Spicuzza and the Plant Manager at the Gainesville facility. On September 9, 2008, AMEC interviewed the Plant Manager in order to gain a better understanding of the current use of the Site by KI workers. The Plant Manager then supplied AMEC with a map of the Site dividing the Site into different areas based on varying characteristics and uses of different parts of the Site that the Plant Manager indicated influenced how often workers may contact environmental media in a particular part of the Site. Each exposure area is discussed below, along with the activities assumed to take place in each area and the relevant environmental media in each area. Site-specific exposure areas at the Site are shown in Figure 2.

3.1.1 Process Area

The Process Area (PA) consists of the area currently used for chromated copper arsenate (CCA) treatment and the adjacent treated pole storage area. Relevant exposure media sampled in this area include surface soil. The HHRA assumes that on-Site workers are present in this area and may be exposed to surface soils. Also, teenagers living in the vicinity of the Site could trespass on the Site and be potentially exposed to COPCs in process area surface soils.

3.1.2 Southwest Wooded Area

The Southwest Wooded Area (SWWA) consists of the area of the Site west of the driveway and south of the main office buildings. KI workers are reported to infrequently access this area. No active wood-treating or storage of material occurs on this portion of the Site. Relevant exposure media sampled in this area include surface soil. Although the area is not actively used, to be conservative, the Southwest Wooded Area surface soils are assumed to be infrequently contacted by the on-Site KI workers and teenage trespassers.

3.1.3 Western Active Area

The Western Active Area (WAA) consists of the area north of the southwest wooded area and is used to store un-treated poles that are delivered by rail. On-Site workers are reported to be present in this area of the Site daily. Western Active Area surface soils are assumed to be potentially contacted by the on-Site KI workers and teenage trespassers.

3.1.4 Northwest Grassed Area

The Northwest Grassed Area (NWGA) consists of the northwest corner of the Site that was recently divided from the Western Active Area. Grass has been planted in this area and daily Site activities do not occur in this area. Although the area is not actively used, to be conservative, surface soils in the Northwest Grassed Area are assumed to be infrequently contacted by the on-Site KI workers and teenage trespassers.

3.1.5 Boiler Area

The Boiler Area (BA) consists of the southeast corner of the Site, where the boiler is located and Site workers are present daily. The bathhouse is also located in this area but day-long exposure to soils in the BA is not assumed to occur as result of using the bathhouse and, thus, the potential risks estimated for this area do not apply to workers using the bathhouse. Relevant exposure media sampled in this area include surface soil. Boiler Area surface soils are assumed to be potentially contacted daily by on-Site KI workers. Surface soils in this area are assumed to potentially be contacted by teenage trespassers.

3.1.6 Eastern Active Area

The Eastern Active Area (EAA) consists of the area east of the Drainage Ditch and north of the Boiler Area and is used to store both untreated and treated poles. On-Site workers are assumed to be present in this area of the Site daily. Relevant exposure media sampled in this area include surface soil. Eastern Active Area surface soils are assumed to potentially be contacted by the on-Site KI workers and teenage trespassers.

3.1.7 Northeast Grassed Area

The Northeast Grassed Area (NEGA) consists of the northeast corner of the Site that was recently divided from the Eastern Active Area. Grass has been planted in this area and neither wood-treatment nor active storage of treated and untreated poles occurs in this area. Relevant exposure media sampled in this area include surface soil. To be conservative, the HHRA assumes on-Site KI workers and teenage trespassers may potentially contact surface soils in the Northeast Grassed Area.

3.1.8 Drainage Ditch

The Drainage Ditch (DD) is considered a separate exposure area because exposure intensity to COPCs in sediments is expected to be different from soils. The sediment exposure area consists of the Drainage Ditch that runs from the southwest corner to the northeast corner of the Site. The HHRA assumes that on-Site KI workers as well as teenage trespassers may potentially contact COPCs in sediments.

3.1.9 Entire Site

For the current and future utility worker and future construction worker, the Site was not divided into areas based on the assumption that these activities would be just as likely in any section of the Site in the future and could span more than one area. Thus, utility workers may potentially be exposed to COPCs in subsurface soils anywhere on the Site while doing maintenance on existing utility lines or installing new lines. Similarly, construction workers were assumed to potentially contact subsurface soils anywhere on the Site if and when construction activities occur in the future.

3.2 Receptors and Potential Exposure Pathways

Based on activities assumed to occur at the Site and the variable potential for contact with relevant environmental media in each of the exposure areas, four potential receptors have been identified for the deterministic risk assessment: on-Site KI workers; trespassers; utility workers; and construction workers. In addition, hypothetical on-Site KI workers are evaluated using the MEE model. Even though the refined MEE analysis is far more realistic than the conservative deterministic risk assessment in its representation of the parameters that may determine a KI worker's potential exposure and risk, it does not capture all of the potential characteristics that determine potential risk. For example, when determining the potential risks associated with exposure to soils in one of the active wood-treating exposure areas, all of a KI workers' daily exposure is assumed to come from that area; however, most workers probably do not

spend the entire day in a single exposure area nor does all of their daily exposure to soil come from the Site. So even though the MEE results are far more representative of potential risks than the results of the conservative deterministic risk assessment, they should not be viewed a representing actual KI workers. Consequently, the results of the MEE analysis are discussed as representing "hypothetical" KI workers.

In a letter dated August 8, 2008 entitled *Re: Preliminary Comments from the City of Gainesville and Alachua County Environmental Protection Department on Koppers Site Soils Risk Assessment* there was concern of homeless trespassers frequenting the Site. The Plant Manager stated on September 9, 2008 that there are no homeless individuals living on Site. Site employees do not see homeless people on the Site routinely and the Plant Manager, who has been Plant Manager at the Gainesville facility for 20 years, could only recall one incident with a homeless person on the Site. Based upon the information provided by the Plant Manager, there is no evidence of exposure of homeless trespassers to environmental media on the Site and, consequently, homeless trespassers are not evaluated quantitatively in the HHRA.

3.2.1 On-Site KI Workers

KI workers are assumed to be present in all areas of the Site; though depending upon information provided by KI, the intensity of contact with environmental media may vary between areas as described in more detail in subsequent sections of this report. Potentially complete exposure pathways include incidental ingestion, dermal contact, and inhalation of surface soil containing COPCs as well as potential ingestion of and dermal contact with sediments containing COPCs.

3.2.2 Teenage Trespassers

Although the Site has measures in place to prevent unauthorized access to the property, the HHRA conservatively assumes there is some potential for unauthorized individuals (i.e., trespassers) to gain access to the property. The HHRA assumes that any trespassers who come onto the Site are most likely to be adolescents. Young children are unlikely to be allowed to roam freely about without parental supervision and adults are not likely to participate regularly in such an activity. Trespassers are assumed to be teenagers aged 7-17 (with corresponding exposure duration of ten years) with the potential to trespass on all areas of the Site. Potentially complete exposure pathways include incidental ingestion, dermal contact, and inhalation of surface soil containing COPCs as well as potential ingestion of and dermal contact with sediments containing COPCs.

3.2.3 Utility Workers

Future utility workers may be exposed to soil on the Site while maintaining underground utility lines. In this event, soil excavation may occur, and utility workers may be exposed to COPCs in subsurface soil (0-6 foot depth interval). Potentially complete exposure pathways include incidental ingestion, dermal contact, and inhalation of subsurface soil containing COPCs.

3.2.4 Construction Workers

Future construction workers are assumed to be exposed to COPCs in subsurface soil (0-6 foot depth interval) while engaged in digging or other construction activities at the Site. Potentially complete exposure pathways include incidental ingestion, dermal contact, and inhalation of subsurface soil containing COPCs.

3.3 Average Daily Doses

This section describes the equations used to estimate potential average daily doses used to estimate non-carcinogenic and carcinogenic effects.

3.3.1 Non-Carcinogenic Effects

The Average Daily Dose (ADD) is an estimate of a receptor's potential daily intake of a COPC from oral, dermal and inhalation exposure to COPCs assumed to cause potential non-carcinogenic effects. “Average Daily Dose” is a term-of-art used in risk assessment and does not represent a true average because the assumptions used to derive it do not represent “averages”. According to USEPA (1989), the ADD should be calculated by averaging over the period of time for which the receptor is assumed to be exposed (i.e., averaging time equals exposure duration when estimating potential non-carcinogenic risk). The ADD for each COPC via each route of exposure is compared to the RfD for that COPC to estimate the potential hazard quotient associated with exposure to that COPC via that route of exposure. If the exposure duration is less than 10% of a person’s lifetime, the ADD represents a subchronic exposure while if it is greater than 10% it is assumed to represent a chronic exposure.

3.3.2 Carcinogenic Effects

For constituents assumed to be associated with potential carcinogenic effects, the Lifetime Average Daily Dose (LADD) is an estimate of potential daily intake over the course of a lifetime. In accordance with USEPA (1989), the LADD is calculated by averaging the estimated exposure over the receptor's entire lifetime (assumed to be 70 years). The LADD for each COPC via each route of exposure is combined with the cancer slope factor for that COPC in order to estimate the potential excess lifetime cancer risk assumed to be associated with exposure to that COPC via that route of exposure.

3.3.3 Average Daily Dose Formulas

The formulas for estimating a receptor's potential average daily dose are presented in the following sections.

Ingestion of soil or sediment

$$\text{ADD (or LADD)} = \frac{EPC \times IR_s \times RAF \times FI \times EF \times ED \times CF}{BW \times AT}$$

where:
ADD = Average daily dose (potential subchronic or chronic exposure) (mg/kg-day)
LADD = Lifetime average daily dose (potential carcinogenic exposure) (mg/kg-day)
EPC = Exposure point concentration (mg/kg)
IR_s = Ingestion rate (mg/day)
RAF = Oral-soil/sediment relative absorption factor (dimensionless)
FI = Fraction of daily exposure from the Site (dimensionless)
EF = Exposure frequency (d/yr)
ED = Exposure duration (yr)
CF = Units conversion factor (10^{-6} kg/mg)
BW = Body weight (kg)
AT = Averaging time (equal to: EDD x 365 d/yr for ADD; 25,550 for LADD) (day)

Dermal contact with soil or sediment

$$\text{ADD (or LADD)} = \frac{EPC \times SSA \times AF \times RAF \times FI \times EF \times ED \times CF}{BW \times AT}$$

where:
ADD = Average daily dose (potential subchronic or chronic exposure) (mg/kg-day)
LADD = Lifetime average daily dose (potential carcinogenic exposure) (mg/kg-day)
EPC = Exposure point concentration (mg/kg)
SSA = Exposed skin surface area (cm^2)
AF = Soil/sediment adherence factor (mg/cm^2)
RAF = Dermal-soil/sediment relative absorption factor (dimensionless)
FI = Fraction of daily exposure from the Site (dimensionless)
EF = Exposure frequency (d/yr)
ED = Exposure duration (yr)
CF = Units conversion factor (10^{-6} kg/mg)
BW = Body weight (kg)
AT = Averaging time (equal to: EDD x 365 d/yr for ADD; 25,550 for LADD) (d)

Inhalation of Dust

$$\text{ADD (or LADD)} = \frac{EPC \times IR \times RPM \times RAF \times ET \times EF \times ED \times CF}{BW \times AT}$$

where:
ADD = Average daily dose (potential subchronic or chronic exposure) (mg/kg-day)
LADD = Lifetime average daily dose (potential carcinogenic exposure) (mg/kg-day)
EPC = Exposure point concentration (mg/kg)

IR = Inhalation rate (m^3/hr)
RAF = Inhalation-soil/sediment relative absorption factor (dimensionless)
ET = Exposure time (hr/d)
EF = Exposure frequency (d/yr)
ED = Exposure duration (yr)
CF = Units conversion factor (10^{-6} kg/mg)
RPM = Respirable particulate concentration in air (mg/m^3)
BW = Body weight (kg)
AT = Averaging time (equal to: EDD x 365 d/yr for ADD; 25,550 for LADD) (d)

3.3.4 MEE Model Average Daily Dose Formulas

Appendix E provides detail concerning the ADD and LADD calculations performed by the MEE model. The same basic equations used in the deterministic risk calculations described above are also used for the MEE analysis. However, as described in Appendix E, they are iterated thousands of times to simulate a hypothetical receptor's potential day to day exposure and develop a more refined estimate of potential exposure and risk.

3.4 Methodology for Estimating Exposure Point Concentrations

EPCs were estimated using all analytical data collected from field investigations conducted from 1995 through present. Many of the data were collected during the 2006 comprehensive Site-wide soil and sediment sampling event (AMEC, 2007). The post-1995 dataset used in this risk assessment encompasses the entire Site, including all known and suspected source areas.

3.4.1 EPCs for Soils

Because receptors have the potential to be exposed to soil from differing depth intervals, EPCs were developed for both surface soil (0-6 in. below ground surface (bgs)) and subsurface soil (0-6 ft bgs). During the 2006 sampling event, samples were collected from multiple depth intervals. For example, at many locations in 2006, samples were collected from 0-3 in. bgs, 3-6 in. bgs, 6 in.-2 ft bgs, and 2-6 ft bgs. When multiple samples were collected at various depths at the same soil sample location, an arithmetic average concentration was calculated to represent the surface soil (0-6 in. bgs) concentration and subsurface soil (0-6 ft bgs) concentration for each COPC at each sampling location. Figure 1A shows all sample locations used in the calculation of surface soil EPCs. Figure 1B shows all sample locations used in the calculation of subsurface soil EPCs. Concentration data are not available for all COPCs at all sampling locations.

Once arithmetic averages were estimated for each sample point, EPCs in surface and subsurface soil were estimated using spatially-weighted averages to account for the varying densities of sampling locations on different parts of the Site.

Spatially-weighted averages for each exposure area (see Section 3.1) were calculated using a common geostatistical approach, Thiessen polygons. Geostatistical methods have been researched, used, and endorsed by USEPA for approximately the past two decades. The usefulness of geostatistical tools to help overcome variation in sampling distribution is described in several USEPA documents published over the past twenty years (Breckenridge et al, 1991; USEPA, 2001a). USEPA began research into geostatistical methods around 1985, and has developed its own geostatistical software tools including GEO-PACK and GEO-EAS, which became available in 1990 and 1991, respectively (USEPA, 1990; USEPA, 1991). Perhaps most notably, risk assessment guidance published by USEPA includes use of geostatistical methods to improve data analysis and to help determine the EPC.

The Thiessen polygon technique was selected as the most appropriate spatial tool because it captures the representativeness of the sampling locations across the evaluated area without any biases that may be introduced by more complex interpolative geospatial tools such as Kriging or splining.

The Thiessen polygon geostatistical approach involves using software (for example, ArcGIS) to draw polygons so that each polygon contains one sample point, and all unsampled points in a polygon are closer to that polygon's sample point than to any other polygon's sample point. All soil within a polygon is then assumed to have the same concentration as that polygon's sample point. Once the polygons were determined, exposure area boundaries were overlaid. If a polygon spanned multiple exposure areas, the portion of the polygon within the boundaries of any particular exposure area was assumed to represent the soil concentration within that portion of the polygon, even if that polygon's sampling point was located outside of that particular exposure area. A spatially weighted average concentration for an exposure area is calculated by considering the fraction of the total exposure area that each individual polygon represents. This spatially weighted average concentration represents a central tendency estimate of the exposure point concentration in the exposure area.

Not all COPCs were analyzed in every sample; therefore, Thiessen polygons were drawn for each COPC. Figures 3B through 3E show the Thiessen polygons used to calculate EPCs for 0 to 6 inches soil data for the various COPCs included in the risk assessment. Figures 4A through 4G show the Thiessen polygons used to calculate EPCs for 0 to 6 foot soil data for the various COPCs included in the risk assessment.

A bootstrapping procedure was used to develop a 95% upper confidence limit (UCL) point estimate of the spatially weighted average concentration in each exposure area. The use of bootstrapping techniques to represent confidence intervals is well-established. USEPA has supported several technical papers describing the use of bootstrapping techniques as a robust means to estimate the upper confidence limit of mean concentrations in environmental datasets (Singh et al., 1997; USEPA, 2002).

Bootstrap sampling (with replacement[1]) was performed on the dataset to generate a "sample" of concentrations from the dataset, with the size of the sample equal to the number of data points in the dataset (i.e., equal to the number of polygons in an exposure area). The procedure selects the specified number of samples, estimates a spatially-weighted mean of the data points in that sample, stores that spatially-weighted mean of that sample, and then repeats the process until the specified number of means has been calculated. A total of 5000 bootstrap samples were extracted from the dataset, resulting in a distribution of 5000 mean concentrations for each exposure area. Percentiles of the distribution of sample means were computed, and the 95th percentile of the cumulative distribution of sample means was identified for each exposure area.

The process of generating 5000 sample means and identifying the 95th percentile of the distribution of sample means was repeated a total of four times and the mean values from these replicates were used as the inputs for each percentile for each COPC in each exposure media in each exposure area. The relative standard deviation (RSD) values across the replicates represent the stability of the bootstrap runs. Although a larger number of replicates could be used, the calculated RSD values were typically less than 1% for any given percentile suggesting that four replicates were sufficient to demonstrate the stability of the results of the bootstrap runs. The mean of the 95th percentiles from the four distributions of sample means for each exposure area was estimated and selected as the EPC for each exposure area. Appendix B presents the results of the bootstrapping methodology for all COPCs in 0 to 6 inch soil and 0 to 6 foot soil intervals. The distribution of means for each exposure area was used in the MEE model and was treated as a variability parameter in the day loop of the MEE model. Table 6 summarizes the 95th UCLs for the deterministic risk assessment that was generated using the bootstrap approach for each of the evaluated EPCs in soils.

3.4.2 EPCs for Sediments

Nine 0 to 6 inch sediment samples and two 6 inch to 2 foot samples were collected from the Drainage Ditch (DD). The nine surface sediment samples were used to develop EPCs for sediment because receptors are not expected to contact sediments deeper than 6 inches. EPCs for sediments were developed using the same spatially-weighted approach (i.e., bootstrapping of spatially-weighted concentration data developed using Thiessen polygons) employed for surface soils, except that the area represented by a particular sediment sample corresponds to a specific length of the DD because the risk

[1] Sampling with replacement refers to the iterative practice of randomly selecting a value from the expanded dataset, storing that value for future use, and "replacing" that value back into the expanded dataset so that the expanded dataset retains the same number of data points. Alternatively, sampling without replacement would entail randomly selecting a value from the expanded dataset, storing that value for future use, and randomly selecting another value from the expanded dataset, which then has one less data point available for selection after each successive iteration. Sampling with replacement more closely approximates the concentration a receptor visiting a site may be exposed to. A receptor contacting a site over an extended period of time may contact the same location multiple times over months or years. This is equivalent to sampling with replacement where the same point can be selected over and over again. Sampling without replacement would be equivalent to a location not being available for contact once a receptor contacted it the first time.

assessment assumes the ditch has a similar width across the entire Site. Figure 1C shows all sample locations used in the calculation of sediment EPCs. Figure 4H shows the length of the DD assigned to each sample used to calculate EPCs for the various COPCs included in the risk assessment and Table 6 summarizes the 95% UCL for each sediment COPC.

3.5 Exposure Parameters

In this section exposure parameters for the four types of on-Site receptors included in the HHRA are presented. As described above, all receptors (KI workers, trespassers, construction workers, and utility workers) are included in the conservative deterministic risk assessment. Only hypothetical KI workers, the receptor with the largest potential exposure based upon the results of the conservative deterministic risk assessment, were included in the MEE model. Point estimates for exposure assumptions used in the deterministic assessment are developed and discussed below for all receptors. Distributions of exposure parameters are developed only for hypothetical KI workers. For each exposure parameter described below, the distribution used in the MEE model is presented first, followed by the point estimates used in the conservative deterministic assessment. Table 7A summarizes exposure parameters used in the deterministic risk assessment for the on-Site KI worker. Tables 7B, 7C, and 7D summarize the exposure parameters used in the deterministic risk assessment for the trespasser, utility worker and construction worker, respectively. Figures 5A through 5J present summaries of the distributions used for exposure parameters in the MEE model.

For nearly all of the exposure parameters for the KI worker, the deterministic values were based upon the distributions developed for the MEE model. The 90th or 95th percentiles of the distributions were typically used. Site-specific information was used to the extent available and included discussions with the Plant Manager of the KI facility in Gainesville, concerning on-Site worker activity patterns. Details regarding the development of the MEE model distributions and the deterministic values are presented below.

3.5.1 Soil/Sediment Ingestion Rate

The *Exposure Factors Handbook* (USEPA, 1997) provides adult incidental soil ingestion rates, ranging from 0.5 to 100 mg/day, based primarily on a 1990 study conducted by Calabrese et al. (1990). A more recent study of adults by the same investigators (Stanek et al., 1997) includes a number of improvements over the 1990 study and provides more reliable daily estimates of incidental soil ingestion. However, the 1997 study was not without complications. Of the ten adults participating in the study, one had an unusually high soil ingestion estimate (2 grams) for the first day of the study week. The high estimate resulted in an inflated upper percentile estimate of the overall ingestion rates. Dr. Calabrese (a co-author of the Stanek et al. paper) reported that the subject had four times higher freeze-dried fecal weight on the first day than on any other day of the study, suggesting that the subject's excretion on that first day reflected a multi-day accumulation, instead of just one day, as assumed in the calculations. This fact confirms that the 95th percentile value from this study, which is driven by the result for this one subject, is not only uncertain but substantially overestimated. Due to the

aberrant result from this one participant, Dr. Calabrese (2003) has recommended that the upper 75th percentile (49 mg/day, rounded to 50 mg/day) from the Stanek et al. (1997) study is the most appropriate value to use as an estimate of high-end incidental soil ingestion by adults. In addition, Calabrese (2003) recommended 10 mg/day for the central tendency estimate, which is consistent with the adult mean daily soil ingestion rate of 6 mg/day reported in Stanek et al. (1997).

Based on this information, this risk assessment develops a distribution of soil ingestion rates assuming a triangular distribution, setting 10 mg/day as the most likely value, 0.5 mg/day as the minimum value and 50 mg/day as the maximum value. The minimum value represents the low end of the range provided in the *Exposure Factors Handbook* (USEPA, 1997), and the most likely and maximum values are the central tendency and high-end rates recommended by Calabrese (2003). The same distribution was used for all on-Site KI workers for the MEE model. A tabular and graphic summary of the incidental soil/sediment ingestion rate distribution is presented in Figure 5A. The incidental soil/sediment ingestion rate distribution was treated as a variability parameter in the day loop of the MEE model.

For the deterministic risk assessment, all on-Site KI workers are assumed to have an incidental soil ingestion rate of 50 mg/day, the maximum of the distribution used in the MEE model and equal to the high soil ingestion rate recommended by Calabrese (2003) as well as the soil ingestion rate used by FDEP in calculating SCTLs. Teenage trespassers are assumed to inadvertently ingest soil at a rate of 100 mg/day, twice the value used for on-Site workers.

USEPA included a potential soil ingestion rate of 330 mg/day for construction workers in its recently published Supplemental Soil Screening Guidance (2001b). This soil ingestion rate is intended for high intensity soil exposures, such as digging and working directly with subsurface utilities. Such intense excavation activities may potentially occur during the short-term utility worker exposures, but are not likely to occur during the entire assumed construction worker exposure duration of six months. This risk assessment assumes that construction workers may experience high-intensity soil exposures for ten days (assumed to represent the number of days that active earth movement would take place when constructing a building) and that a lower soil ingestion rate (100 mg/day, which still is two-fold higher than USEPA's recommended soil ingestion rate for workers) occurs during the remainder of the construction worker exposure duration (120 days). For the construction worker exposure scenario, a weighted average potential soil ingestion rate of 118 mg/day was derived assuming ten days of exposure at 330 mg/day and 120 days of exposure at 100 mg/day. The utility worker is assumed to have a soil ingestion rate of 330 mg/day and the construction worker is assumed to have a soil ingestion rate of 118 mg/day (Table 7C).

3.5.2 Exposure Frequency

Exposure frequency depends on the activity level for each area of the Site. Based on conversations with the KI Gainesville facility Plant Manager, on-Site KI workers may be in the following areas on a daily basis: the Boiler Area (BA); Western Active Area (WAA);

Eastern Active Area (EAA); and, the Process Area (PA). Also, the workers are more likely to receive a payout for vacation time rather than taking time off for vacation. Workers receive 10 paid statutory holidays that are typically observed. Therefore, for the BA, WAA, EAA and PA, the distribution of exposure frequency in the MEE model is based on a triangular distribution, setting 250 days as the most likely value, 240 days as the minimum and 260 days as the maximum. The most likely value represents a 5-day workweek for 52 weeks minus 10 holidays. The minimum value represents a 5-day workweek for 52 weeks minus 10 holidays and 10 days of vacation, and the maximum value represents a 5-day work week for 52 weeks with no holiday or vacation time. On-Site KI workers are not expected to be present in the Southwestern Wooded Area (SWWA), the Northwest Grassed Area (NWGA), and the Northeast Grassed Area (NEGA) on a daily basis. Workers typically spend up to 2 days/week in these areas. Thus, for the SWWA, NWGA, and NEGA, the exposure frequency distribution for the MEE model is based on a triangular distribution, setting 100 days as the most likely value, 50 days as the minimum and 150 days as the maximum. Assuming that a worker takes off 10 holidays, the most likely value represents 2 days per week for 50 weeks, the minimum value represents 1 day per week for 50 weeks, and the maximum value represents 3 days per week for 50 weeks. A tabular and graphic summary of the exposure frequency distribution is presented in Figure 5B. The exposure frequency distribution was treated as a variability parameter in the variability loop of the MEE model.

For the deterministic risk assessment, on-Site KI workers in the PA, WAA, BA, and EAA are assumed to have an exposure frequency of 250 days per year, equal to the default exposure assumptions used by USEPA for industrial/commercial workers and equal to the mean of the distribution used in the MEE model. On-Site workers in the SWWA, NWGA, and NEGA are assumed to have an exposure frequency of 100 days per year to surface soils equal to the mean of the distribution used in the MEE model. Based upon information provided by the Plant Manager, the Drainage Ditch is contacted very infrequently by KI workers; therefore, workers are conservatively assumed to have an exposure frequency of 1 day per year to sediments in the Drainage Ditch.

Trespassers

Given the relative size of the exposure areas and wood treating-related activities occurring within them, trespassers are assumed to potentially contact surface soils in the PA once every three months and to contact surface soils in the SWWA, WAA, NWGA, BA, EEA and NEGA once a month. Trespassers are also conservatively assumed to contact sediments in the DD once a month. The assumption of contact once a month is conservative given that trespassers are rarely seen on-Site and that the DD is overgrown with brush making it hard to access.

Utility and Construction Workers

A utility worker may contact subsurface soil five days a year. This corresponds to a subsurface utility line repair that lasts a week (five days, Table 7D). The construction worker is assumed to contact subsurface soil five days per week for two weeks of a

construction project that is assumed to take 6 months (26 weeks) to complete (Table 7C). These are highly conservative estimates based on information provided by the KI Plant Manager, for these types of site activities.

3.5.3 Exposure Duration

The distribution for exposure duration was based on job tenure data specific to the KI workers at the Gainesville facility. Employment data, including hire and termination dates where appropriate, for the years between 1970 and the present were provided for both past and current KI workers. Because termination dates are unavailable for workers that are currently employed, only employment data for those workers not actively employed were used. Data for workers, who worked predominately in the office and had no or very limited contact with outside soil, were also excluded from the data set. Based on employment data for 95 workers, total years of employment were calculated for each worker. The percentiles of the observed job tenures were used as the exposure duration distribution. The same distribution was used for on-Site KI workers in all areas of the Site. A tabular and graphic summary of the exposure duration distribution is presented in Figure 5C. The exposure duration distribution was treated as a variability parameter in the variability loop of the MEE model.

For the deterministic calculation, the on-Site KI workers are assumed to have an exposure duration of 23.9 years, which is the percentile 95th of the job tenure data and is similar to the default exposure duration used by USEPA for industrial workers of 25 years. Trespassers are assumed to have an exposure duration of ten years. Utility workers are assumed to be potentially exposed to COPCs in on-Site soils for 25 years, corresponding to the same utility workers being engaged in utility repair work every year for each of the 25 years. Based upon information provided, this is a very conservative assumption. Construction workers are assumed to have an exposure duration of 130 days for one year, corresponding to potential exposure that may be associated with a construction project lasting approximately six months (Table 7C).

3.5.4 Body Weight

Based on discussions with the Gainesville facility Plant Manager, nearly all outdoor KI workers are male. Therefore the body weight MEE distribution was developed for adult males and based on average body weights at different quantiles reported in the *Exposure Factors Handbook* [Tables 7-4 and 7-5 of USEPA (1997)], for “all races” and age category “18-74” years. The distribution was “smoothed” by using these values as inputs to a cumulative function. The same distribution was used for all on-Site KI workers. A tabular and graphic summary of the body weight distribution is presented in Figure 5D. The body weight distribution was treated as a variability parameter in the variability loop of the MEE model.

For the deterministic risk assessment, on-Site KI workers are assumed to have a body weight of 78.1 kg, the average of male adult bodyweights reported in the *Exposure Factors Handbook* (USEPA, 1997). Teenage trespassers are assumed to have a body weight of 45 kg, the mean for males and females for 7 to 17 year olds. Utility workers and construction workers are assumed to have a body weight of 71.5 kg, the mean for male and females of this age group.

3.5.5 Exposed Skin Surface Area

An estimate of the potentially exposed skin surface area (SSA) is required to estimate potential exposure via the dermal exposure pathway. SSA varies with body weight represented by the following equation (FDEP, 2005): Total body surface area (cm^2) = body weight (kg) $^{0.6821}$ * 1025. SSA also varies depending on what portion of a worker's total body surface area is exposed. According to the KI Plant Manager, all on-Site workers are required to wear long pants, but are allowed to wear short-sleeved shirts. In addition, PA area workers are required to wear chemical resistant gloves and KI workers in other areas are not. Therefore, for the SWWA, WAA, NWGA, BA, EAA, and NEGA worker, the risk assessment assumes that the face, forearms and hands are exposed; for the PA worker, the risk assessment assumes that the face and forearms are exposed. FDEP (2005) provides the percentage surface area for a number of body parts in relation to total body surface area. The percentages for hands and forearms are 4.98% and 6.46%, respectively. A percentage for the face is not provided; however, the percentage for the head is 6.64%. USEPA (2004) assumes that the surface area for the face is 1/3 of head surface area. Based on this, the percentage for face is assumed to be 2.21%. For the SWWA, WAA, NWGA, BA, EAA, and NEGA worker, the three exposed body parts represent 13.65% of the total body surface area. For the PA worker, the two exposed body parts represent 8.67% of the total body surface area. The product of these surface area fractions and the total surface area represents the SSA for the different worker types. A tabular and graphic summary of the SSA distribution is presented in Figure 5E for PA workers and workers in other areas of the Site. The exposed skin surface area distribution was treated as a variability parameter in the day loop of the MEE model.

For the deterministic risk assessment, on-Site KI workers in the PA are assumed to have 1,533 cm^2 of potentially exposed skin on their face and forearms (USEPA, 1997). KI workers in the process area are required to wear chemical-resistant gloves. Workers in other areas of the Site are not required to wear these gloves, therefore only workers in the process area were not assumed to have their hands exposed. Note, however that this is a conservative assumption. The KI Plant Manager indicated that most workers wear gloves and that replacement gloves are always available to workers. Thus, most workers hands may not be exposed to COPCs in soil. On-Site KI workers in the SWWA, WAA, NWGA, BA, EAA, NEGA and the DD are assumed to have 2,373 cm^2 of potentially exposed skin on their face, hands, and forearms (USEPA, 1997).

Trespassers are assumed to have 5,048 cm^2 skin exposed to soil (corresponding to the face, forearms, hands, lower legs, and feet) (USEPA, 1997). The utility worker and the construction worker are assumed to have 2,478 cm^2 skin (corresponding to face, forearms, and hands) (USEPA, 1997) exposed to soil.

3.5.6 Soil/Sediment Adherence Factor

Separate distributions for dermal adherence factors were developed for workers in the PA and workers in all other areas of the Site, because the exposed skin surface area differs between PA workers and workers in all other areas of the Site. As noted above, the face, forearms and hands are potentially exposed for workers in all areas except the

PA. The distribution for the forearms is defined as beta general with a minimum of 0.0021 mg/cm^2, maximum of 0.36983 mg/cm^2, α1 of 0.40624 and α2 of 2.0055, truncated at 0 mg/cm^2. The distribution for the face is defined as logistic with an α of 0.027197, and β of 0.018828, truncated at 0 mg/cm^2. For the hands, the distribution is also defined as logistic with an α of 0.178786 and a β of 0.074457, truncated at 0 mg/cm^2. The input values for the distribution are from the *Exposure Factors Handbook* (USEPA, 1997) for all adult exposure scenarios in soil. PA workers are assumed to have only the forearms and face exposed. These distributions are defined in the same manner as those generated for the forearms and face for workers in other areas of the Site.

The dermal adherence factors are weighted based on exposed skin surface area. For all other workers, the weighting factors are 0.36, 0.49 and 0.15 for the hands, forearms and face, respectively. For the PA worker, the weighting factors are 0.77 and 0.23 for the forearms and face, respectively. Dermal adherence distributions were derived by applying the weighting factors to their respective body part distributions and then summing across those weighted distributions. A tabular and graphic summary of the soil/sediment adherence factor distribution is presented in Figure 5F for PA workers and workers in other areas of the Site. Soil/sediment adherence factor distributions were treated as an uncertainty parameter in the uncertainty loop of the MEE model.

For the deterministic risk assessment, on-Site KI workers in the PA are assumed to have a surface area weighted soil adherence factor of 0.168 mg/cm^2 (USEPA, 1997). On-Site KI workers in the SWWA, WAA, NWGA, BA, EAA, NEGA, and the DD are assumed to have a surface area weighted soil adherence factor of 0.206 mg/cm^2 (USEPA, 1997). Trespassers are assumed to have a surface area weighted soil adherence factor of 0.145 mg/cm^2 (USEPA, 1997). The soil adherence factor for the utility worker is assumed to be 0.24 mg/cm^2 (USEPA, 1997) and the soil adherence factor for the construction worker is assumed to be 0.14 mg/cm^2 (USEPA, 1997).

3.5.7 Inhalation Rate

The distribution for inhalation rates is based on a triangular distribution, setting 1.44 m^3/hour as the most likely value, 0.96 m^3/hour as the minimum value and 2.46 m^3/hour as the maximum value. These values were derived from Lin et al. (1993), the data source also used as the basis of inhalation rates recommended in the *Exposure Factors Handbook* (USEPA, 1997). Linn et al. (1993) reported mean inhalation rates for construction workers under four activity conditions – sitting/standing, walking, carrying, and performing their trade. According to the Gainesville Plant Manager, activities at the Site require only slight to moderate exertion primarily because most of the heavy work is accomplished with equipment. Therefore, it is reasonable to select inhalation rates from across all four activity conditions. The most likely value (1.44 m^3/hour) represents the median value across all activity conditions; the minimum value (0.96 m^3/hour) represents the minimum rate across all categories; and the maximum value (2.46 m^3/hour) represents the maximum rate across all activity conditions. The same distribution was used in all areas of the Site because the range of worker activity was assumed to potentially be similar in all areas of the Site. A tabular and graphic summary of the

inhalation rate distribution is presented in Figure 5G. The inhalation rate distribution was treated as a variability parameter in the day loop of the MEE model.

For the deterministic risk assessment, all on-Site KI workers are assumed to have an inhalation rate of 2.18 m^3/hour, which is the 95th percentile from the MEE distribution (Linn at al, 1993). Trespassers are assumed to have an inhalation rate of 1.6 m^3/hour (USEPA, 1997). Utility workers and construction workers are assumed to have an inhalation rate of 2.5 m^3/hour (USEPA, 1997).

3.5.8 Exposure Time for Inhalation Exposures

Exposure time in each area of the Site was determined from information about worker behavior provided by the KI Plant Manager. An on-Site worker may be present in the BA, WAA, EAA, and the PA. The distribution for exposure time for workers in these areas is based on a triangular distribution, setting 8 hours/day as the most likely value, 8 hours/day as the minimum and 10 hours/day as the maximum. The most likely value and minimum value represent a typical work day while 10 hours represent a typical maximum work day. According to the Plant Manager, workers spend two hours or less each day in the following areas: the SWWA, the NWGA, and the NEGA. Thus, for the SWWA, NWGA, and NEGA, exposure time distribution is based on a triangular distribution, setting 2 hours/day as the most likely value, 1 hour/day as the minimum and 3 hours/day as the maximum. A tabular and graphic summary of the exposure time distribution is presented in Figure 5H. The exposure time distribution for inhalation exposures was treated as a variability parameter in the day loop of the MEE model.

Note, that the exposure time assumptions used to estimate potential risks to hypothetical KI workers in the BA, WAA, EAA, and the PA assume that on the days that a hypothetical KI worker is in that exposure area, he or she spends the entire day in that area. This may not be true for many workers in these areas. Some workers may only be in that portion of the Site for one hour a day. It is also possible that during that hour, a worker may not be engaged in active wood treating operations and, thus, may not be exposed to soil in that area. For such workers, the potential excess lifetime cancer risks estimated by the HHRA, even by the refined MEE analysis, would represent significant overestimates of potential risk. Any actual risks would be substantially lower. Thus, simply because a worker may visit one of the exposure areas as part of their daily on-Site activity does not mean the potential exposure and risks estimated herein, apply to such a worker. In fact, they do not.

For the deterministic risk assessment, on-Site KI workers in the PA, WAA, BA, and EAA are assumed to be potentially exposed to fugitive dust for a standard 8 hour work day. On-Site KI workers in the SWWA, NWGA, and NEGA are assumed to be potentially exposed to fugitive dust for only 2 hours of the days they are in these areas. On-Site KI workers are not assumed to inhale sediments. Trespassers are assumed to have exposure to dust for 2 hours a day. Trespassers are not expected to inhale sediments. The utility worker and construction worker are assumed to be exposed to fugitive dust for 8 hours a day.

3.5.9 Fraction of Intake from the Site

The amount of a receptor's daily exposure to soil and sediment derived for a particular on-Site exposure area is likely to vary and will depend upon what fraction of the day a receptor may spend in that area. The basis for the different Fraction of Intake (FI) value for different receptor exposure area combinations are presented below:

- WAA, BA, EAA and PA workers potentially exposed to soils. On days that KI workers in the PA, WAA, BA, and EAA are on-Site, all of their potential ingestion and dermal exposure to soil is conservatively assumed to be comprised of on-Site soils (i.e., the FI is assumed to be 1.0). Again, it must be noted that, as described above for exposure time (Section 3.5.8) this assumption that all of a KI workers daily exposure to soil comes from a single exposure area will not apply to all workers who may be in these exposure areas. A worker who is an exposure area for less than the full day will have lower potential exposures and risks than estimated herein.

- SWWA, NWGA, and NEGA workers potentially exposed to soils. Based on information about worker activity provided by the KI Plant Manager the SWWA, NWGA, and NEGA are contacted less frequently than the active areas of the facility by KI workers and such contact typically lasts for only a portion of the day. Accordingly, potential ingestion and dermal exposures to soil are conservatively assumed to occur for two hours of a worker's eight hour shift. Therefore, only a quarter of incidental ingestion and dermal exposures come from soils in this area (i.e., for potential ingestion and dermal exposures, which assume a typical 8 hour day, the FI is assumed to be 0.25; for inhalation exposures, which account for exposure time, two hours of potential exposure in these areas is assumed).

- On-Site Workers potentially exposed to DD sediments. On days that KI workers are in the DD, all of their potential ingestion and dermal exposures to sediments are conservatively assumed to be comprised of on-Site sediments (i.e., the FI is assumed to be 1.0).

- Trespassers potentially exposed to soils or sediments. The KI Plant Manager, indicated that trespassers are almost never seen on-Site and that any such activity would be of short duration. Consequently, on days that trespassers are on-Site, one quarter (25%) of their potential ingestion and dermal exposures to soil (or sediment) are assumed to be from the Site (i.e., the FI is assumed to be 0.25).

- Utility and Construction Workers potentially exposed to soils. On days that utility workers and construction workers are on-Site, they are assumed to spend their entire time on-Site. All of their potential ingestion and dermal exposures to soil are assumed to be comprised of on-Site soils (i.e., the FI is assumed to be 1.0).

These same FI values were used in the MEE model when estimating potential oral and dermal exposures.

3.5.10 Averaging Time

When estimating potential excess lifetime cancer risks using either the MEE model or the deterministic risk assessment, on-Site KI workers were assumed to have an averaging time of 25,550 days, equal to 365 days per year times an assumed 70 year lifetime. Note that the current average life expectancy is closer to 80 years. Using 70 years results in a slight over-estimate of potential cancer risk.

Additionally for the deterministic risk assessment, the trespasser, utility worker, and construction worker were also assumed to have a life expectancy of 70 years when estimating the averaging time for assessment of potential carcinogenic effects.

For assessment of potential non-carcinogenic effects, the averaging time for the on-Site worker deterministic risk assessment is assumed to be 8,724 days, equal to the assumed exposure duration of 23.9 years times 365 days per year. For the MEE model, the non-cancer averaging time is derived using the same equations. However, because exposure duration varies across individuals modeled in the analysis, each individual has a unique non-cancer averaging time dependant upon his unique exposure duration. The teenage trespasser is assumed to have an averaging time of 10 years. The utility worker is assumed to have an averaging time of 25 years and the construction worker is assumed to have an averaging time of one year.

3.5.11 Respirable Particulate Concentration

Site-specific respirable particulate matter (RPM) data were not available. In the absence of site-specific data, the distribution of RPM values (as PM10) measured at two air monitoring stations in Gainesville: Site_ID #23, located in the residential area at NW 53rd Avenue & NW 43rd Street; and, Site_ID #1003, located in the urban/commercial area at 721 NW Sixth Street (http://www.epa.gov/aqspubl1/annual_summary.html) were used. Data from these stations represent annual values derived from hourly measurements. The quantiles (average, min., max., 10th%, 25th%, 50th%, 75%, 90th%, 95th%, and 99th%) were averaged across the datasets for each station and additional quantiles (e.g., 97.5th%) were calculated using linear interpolation. Although the environmental setting differs between these two locations, the quantiles are similar. The mean concentrations for station #23 and #1003 are 0.0195 and 0.022 mg/m^3, respectively. Because the mean for the urban location is slightly greater, the urban distribution was used in the MEE model. The same distribution was used for on-Site workers in all areas of the Site. A tabular and graphic summary of the respirable particulate concentration distribution is presented in Figure 5I. The RPM distribution was treated as a variability parameter in the day loop of the MEE model.

For the deterministic risk assessment, the urban dataset discussed above was also used. The RPM concentration was 0.0394 mg/m^3, which represents the 95th percentile of the urban RPM from the distribution.

3.5.12 Relative Absorption Factors

Relative Absorption Factors (RAFs) are included in the estimation of potential dose to account for differences in COPC absorption efficiency when comparing the experimental conditions experienced by a test animal in a laboratory to the natural conditions experienced by a human at a site (USEPA, 1989). For example, the study that served as the basis for the development of an RfD or CSF may have administered the constituent to the laboratory animal in a matrix very different from the environmental media to which humans are exposed at a site. Physiological differences between laboratory animals and humans must also be accounted for as these may influence the uptake of a constituent from an exposure matrix or medium. Therefore, it is not always appropriate to directly apply a dose-response value from a laboratory study to the potential dose estimated at a site for a particular receptor. In many cases, a correction factor in the estimation of potential risk is needed to account for differences between absorption in the dose-response study and absorption likely to occur upon human exposure to a constituent at a site. Without such a correction potential human health risk could be over- or under-estimated. RAFs are necessary to estimate oral, dermal, and inhalation exposure doses from any of the environmental media to which humans can be exposed at the site (soil or sediment).

The RAF is the ratio between the estimated human absorption factor for the specific medium and route of exposure, and the known or estimated absorption factor for the laboratory study from which the dose-response value was derived.

$$RAF = \frac{\textit{Fraction absorbed in humans in environmental exposure}}{\textit{Fraction absorbed in the dose} - \textit{response study}}$$

The use of an RAF allows the risk assessor to make appropriate adjustments if the efficiency of absorption between environmental exposure and experimental exposure is known or expected to differ because of physiological effects and/or matrix or vehicle effects.

RAFs can be less than one or greater than one, depending on the COPC and potential routes of exposure at a site. If the RfD or CSF is based on an administered dose, then the RAF is calculated as the ratio of the estimated absorption for the site-specific medium and route of potential exposure, to the known or estimated absorption for the laboratory study from which the RfD or CSF was derived (e.g., if the two are the same, then the RAF is 1.0). If the RfD or CSF is based on an absorbed or metabolized dose, then the known or estimated absorption or metabolism in humans is used for the RAF. In the absence of detailed toxicological information on a constituent of interest, a default value of 1.0 is used. The extent of absorption or metabolism may depend on the medium and route of exposure.

In addition, within the chronic risk characterization analysis many constituents are assessed separately for their potential carcinogenic risk and their potential non-carcinogenic risk. If the experimental studies from which the cancer slope factor and the reference dose are derived are known or estimated to have the same absorption

efficiency, then the RAFs used to estimate potential carcinogenic and non-carcinogenic doses are identical for a given route/medium situation. If, however, the absorption efficiencies differ, then there are two sets of RAFs, one for use with the cancer slope factor and one for use with the reference dose.

AMEC has summarized the route of exposure and the experimental matrix (diet, drinking water, corn oil gavage, etc.) used in the experimental study from which the relevant dose-response value was derived for many constituents. In addition, AMEC has reviewed scientific literature on the absorption and bioavailability of many constituents for the relevant routes of exposure and matrices. Based on these data, AMEC has summarized and derived scientifically defensible RAFs for many constituents. These RAFs are presented in Appendix C and Appendix G and are used to estimate potential exposures and risks.

For the MEE, the available peer-reviewed scientific publications on the oral and dermal relative absorption of BaP-TE, arsenic, pentachlorophenol, and TCDD-TEQ from soil were reviewed and an overall distribution of the expected relative bioavailability of each constituent was generated. A full discussion of these distributions and supporting data were provided to USEPA in "*Relative Absorption Factors (RAFs) for Oral and Dermal Absorption of Compounds in Soil Cabot Carbon/Koppers Site Gainesville, Florida*" (AMEC, 2008c) and is included in Appendix G. A tabular and graphic summary of the RAF distributions for arsenic, BaP, pentachlorophenol, and TCDD is presented in Figure 5J. A summary of the RAF distributions used in the MEE model is provided below. RAF distributions were treated as an uncertainty parameter in the uncertainty loop of the MEE model.

Oral Exposure

- Arsenic: A normal distribution was generated using the mean (0.163) and standard deviation (0.065) for the wood-treating site in Gainesville reported in Roberts *et al*. (2002). The deterministic RAF for arsenic was the 90th% of the MEE distribution (0.2465).

- BaP-TE: A normal distribution was generated using a mean (0.31) and standard deviation (0.166) based on bioavailability data reported in six different studies evaluated in AMEC (2008c). The deterministic RAF for BaP-TE was the 90th% of the MEE distribution (0.5286).

- Pentachlorophenol: A distribution of mean values was generated by combining distributions generated from the mean (and standard deviations) of bioavailability of pentachlorophenol from six soil types reported by Pu et al (2003). Lognormal distributions were used to generate initial distributions of the bioavailability factors for the individual soil types, which were then combined to calculate the distribution used in the MEE model. The deterministic RAF for pentachlorophenol was the 90th% of the MEE distribution (0.8992).

- TCDD-TEQ: A distribution of mean values was generated using a bootstrap of eight estimates of the mean bioavailability of TCDD from soil evaluated in AMEC (2008c). A bootstrap method was used (in lieu of the method used to generate

the pentachlorophenol distributions) since only the mean values were reported from these studies. The deterministic RAF for TCDD-TEQ was the 90th% of the MEE distribution (0.5)

Dermal Exposure

- Arsenic: A normal distribution was generated using a mean of 0.009 and standard deviation of 0.001. As discussed in AMEC (2008c), the mean and standard deviation were calculated from the dermal absorption using three dose levels reported in Wester et al. (1993), prorated to a typical work day. The deterministic RAF for arsenic was the 90th% of the MEE distribution (0.01)

- BaP-TE: A normal distribution was generated using a mean of 0.02 and standard deviation of 0.01. Data for this distribution are based on Wester et al. (1990) and Yang et al. (1989). The distribution is truncated at 0.01 and 1. The deterministic RAF for BaP-TE was the 90th% of the MEE distribution (0.034).

- Pentachlorophenol: A normal distribution was generated using a mean of 0.032 and a standard deviation of 0.01. The sources of these data are Wester et al. (1993) and Qiao et al. (1997). The distribution is truncated at 0.01 and 1. The deterministic RAF for pentachlorophenol was the 90th% of the MEE distribution (0.045).

- TCDD-TEQ: An exponential distribution was generated using a mean of 0.03 and a risk shift of 0.01, based on nine estimates of bioavailability of TCDD from soil. This was based on three studies [Poiger and Schlatter (1980), Shu et al. (1988) and Roy et al. (1990)] evaluated in AMEC (2008c). The deterministic RAF for TCDD-TEQ was the 90th% of the MEE distribution (0.079).

Inhalation Exposure

A review of the literature showed no suitable references for RAFs for arsenic, BaP-TE or pentachlorophenol. Therefore, the RAF was assumed to be 1 for these constituents in both the deterministic HHRA and MEE model.

- TCDD-TEQ: A fixed value of 55% was used for the deterministic HHRA and the MEE model, based on Nessel et al (1990).

4.0 TOXICITY ASSESSMENT

The Toxicity Assessment step involves quantifying the relationship between the magnitude of potential exposure to COPCs via a particular exposure pathway and the likelihood of an adverse health effect. Adverse health effects are characterized by USEPA as carcinogenic or non-carcinogenic. Non-carcinogenic effects are further divided into subchronic (for potential exposures lasting less that 10% of a lifetime) and chronic (for potential exposures lasting more than 10% of a lifetime). Dose-response relationships are defined by USEPA for oral and inhalation routes of exposure. The results of the Toxicity Assessment, when combined with the dose estimated in the Exposure Assessment, are used to estimate potential health risks.

Toxicity values are developed by USEPA, state regulatory agencies and other entities after a comprehensive scientific review of all available toxicological literature and dose-response information for a constituent. The toxicity values used in the preliminary deterministic conservative risk assessment for all COPCs (with the exception of lead) and for three of the four COPCs included in the MEE analysis are obtained from the following sources, in order of priority:

- USEPA's Integrated Risk Information System (IRIS) (USEPA, 2008b);
- USEPA Region 6 Human Health Medium-Specific Screening Levels, 2008 (USEPA, 2008a); and
- HEAST values as cited in the USEPA Region 6 Human Health Medium-Specific Screening Levels, 2008 (USEPA, 2008a).

As described below, the MEE analysis uses a distribution of cancer slope factors to estimate the potential excess lifetime cancer risks associated with potential exposure of on-Site KI workers to dioxins and furans. The scientific basis for the distribution of slope factors is presented in Appendix D. In addition, when evaluating the potential effects associated with potential exposure to lead, USEPA does not use RfDs and CSFs but has, instead, developed a biokinetic model (described below).

4.1 Toxicity Values for the Deterministic Risk Assessment

The subchronic toxicity values used to evaluate potential risks to the construction workers are presented in Table 8A. The chronic toxicity values used to evaluate potential risks to on-Site workers, trespassers, and utility workers are presented in Tables 8B and 8C for evaluation of potential non-carcinogenic and potential carcinogenic effects, respectively, associated with potential exposure to COPCs.

4.1.1 Lead Exposure

The potential for adverse effects from exposure to lead was evaluated for all receptors based on current guidance for evaluating lead exposures (USEPA, 2001c). The evaluation of lead exposures in soil and sediment to on-Site KI workers, trespassers, utility workers, and construction workers at the Site was evaluated using the Adult Lead

Model (ALM) (USEPA, 1999, 2001c). As a matter of default the ALM considers adult women's exposure to lead in soil. Note that to be conservative, the female default receptor is used in this risk assessment even though, as described above, the KI Gainesville Facility Manager indicated that all KI workers engaged in the actual treating of wood, are males. Although the trespasser is assumed to be between the ages of 7 and 17, and is not an adult, the IEUBK Model for Lead in Children is not appropriate as it models potential lead exposures of children ages 0 to 7 years old. Therefore, the ALM was judged to be more appropriate for the teenage trespasser and is used by this risk assessment to evaluate potential lead exposures of teenage trespassers as well as other potential receptors included in this risk assessment.

The ALM predicts the blood levels of lead that would likely occur in a pregnant woman and in her fetus from non-residential exposure to lead-containing soil and dust (e.g., a commercial scenario). The ALM incorporates population-based background blood lead levels as a starting concentration and predicts blood levels that will likely result after additional exposure to lead-containing soil occurs. The model also incorporates measures to control for the effects of population variability in background blood lead levels (i.e., geometric standard deviation (GSD) of background blood lead levels).

The ALM uses a simplified representation of lead biokinetics to predict quasi-steady state blood lead concentrations among adults who have relatively steady patterns of potential site exposures. The ALM predicts a range of fetal blood lead concentrations and associated probabilities that the stated fetal blood lead concentrations will exceed the threshold fetal blood level. The model assumes fetal blood lead concentrations are proportionate, with some variability, to the maternal blood lead concentrations in the model. The adult blood lead concentration is estimated as the sum of typical baseline blood lead concentrations (µg/dL) (representing measured average concentrations from population surveys (ranging from 1.5 to 1.7 µg/dL) and predicted blood lead concentrations in women receptors of child-bearing age exposed to lead at a site. In the evaluation conducted for this risk assessment, the most conservative assumptions about background blood concentrations and standard deviations were used.

The model assumes adequate exposure exists to result in a steady-state blood lead concentration (USEPA, 2001c) and assumes that exposure continues regularly and for an indefinite period of time. Potential trespasser exposures which occur infrequently and for short durations are not consistent with this assumption likely leading to an overestimate of potential blood lead levels in trespassers. The averaging time for the model defaults to 365 days per year assuming that exposure occurs on a year-round basis.

From the estimate of blood lead levels in women exposed to lead at the Site, the fetal blood lead level is estimated as an upper end (95th percentile). The ALM was developed to evaluate non-residential exposures to the fetus of a worker who develops a body burden as a result of non-residential exposure to lead. This body burden is available to transfer to the fetus for several years after exposure ends. Given that the fetus is considered by USEPA the most sensitive receptor to lead, exposures to a fetus are considered conservative estimates of exposures for male or female adult workers. The results from the ALM are discussed in Section 5.1.1.

In evaluating the potential risks associated with potential exposure to lead, an initial screening evaluation was conducted. That evaluation used the highest lead EPC estimated for any of the on-Site exposure areas to represent the potential concentration of lead in soil. If potential exposure to lead in soils from the exposure area with the highest EPC is not associated with an adverse effect, then exposure to lead in soils in other exposure areas will also not be associated with a potential risk precluding the need to run the ALM for every on-Site exposure area. For potential exposure to lead in sediments, the lead EPC for sediments was used. For most parameters, default ALM assumptions were used, with the exception of the exposure frequency, which was changed to be consistent with maximum assumed Site-specific exposures. The maximum soil exposure frequency used was 250 days per year and the maximum sediment exposure frequency used was 12 days per year.

4.1.2 Non-Carcinogenic Dose-Response

Constituents with known or potential noncarcinogenic effects are assumed to have a dose below which no adverse effect occurs, or conversely, above which an effect may be seen. This dose is called the threshold dose. In laboratory experiments, this dose is known as the No Observed Adverse Effect Level (NOAEL). The lowest dose at which an adverse effect is seen is called the Lowest Observed Adverse Effect Level (LOAEL). By applying uncertainty factors to the NOAEL or the LOAEL, the USEPA has developed Reference Doses (RfDs) for chronic exposures to constituents with potential noncarcinogenic effects (USEPA, 2008b).

The uncertainty factors account for uncertainties associated with the dose-response value, such as the effect of using an animal study to derive a human dose-response value, extrapolating from a LOAEL to NOAEL, and evaluating sensitive subpopulations. For constituents that are assumed to cause potential noncarcinogenic effects, the RfD provides reasonable certainty that if the estimated potential exposure dose is below the RfD, then no potential noncarcinogenic health effects are expected to occur even if daily exposure were to occur for a lifetime. RfDs are expressed in terms of milligrams of constituent per kilogram of body weight per day (mg/kg-day).

Oral, dermal, and inhalation routes of exposure were evaluated in this risk assessment. Because dermal toxicity values are not generally available, oral dose-response information is used to estimate the potential risk associated with both potential oral and dermal exposures.

4.1.3 Carcinogenic Dose-Response

The underlying assumption used by USEPA for regulatory risk assessment for constituents with known or assumed potential carcinogenic effects is that no threshold dose exists. In other words, USEPA conservatively assumes that a finite level of potential risk is associated with any dose above zero however infinitesimal. To assess potentially carcinogenic health effects, cancer slope factors (CSFs) were used to assess oral, dermal, and inhalation exposures. CSFs are upper-bound estimates of the carcinogenic potency of chemicals that are used to estimate the incremental risk of developing cancer, corresponding to a lifetime of exposure at the levels estimated in the exposure assessment. In standard risk assessment procedures, estimates of

carcinogenic potency reflect the conservative assumption that no threshold exists for carcinogenic effects, i.e., that any exposure to a carcinogenic chemical will contribute an incremental amount to an individual's overall risk of developing cancer. The CSF values recommended by the U.S. EPA are conservative upper-bound estimates of potential risk. As a result, the "true" cancer risk is unlikely to exceed the estimated risk calculated using the CSF, and may be as low as zero (USEPA, 1986).

Carcinogen toxicity values that are used in the risk assessment likely vary in the type of data used to calculate the CSFs, and the strength of the evidence supporting the values. Chemicals for which adequate human data are available are categorized as "known human carcinogens", while other values with varying levels of supporting data may be classified as "likely human carcinogens," "suggestive of human carcinogenicity," "not likely to be carcinogenic," or, perhaps data may be inadequate to make a determination of carcinogenicity. The USEPA has developed computerized models that extrapolate observed responses at high doses used in animal studies to predicted responses in humans at the low doses encountered in environmental situations. The models developed by the USEPA assume no threshold and usually use animal, and sometimes human, data to develop an estimate of the carcinogenic potency of a constituent. This numerical estimate is referred to by the USEPA as the CSF. The computerized models used by USEPA assume that carcinogenic dose-response is linear at low doses. CSFs are expressed in terms of $(mg/kg\text{-}day)^{-1}$.

4.2 Toxicity Values for the Probabilistic Risk Assessment

The MEE analysis is used to refine potential excess lifetime cancer risks for four COPCs (arsenic, BaP-TE, pentachlorophenol and TCDD-TEQ). The CSFs used in the MEE analysis to estimate potential risks associated with arsenic, BaP-TE and pentachlorophenol are the same as those used in the deterministic risk assessment and are presented in Table 8C. The MEE analysis uses a distribution of CSFs to estimate the potential excess lifetime cancer risk associated with TCDD-TEQ because an overwhelming amount of new scientific data are available not reflected in the point estimate TCDD CSF. The derivation and scientific basis of the TCDD-TEQ CSF distribution is described briefly below and is discussed in detail in Appendix D. The CSF distribution was treated as a variability parameter in the variability loop of the MEE model. Because the distribution is based on data from one study and one type of model, the range arises because of potential variability in response among the different animals. Had we included a range of CSFs arising from a series of studies, or using a range of dose response models, that would be uncertainty.

CSFs for TCDD available from regulatory agencies and the published literature were reviewed for inclusion in the risk assessment. USEPA's published CSF of 150,000 $(mg/kg\text{-}day)^{-1}$ available from HEAST (1997) was not used because it is based upon an outdated assessment (USEPA, 1984), and as such the data, methods, and policies used in the assessment are now obsolete. This CSF has never been verified for inclusion in USEPA's Integrated Risk Information System (IRIS). Specific limitations of the HEAST CSF for TCDD include: (1) the CSF relied upon conclusions originally reported in Kociba et al. (1978), which have since been updated to reflect more recent pathology guidelines (PWG, 1990); (2) the CSF does not reflect more recent cancer bioassays conducted for

TCDD; (3) the CSF relies upon dose-response data that were assessed in terms of administered dose, which is not considered to be a suitable dose measure for persistent chemicals such as TCDD; (4) the CSF relies upon an allometric scaling factor of 2/3 to scale doses from rats to humans, rather than a scaling factor of 3/4 as is current agency policy (USEPA, 1992); and (5) the CSF relies upon a low-dose extrapolation method (linearized multistage model) that is not consistent with current agency guidelines for carcinogen risk assessment (USEPA, 2005).

In 2003, a draft USEPA reassessment of the CSF for TCDD was released for review by the National Academy of Sciences (NAS). NAS was tasked to assess whether USEPA's risk estimates for dioxin-like chemicals were scientifically robust and whether there is a clear delineation of all substantial uncertainties and variability. NAS released its critical review of USEPA's draft reassessment in 2006. USEPA's draft CSF value of 1,000,000 $(mg/kg\text{-}day)^{-1}$ was not used based upon the critical review it received from the NAS. Key criticisms and recommendations from NAS for USEPA's assessment include: (1) the linear extrapolation to low doses reflects agency policy, and does not reflect the state of the science for TCDD; (2) USEPA should use a variety of different dose-response models rather than just the multistage model with linear extrapolation (3) USEPA should use probabilistic methods to address uncertainty in the cancer potency; (4) USEPA should use the most current data in its risk estimates, in particular, the NTP (2006) cancer bioassay; and (5) the assessment should consider multiple dose measures, and CSFs based upon body burden should address species differences in body fat composition. In response to these comments, a revised reassessment is being prepared by USEPA, and it is estimated to become available for pubic review and comment in 2012.

A CSF estimate was recently published by Maruyama and Aoki (2006). This assessment relied upon the dose-response data for liver tumors in female rats from the recent NTP bioassay (2006). Dose was assessed in terms of tissue burden using physiologically based pharmacokinetic (PBPK) models in rats (Andersen et al., 1993) and humans (Maruyama et al., 2002, 2003). The data set, treatment of dose, and use of several dose response models in this assessment make it consistent with the NAS recommendations listed above. In deriving the CSF, several dose-response models were fit by the authors to the dose-response data set, with the Weibull model providing the best overall fit ($p=0.999$). The Weibull model was used to estimate the dose corresponding to a 1% increase in extra risk (ED01) and its 95% lower confidence limit (LED01), which were then used to derive linear estimates of cancer potency with a most likely estimate for the CSF of 1,600 $(mg/kg\text{-}day)^{-1}$ and an upper bound estimate of 3,000 $(mg/kg\text{-}day)^{-1}$. Until USEPA's revised assessment becomes available (2012), the assessment of Maruyama and Aoki (2006) was used in this risk assessment as an interim CSF that is reflective of the best available science. Although the upper bound CSF value of Maruyama and Aoki is lower than the HEAST value of 150,000 $(mg/kg\text{-}day)^{-1}$, it is likely to overestimate the potential risks to human health for the following reasons: (1) an inherent assumption of the assessment is that the rat liver tumor response when assessed on a tissue burden basis is predictive of response in a human tissue; (2) the CSFs listed above reflect the more conservative of two estimates of rat liver dose considered by the authors; and (3) the CSF does not take into consideration

the mode of action and NAS recommendation that supports consideration of a nonlinear dose-response relationship.

Based on the NTP bioassay data and Maruyama and Aoki (2006), a pert distribution[2] using the 5th percentile value of 200 (assuming symmetry about the MLE fit of the Weibull model), the median value of 1600 (based upon the MLE fit of the Weibull model) and the 95th percentile value of 3000 (based upon the 95% lower confidence limit for the Weibull model) was generated for the oral cancer slope factor (CSF) for TCDD. By expressing the CSF for TCDD as a distribution, this risk assessment is consistent with USEPA's *Guidelines for Carcinogen Risk Assessment (USEPA, 2005)*, which states that "…*assessments should provide central estimates of potential risk in conjunction with lower and upper bounds...*" The oral CSF distribution was also used to assess potential dermal and inhalation exposures. The same distribution was used for all workers.

[2] The pert distribution is an alternative to a triangular distribution. It uses a smoother curve shape that places less emphasis on the upper extremes. This particular application replaces the min and max values typically used for the triangular distributions with the 5th and 95th percentiles.

5.0 RISK CHARACTERIZATION

Risk Characterization combines the results of the Exposure Assessment and the Toxicity Assessment to provide a quantitative estimate of the potential for carcinogenic and non-carcinogenic human health effects due to chronic and/or subchronic exposure. A deterministic risk assessment was used to develop initial conservative estimates of potential cancer and non-cancer risks for all potential receptors exposed to all COPCs in all on-Site exposure areas. The initial conservative estimates of potential risk were then compared to allowable risk limits to determine whether potential risks associated with any receptors, COPCs and exposure areas exceeded those limits and needed to be refined using the MEE analysis. Based upon that comparison, the MEE analysis was used to refine potential excess lifetime cancer risks (PELCRs) associated with potential exposure of KI workers to arsenic, BaP-TE, pentachlorophenol and TCDD-TEQ in surface soils in all on-Site exposure areas.

5.1 Deterministic Risk Assessment

This section presents the results of the deterministic risk assessment. Potential non-cancer risks are presented first, including potential risks associated with lead, followed by potential excess lifetime cancer risks.

5.1.1 Potential Risks from Lead

As discussed in Section 4.1.1, potential lead exposures to all on-Site receptors were evaluated using USEPA's Adult Lead Model. A maternal/fetal blood lead level of 10 µg/dL in greater than 5 percent of a hypothetically exposed population represents the threshold for an unacceptable level of potential adverse neurological effects (USEPA, 1999). If the predicted blood lead concentration from potential exposure to on-Site soil, or potential exposure to on-Site sediment, is less than 10 µg/dL in at least 95 percent of the potentially exposed population, then potential exposure to lead in on-Site soils are assumed to result in no risk of harm. Using the highest EPC estimated from all on-Site exposure areas (equal to 144 mg/kg estimated for the BA), predicted 95th percentile blood lead levels in on-Site KI workers, teenage trespassers, utility workers, and construction workers are less than the threshold of 10 µg/dL (Table 9A). Because the lead EPC for surface soil is less than 144 mg/kg in each of the other on-Site exposure areas, blood lead levels would be predicted to be less than the threshold of 10 µg/dL in all other exposure areas as well. Similarly, potential exposure to lead in on-Site sediments results in predicted 95th percentile blood lead levels in KI workers that are less than the threshold of 10 µg/dL (Table 9B). Combined, these results indicate that potential exposure of on-Site receptors to lead in on-Site soils and sediments does not pose an unacceptable risk.

5.1.2 Potential Non-Cancer Risks

Potential non-cancer health risks associated with potential exposure to a COPC are estimated by calculating the Hazard Quotient (HQ), which is the ratio between the Average Daily Dose of a COPC estimated in the exposure assessment and that COPC's

reference dose identified in the toxicity assessment. The HQ is estimated using the equation shown below.

$$HQ = \frac{ADD}{RfD}$$

where:

HQ = Hazard quotient (unitless);
ADD = Average daily dose (mg/kg-day), this can be either for a chronic or subchronic exposure duration; and,
RfD = Reference dose (mg/kg-day).

If the HQ for a given constituent and pathway does not exceed one, then the RfD has not been exceeded, and no adverse non-cancer health effects are expected to occur as a result of exposure to that constituent via that pathway. The HQs for each constituent are summed to yield the Hazard Index (HI) for that pathway. A total HI for each receptor is then calculated by summing the pathway-specific HIs. If the total HI does not exceed one, then no adverse non-cancer health effects are expected to occur as a result of that receptor's potential exposure to those constituents in the exposure media evaluated. If the total HI exceeds 1.0, then endpoint specific HIs can be estimated for that receptor. If all endpoint specific HIs are less than 1.0, then no adverse non-cancer health effects are expected to occur as a result of that receptor's potential exposure to those constituents in the exposure media evaluated.

Total HIs for all receptors and all on-Site exposure areas are summarized in Table 10. Tables 11A through 11I provide a more detailed presentation of HQs and HIs. Tables 11A through 11G provide a summary of HQs (for each COPC and exposure pathway combination) and HIs (for each COPC and each exposure pathway, as well as all pathways combined) for KI workers and trespassers for each on-Site soil exposure area. Table 11H provides a similar summary for DD sediments. Table 11I summarizes HQs and HIs for the utility and construction workers. Appendix H presents the potential risk calculations for the deterministic assessment. All receptors in every on-Site exposure area have a total HI of less than 1. Accordingly, based upon the conservative assumptions used in the deterministic risk assessment presented herein, potential non-cancer health effects are not expected to occur as a result of potential exposure to COPCs in on-Site soils and on-Site sediments. Given that the conservative deterministic risk assessment predicts an absence of potential non-cancer risks, a more refined evaluation of potential non-cancer risks using the MEE model is not necessary and was not conducted.

5.1.3 Potential Excess Lifetime Cancer Risks

Potential excess lifetime cancer risks (PELCRs) associated with potential exposure to COPCs in on-Site soils and sediments were estimated by combining a COPC's Lifetime Average Daily Dose estimated in the exposure assessment and the cancer slope factor

identified in the toxicity assessment. The PELCR is estimated using the equations shown below.

$$PELCR = 1 - e^{-CSF \times LADD}$$

where:

PELCR	=	Potential Excess Lifetime Cancer Risk (unitless);
LADD	=	Lifetime Average Daily Dose (mg/kg-day); and,
CSF	=	Cancer Slope Factor ((mg/kg-day)$^{-1}$).

This is the general form of the equation, and may be used in all cases to estimate potential risk, regardless of the magnitude of the potential estimated risk. In particular, this equation should be used when the product of the dose and potency slope is greater than 0.01. This practice prevents calculation of potential risks that are greater than one.

The exponential equation can be simplified to a linear equation, which closely approximates the results of the exponential equation when the product of the dose and potency slope is less than 0.01. The simplified linear form of the equation is expressed as:

$$PELCR = LADD \times CSF$$

where:

PELCR	=	Potential Excess Lifetime Cancer Risk (unitless);
LADD	=	Lifetime Average Daily Dose (mg/kg-day); and,
CSF	=	Cancer Slope Factor ((mg/kg-day)$^{-1}$).

PELCRs were estimated for each pathway for each COPC assumed to be associated with potentially carcinogenic effects. The PELCRs for each COPC were summed to yield a pathway-specific PELCR, and then a total PELCR for each receptor was estimated by summing the pathway-specific PELCRs. The estimated PELCRs associated with COPCs are an indication of the potential cancer risk a receptor may experience *over and above* their background cancer risk from all sources over the duration of a lifetime. The background cancer incidence in the US is approximately 3.5 in 10 (based on cancer prevalence data from the National Cancer Institute [NCI, 2007] and population statistics from the United States Census Bureau [Census Bureau, 2007]). Given this background incidence of cancer in the US, the increase in overall cancer risk associated with a PELCR of 1 X 10^{-6} corresponds to an individual having an increase from 0.350000 to 0.350001 in their chance of getting cancer over a lifetime. Similarly, the increase in overall cancer risk associated with a PELCR of 1 X 10^{-4} corresponds to an individual having an increase from 0.3500 to 0.3501 in their chance of getting cancer over a lifetime. Both of these potential increases are so small as to be immeasurable and are one reason why USEPA considers increases this small to be acceptable. Note

as well, that because of the numerous conservative exposure and toxicity assumptions used in the deterministic risk assessment, estimated PELCRs are substantially overestimated and any actual cancer risks, if present at all, are substantially lower.

At virtually all CERCLA sites, if the PELCR for a particular receptor falls within or is below USEPA's allowable risk range of 1×10^{-6} to 1×10^{-4} (one in one million to one in ten thousand), then potential risks associated with potential exposures to COPCs at a site are assumed to be acceptable. However, even though the Gainesville Site is being evaluated under the oversight of USEPA, FDEP evaluates acceptability of estimated potential excess lifetime cancer risks by comparison to an allowable risk limit of 1×10^{-6} (one in one million) Thus, it is possible that the risk assessment may develop estimated PELCRs for one or more receptors and areas of the Site that fall within USEPA's allowable risk range (i.e., between 1×10^{-6} and 1×10^{-4}) but exceed FDEP's allowable risk limit. In such an instance, the potential exposures would be judged to meet USEPA's benchmark but may be judged to exceed FDEP's benchmark. Given the presence of dual risk management benchmarks at the Gainesville Site, acceptability of potential excess lifetime cancer risks are discussed in relation to both USEPA's allowable risk range and FDEP's allowable risk limit.

Total PELCRs for all receptors and all on-Site exposure areas estimated by the deterministic risk assessment are summarized in Table 10. Tables 11A through 11I provide a more detailed presentation of PELCRs estimated by the deterministic risk assessment. Tables 11A through 11G provide a summary of PELCRs (for each COPC and exposure pathway combination, for each COPC, for each exposure pathway, as well as all pathways and COPCs combined) for KI workers and trespassers for each on-Site soil exposure area. Table 11H provides a similar summary for DD sediments. Table 11I summarizes PELCRs for the utility and construction workers. Appendix H presents the potential risk calculations for the deterministic assessment.

Potential excess lifetime cancer risks estimated by the deterministic risk assessment are presented below for each receptor and exposure area to which a receptor may be exposed. For all receptors, potential exposures associated with incidental ingestion of soil containing COPCs pose the greatest potential risk followed by potential dermal exposure to COPCs in soil. Potential inhalation exposures pose the lowest potential risks.

5.1.3.1 On-Site KI Worker Deterministic Estimates

- Process Area. Using the deterministic calculations, the total PELCR for the on-Site KI worker in the PA is estimated to be 5×10^{-4} (Tables 10 and 11A) and exceeds both the USEPA allowable risk range and FDEP's risk limit. PELCRs associated with all COPCs exceed FDEP's risk benchmark but only the PELCR associated with TCDD-TEQ exceeds USEPA's risk range.

- Southwest Wooded Area. Using the deterministic calculations, the total PELCR for the on-Site KI worker in the SWWA is estimated to be 7 x 10^{-6} (Tables 10 and 11B). This total PELCR falls within USEPA's allowable risk range but is above FDEP's risk limit. PELCRs associated with arsenic and TCDD-TEQ exceed FDEP's risk limit of 1x10^{-6}. PELCRs associated with BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within USEPA's risk range and the TCDD-TEQ EPC (Table 6) is below the lower end of USEPA's range of TCDD-TEQ clean up levels for commercial/industrial sites (i.e., 5-20 µg/kg).

- Western Active Area. Using the deterministic calculations, the total PELCR for the on-Site KI worker in the WAA is estimated to be 1 x 10^{-4} (Tables 10 and 11C). This total PELCR falls within USEPA's allowable risk range but is above FDEP's risk limit. PELCRs associated with arsenic, BaP-TE, and TCDD-TEQ exceed FDEP's risk limit of 1x10^{-6}. The PELCR associated with pentachlorophenol is below FDEP's risk limit. PELCRs associated with all COPCs fall within USEPA's risk range and the TCDD-TEQ EPC (Table 6) is below the lower end of USEPA's range of TCDD-TEQ clean up levels for commercial/industrial sites (i.e., 5-20 µg/kg).

- Northwest Grassed Area: Using the deterministic calculations, the total PELCR for the on-Site KI worker in the NWGA is estimated to be 4 x 10^{-6} (Tables 10 and 11D). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ exceeds FDEP's risk limit of 1x10^{-6}. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within USEPA's risk range. Further, the TCDD-TEQ EPC (Table 6) is below the lower end of USEPA's range of TCDD-TEQ clean up levels for commercial/industrial sites (i.e., 5-20 µg/kg).

- Boiler Area: Using the deterministic calculations, the total PELCR for the on-Site KI worker in the BA is estimated to be 1 x 10^{-3} (Tables 10 and 11E) exceeding both USEPA's risk range and FDEP's risk limit. PELCRs associated with all COPCs exceed FDEP's risk limit of 1x10^{-6}. The PELCRs associated with BaP-TE and TCDD-TEQ also exceed USEPA's risk range.

- Eastern Active Area: Using the deterministic calculations, the total PELCR for the on-Site KI worker in the EAA is estimated to be 2 x 10^{-4} (Tables 10 and 11F) exceeding both USEPA's risk range and FDEP's risk limit. PELCRs associated with arsenic, BaP-TE, and TCDD-TEQ exceed FDEP's risk limit of 1x10^{-6}. The PELCR associated with pentachlorophenol is below FDEP's risk limit. PELCRs associated with all COPCs fall within or below USEPA's allowable risk range. Further, the TCDD-TEQ EPC (Table 6) is below the lower end of USEPA's range of TCDD-TEQ clean up levels for commercial/industrial sites (i.e., 5-20 µg/kg).

- Northeast Grassed Area. Using the deterministic calculations, the total PELCR for the on-Site KI worker in the NEGA is estimated to be 4 x 10^{-5} (Tables 10 and

11G). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit. The PELCRs associated with arsenic and TCDD-TEQ exceed FDEP's risk limit of $1x10^{-6}$. PELCRs associated with BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within USEPA's allowable risk range.

- Drainage Ditch Sediments. Using the deterministic calculations, the total PELCR for the on-Site KI worker potentially exposed to COPCs in DD sediments is estimated to be 3×10^{-7} (Tables 10 and 11H), which is below USEPA's risk range and FDEP's risk limit indicating COPCs in on-Site sediments do not pose an unacceptable risk to KI workers.

5.1.3.2 Trespasser Deterministic Estimates

- Process Area. Using the deterministic calculations, the total PELCR for the trespasser in the PA is estimated to be 4×10^{-6} (Tables 10 and 11A). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ slightly exceeds FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within or below USEPA's allowable risk range.

- Southwest Wooded Area. Using the deterministic calculations, the total PELCR for the trespasser in the SWWA is estimated to be 1×10^{-6} (Tables 10 and 11B), which is below USEPA's allowable risk range and FDEP's risk limit indicating COPCs in surface soils in the SWWA do no pose an unacceptable risk to trespassers.

- Western Active Area. Using the deterministic calculations, the total PELCR for the trespasser in the WAA is estimated to be 2×10^{-6} (Tables 10 and 11C). This total PELCR falls within the lower end of USEPA's allowable risk range, but is just above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ slightly exceeds FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall at the lower end of, or below, USEPA's allowable risk range.

- Northwest Grassed Area: Using the deterministic calculations, the total PELCR for the trespasser in the NWGA is estimated to be 6×10^{-7} (Tables 10 and 11D), which is below USEPA's allowable risk range and FDEP's risk limit indicating COPCs in surface soils in the NWGA do not pose an unacceptable risk to trespassers.

- Boiler Area: Using the deterministic calculations, the total PELCR for the trespasser in the BA is estimated to be 2×10^{-5} (Tables 10 and 11E). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit.

PELCRs associated with BaP-TE and TCDD-TEQ exceed FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within or below USEPA's allowable risk range.

- Eastern Active Area: Using the deterministic calculations, the total PELCR for the trespasser in the EAA is estimated to be 2×10^{-6} (Tables 10 and 11F). This total PELCR falls within the lower end of USEPA's allowable risk range, but is just above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ slightly exceeds FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall at the lower end of, or below, USEPA's allowable risk range.

- Northeast Grassed Area. Using the deterministic calculations, the total PELCR for the trespasser in the NEGA is estimated to be 5×10^{-6} (Tables 10 and 11G). This total PELCR falls within the lower end of USEPA's allowable risk range, but is above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ exceeds FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall at the lower end of, or below, USEPA's allowable risk range.

- Drainage Ditch Sediments. Using the deterministic calculations, the total PELCR for the trespasser potentially exposed to COPCs in DD sediments is estimated to be 1×10^{-6} (Tables 10 and 11H), which is below USEPA's allowable risk range and FDEP's risk limit indicating COPCs in on-Site sediments do not pose an unacceptable risk to trespassers.

5.1.3.3 Construction Worker Deterministic Estimates

- Using the deterministic calculations, the total PELCR for the construction worker potentially exposed to COPCs in subsurface soils is estimated to be 1×10^{-5} (Tables 10 and 11I). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit. Only the PELCR associated with TCDD-TEQ exceeds FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic, BaP-TE and pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within, or below, USEPA's allowable risk range.

5.1.3.4 Utility Worker Deterministic Estimates

- Using the deterministic calculations, the total PELCR for the utility worker potentially exposed to COPCs in subsurface soils is estimated to be 3×10^{-5} (Tables 10 and 11I). This total PELCR falls within USEPA's allowable risk range, but is above FDEP's risk limit. The PELCRs associated with BaP-TE and TCDD-TEQ exceed FDEP's risk limit of $1x10^{-6}$. PELCRs associated with arsenic and

pentachlorophenol are below FDEP's risk limit. PELCRs associated with all COPCs fall within, or below, USEPA's allowable risk range.

5.1.3.5 Summary of Deterministic Estimates

In summary, the deterministic risk assessment estimated that on-Site KI workers potentially exposed to COPCs in surface soils in the SWWA, WAA, NWGA and NEGA and sediments in the DD have potential excess lifetime cancer risks within or below USEPA's allowable risk range. Only workers in the PA, the BA and the EAA had estimated potential excess lifetime cancer risks above USEPA's risk range. Potential excess lifetime cancer risks for trespassers, construction workers and utility workers in all exposure areas were within or below USEPA's allowable risk range. These results suggest that under USEPA's risk management benchmarks, only COPCs in the PA, BA and EAA pose a potentially unacceptable risk. Two of these three exposure areas (PA and BA) have TCDD-TEQ EPCs that exceed the lower end of USEPA's range of TCDD-TEQ cleanup levels for commercial/industrial sites. Thus, the conservative deterministic risk assessment results and USEPA's range of TCDD-TEQ cleanup levels reach consistent conclusions about the acceptability of potential risk for the various on-Site exposure areas.

Potential cancer risks estimated for KI workers by the conservative deterministic risk assessment exceed the FDEP cancer risk limit for COPCs in surface soils in all exposure areas. Potential excess lifetime cancer risks estimated for trespassers in the SWWA and NWGA meet FDEP's risk limit; potential trespasser risks in the PA, WAA, BA, EAA and NEGA exceed the FDEP's risk limit (in contrast to trespasser potential risk falling within or below USEPA's allowable risk range in all exposure areas). The potential excess lifetime cancer risks estimated for construction and utility workers by the conservative deterministic risk assessment also exceed FDEP's risk limit but, as noted above, meet USEPA's allowable risk benchmarks. Potential excess lifetime risks associated with potential trespasser and KI worker exposure to COPCs in DD sediments meet FDEP's risk limit.

5.2 Refined Risk Estimates Using Probabilistic Assessment

Based upon the results of the conservative deterministic risk assessment, the on-Site KI Worker was identified as the most highly exposed receptor, and, therefore, the MEE analysis was run for the hypothetical KI worker potentially exposed to the four potentially carcinogenic COPCs (i.e., arsenic, BaP-TE, pentachlorophenol, and TCDD-TEQ) in all on-Site surface soil exposure areas. Potential risks to hypothetical KI worker were refined because these potential risks are greater than potential risks for the other receptors and exceeded FDEP's risk limit. Although, in four of the seven surface soil exposure areas potential risks are within or less than USEPA's risk range the MEE analysis conservatively evaluates potential risks in all surface soil exposure areas.

Potential excess lifetime risks associated with potential exposure to COPCs in DD

sediments were not refined using the MEE analysis because conservative potential excess lifetime cancer risks for all receptors estimated using the deterministic risk assessment fell below USEPA's allowable risk range and FDEP's risk limit.

The hypothetical KI worker was selected as the receptor to evaluate in the MEE analysis because, the KI worker had the greatest potential excess lifetime cancer risk, as estimated using the conservative deterministic risk assessment. If the refined and more realistic potential risks for the KI worker (developed by the MEE analysis) are predicted to fall within acceptable levels, either as a baseline condition or as a consequence of some future remedial action, then more realistic potential risks for the other receptors with lower potential exposures will also fall within or below risk limits. A concomitant reduction in potential risks will occur for other receptors because the use of distributions instead of point estimates (e.g., the COPC concentration would be a distribution, not a single upper bound concentration; a distribution would be used for exposure frequency so a trespasser would be assumed to be on the site from 1-12 days a year instead of 12, etc.) will also result in more realistic and lower estimates of potential exposure and risk than estimated by the conservative deterministic risk assessment.

A detailed description of the MEE model, including an example calculation, was provided to USEPA previously (AMEC, 2008a). That description is reproduced in Appendix E of this risk assessment and, thus, a detailed description of the MEE model is not repeated in the main body of this document. However, an overview of the MEE model and description of the different general kinds of estimates of potential risk developed by the MEE analysis is presented below to enable readers to better understand and appreciate the results of the MEE analysis.

The MEE model consists of a series of three nested loops that are iterated numerous times to predict the day-to-day potential estimated risk of many receptors and to then estimate how much of the variation in potential risk be can be ascribed to variability between receptors versus uncertainty about exposure and toxicity factors that determine potential risk. The three nested loops are the uncertainty loop, the variability loop and the day loop. The user defines the number of uncertainty loops and variability loops in a model run. For the MEE analysis presented in this risk assessment, 200 uncertainty loops and 1000 variability loops were run. In other words, for each on-Site exposure area potential risks for 1000 hypothetical on-Site KI workers were estimated 200 times (the equivalent of estimating the potential risk for 200,000 hypothetical on-Site workers for each exposure area). The number of day loops is equal to the number of days a receptor is potentially exposed to soils in an exposure area. The number of days varies from one receptor to the next and is set by the MEE model when it selects an exposure duration (ED) and exposure frequency (EF) for a receptor.

Once the uncertainty parameters (i.e., the relative absorption factors and the dermal adherence factors) and the variability parameters (exposure duration, exposure frequency, body weight, skin surface area and cancer slope factor) are set for a single receptor (i.e., a hypothetical KI worker), the MEE model estimates the total potential excess lifetime cancer risk for that single receptor. Total potential lifetime cancer risk is estimated by summing the daily potential risk for every day that the receptor is assumed

to be exposed (i.e., by summing the results of all of the day loop iterations). The number of day loop iterations can vary greatly between hypothetical workers. The potential risk for a hypothetical worker may consist of the summation of as few as 50 day loop iterations (for a hypothetical worker with an exposure duration of 1 year and an exposure frequency of 50 days per year) to more than 6,250 (for a hypothetical worker with an exposure duration of 25 years and an exposure frequency of more than 250 days per year). Regardless the number of day loops required to estimate the total potential excess lifetime risk for a hypothetical worker, a single estimate of potential excess lifetime cancer risk is output by the MEE model for each hypothetical worker. This single estimate of potential risk could be shown as a single point on the figures summarizing the results of the MEE models runs (Table 12A summarizes the MEE model results across all exposure areas and Tables 12A-12E and Figures 6A- 6G display the results for each of the seven on-Site exposure areas). However, because the MEE analysis in the risk assessment estimates the potential excess lifetime cancer risk for 1000 hypothetical KI workers for each iteration of the uncertainly loop, 1000 points would need be shown on the figures for each single iteration of an uncertainly loop. These 1000 results are instead shown as a single line on the figures. The 1000 results are plotted (by percentile) from lowest to highest estimated total potential excess lifetime risk.

If the results from all 200 uncertainly loop iterations were shown on each figure, then each figure would have 200 lines (with each line representing the distribution of the potential lifetime risk of the 1000 hypothetical KI workers included in one iteration of the uncertainty loop). Because presenting 200 lines on a single figure would result in a figure that is not readable, each figure in this risk assessment presents three lines. The middle line (shown in red on all of the figures) corresponds to the 50th percentile (median) line of the uncertainty iterations. The bottom dashed line (shown in blue) corresponds to the 5th percentile of the uncertainty iterations. The top dashed line (shown in green) corresponds to the 95th percentile of the uncertainty iterations.

The figures also present the potential excess lifetime cancer risk estimated by the conservative deterministic risk assessment. This point estimate of potential risk is plotted at the 100th percentile (on the right-hand y-axis) for convenience. The deterministic potential risks are not estimated as a percentile of a distribution of potential risk, rather they are point estimates. Finally, the MEE model results are summarized for each exposure area in Figure 7, including median PELCR for each exposure area, the 5th and 95th percentiles of the uncertainty surrounding the median estimate, and the 5th and 95th percentiles of the variability distribution for each exposure area.

5.2.1 Median MEE Cancer Risks

MEE analysis results for a typical hypothetical KI worker (e.g. the potential excess lifetime cancer risk for the 50th percentile (median) of the variability distribution at the 50th percentile uncertainty distribution) are summarized in Tables 12A-12E. The tables also present the 5th and 95th percentiles of the variability distribution as well as the deterministic PELCRs for each on-Site exposure area. The PELCRs are reported to two significant digits to better demonstrate trends in the results. As described above, the middle (red) lines on Figures 6A-6G also show these results.

All COPCs Combined

The median PELCRs in all exposure areas are within or below USEPA's allowable risk range and are also below FDEP's risk limit except in the BA (Table 12A, Figures 6A-6G, Figure 7). No lower bound (5th percentile) PELCRs exceed or approach either USEPA's allowable risk range or FDEP's risk limit (Table 12A, Figures 6A-6G, Figure 7). All upper bound (95th percentile of variability) PELCRs are also within or below USEPA' allowable risk range; however, upper bound PELCRs in four exposure areas (PA, BA, WAA, and EAA) exceed FDEP's risk limit (Table 12A, Figures 6A-6G, Figure 7). Review of Table 12A shows that the total PELCRs are driven by the incidental soil ingestion pathway, though potential inhalation of dust also makes an important contribution to total potential risk. Potential risks associated with dermal contact are about 10-fold lower than potential risks associated with either of the other two exposure pathways.

TCDD-TEQ

The median PELCRs associated with potential exposure to TCDD-TEQ in all exposure areas, as well as the lower and upper bound PELCRs, are below USEPA's allowable risk range and are also below FDEP's risk limit (Table 12B).

BaP-TE

The median PELCRs associated with potential exposure to BaP-TE in all exposure areas are within or below USEPA's allowable risk range and are also below FDEP's risk limit except in the BA (Table 12C). All lower bound (5th percentile) PELCRs are far below both USEPA's allowable risk range and FDEP's risk limit (Table 12C). All upper bound (95th percentile of variability) PELCRs are also within or below USEPA's allowable risk range; however, upper bound PELCRs in three exposure areas (PA, BA and EAA) exceed FDEP's risk limit (Table 12C). Review of Table 12C shows that the BaP-TE PELCRs are driven by the incidental soil ingestion pathway, followed by potential dermal contact with soil or inhalation of dust. Depending upon exposure area, either potential dermal or inhalation exposure can be the second most important pathway, but in all cases, PELCRs associated with potential exposure via inhalation or dermal contact are more than 10-fold lower than PELCRs associated with incidental ingestion.

Arsenic

The median PELCRs associated with potential exposure to arsenic in all exposure areas are below USEPA's allowable risk range and are also below FDEP's risk limit (Table 12D). All lower bound (5th percentile) PELCRs are far below both USEPA's allowable risk range and FDEP's risk limit (Table 12D). All upper bound (95th percentile of variability) PELCRs are also within or below USEPA's allowable risk range; however, upper bound PELCRs in three exposure areas (PA, WAA and EAA) slightly exceed FDEP's risk limit (Table 12D). Review of Table 12D shows that the arsenic PELCRs are driven about equally by the incidental soil ingestion and inhalation of dust pathways,

followed by the potential dermal contact pathway for which potential risks are at least 10-fold lower.

Pentachlorophenol

The median variability PELCRs associated with potential exposure to pentachlorophenol in all exposure areas, as well as the lower and upper bound PELCRs, are below USEPA's allowable risk range and are also below FDEP's risk limit (Table 12E).

5.2.2 Lower and Upper Uncertainty Bounds for PELCRs Developed by the MEE Analysis

The MEE model also estimates lower (5th percentile) and upper (95th) percentile bound PELCRs to provide an estimate of the uncertainty associated with the median (50th percentile) MEE results. The 5th percentile and 95th percentile uncertainty bounds are shown on Figures 6A-6G for each exposure area. With the exception of the BA, the lower and upper bound PELCRs at a given percentile of the distribution are generally within a factor of 2 to 4 of each other suggesting that the uncertainty associated with a PELCR at a particular percentile is small. PELCRs for the BA have greater uncertainty, approaching 10-fold for most percentiles. The greater uncertainty surrounding BA PELCRs is likely associated with potential risks in the BA being driven by potential exposure to BaP-TE, rather than arsenic as is the case in most of the other exposure areas, coupled with a larger range of input values in one of the uncertainty parameters (e.g., RAFs) for BaP-TE than arsenic. Given that the range in uncertainty about the 50th percentile PELCRs is relatively small for most exposure areas, presentation and discussion of the MEE analysis results focuses on the 50th percentile (median) of the uncertainty iterations.

5.2.3 Summary of PELCRs Estimated by the MEE Analysis

All MEE risks, even the upper uncertainty bounds of the upper percentile variability risks, are substantially lower than the deterministic risks for every exposure area substantiating the highly conservative nature of the deterministic point estimate PELCRs (Figures 6A-6G, Table 12A). This finding is expected. When multiple independent conservative exposure and toxicity assumptions are combined, the estimated potential risk is more conservative than any one of the individual assumptions. The largest differences between the PELCRs estimated by the MEE analysis and the deterministic risk assessment arise for TCDD-TEQ and are driven by differences in assumed cancer potency, though the differences for the other COPCs are substantial as well.

For the typical hypothetical KI worker, PELCRs developed by the MEE analysis are within or below USEPA's allowable risk range and, with the exception of the BA, are also below FDEP's risk limit (Table 12A, Figures 6A-6G, Figure 7) and, thus, do not represent an unacceptable cancer risk. In the BA, the median hypothetical worker PELCR is slightly above the FDEP risk limit (Table 12 A, Figure 7). Given that potential risks estimated by the MEE are over- rather than underestimates (see discussion in the

following paragraph), it is likely that the typical hypothetical worker in the BA has a potential risk below FDEP's risk limit.

PELCRs in the upper percentiles of the distribution in six out of the seven on-Site exposure areas (PA, EAA, NEGA, NWGA, SWWA and WAA) are within or below USEPA's allowable risk range. In the BA, the 95th percentile PELCR is also within USEPA's allowable risk range. Only the very extreme end of the PELCR distribution slightly exceeds USEPA's allowable risk range. However, note that the MEE analysis used conservative point estimate assumptions (not distributions) for some parameters that determine potential risk (e.g., for workers in an exposure area with active wood treating, all of his or her daily exposure to soil was assumed to come from the Site; the upper 95th percentile of the distribution of possible CSFs for arsenic, BaP-TE and pentachlorophenol was used). As a result, the upper percentiles of potential risk are far more likely to represent over- rather than underestimates of potential risk. In such instances, USEPA (2001a) recommends that the lower end of the RME percentile range (i.e., below the 95th percentile rather than above the 95th percentile) be used. Within the BA, the lower end of the RME percentiles fall within USEPA's risk range and, thus, even the extreme upper percentiles of the PELCR distribution in the BA do not represent a potentially unacceptable cancer risk under USEPA's risk management policy. Upper percentiles of the PELCR distribution in three exposure areas (NEGA, NWGA and SWWA) are below FDEP's risk limit and are greater than FDEP's limit in four exposure areas (PA, BA, WAA, and EAA, Table 12A, Figure 7).

Potential incidental soil ingestion exposures are associated with the largest potential excess lifetime risks, followed by potential inhalation exposures and then potential dermal exposures. The largest PELCRs were associated with potential exposures to BaP-TE, followed by potential exposure to arsenic, TCDD-TEQ and pentachlorophenol (Tables 12B-12 E).

As described above, PELCRs developed by the MEE analysis are expected to be lower than those estimated using the conservative deterministic point estimate approach for any receptor included in the MEE analysis, not just hypothetical KI workers included in the MEE analysis. Median MEE PELCRS for hypothetical KI workers are 500 to more than 4,000 times lower, than the conservative deterministic point estimate PELCRs (Table 12A). Upper bound MEE PELCRs are 10 to nearly 90 times lower than the conservative deterministic point estimate PELCRs (Table 12A). The MEE analysis only included quantitative PELCRs for hypothetical KI workers because they were the most exposed receptor. If potential risks to a hypothetical KI worker are either allowable under baseline conditions, or reduced to an allowable level following implementation of a remedy, similar reductions in potential excess lifetime cancer risks would be expected for the other receptors included in the conservative point estimate risk assessment but not included in the MEE analysis (e.g., trespassers, construction workers and utility workers). Such reductions are expected to decrease the potential risks for these receptors to allowable levels (Table 10).

6.0 UNCERTAINTY ASSESSMENT

In each of the four steps of the HHRA process, assumptions were made due to a lack of absolute scientific knowledge. Some of the assumptions are supported by considerable scientific evidence, while others have less support. Every assumption introduces some degree of uncertainty into the risk assessment process, but the assumptions that are made are conservative in order to ensure that health risks are not underestimated. In fact, the use of such conservative assumptions at every stage of the risk assessment process almost certainly has the effect of overestimating health risks to the human population.

The assumptions that introduce the greatest amount of uncertainty in this risk assessment are discussed in this section. For the deterministic HHRA, they are discussed in general terms, because, for most of the assumptions, there is not enough information to assign a numerical value that can be factored into the calculation of risk. In contrast, the MEE risk evaluation captures both the variability in the assumptions, as well as the uncertainty.

6.1 Hazard Identification

Constituents of potential concern (COPCs) at the Site were identified using a conservative screening process resulting in a high degree of confidence that no constituents that may contribute significantly to total potential risks would be eliminated from the risk assessment and to ensure the risk assessment focused on those constituents that could potentially pose a risk. The screening process used conservative (i.e., maximum) concentrations that were compared to screening values that represent conservative overestimates of actual exposures that would likely occur at the Site. In most of the exposure areas evaluated in the risk assessment, potential estimated exposures are likely to be less frequent than assumed in the screening values to which maximum concentrations were compared for the purpose of selecting COPCs in each area. As a result, some COPCs were selected that are highly unlikely to pose an unacceptable risk to potential receptors. Nevertheless, all COPCs identified during this process were quantitatively evaluated in the risk assessment, ensuring that the potential risks are not underestimated.

6.2 Toxicity Assessment

The Toxicity Assessment step of a HHRA always involves uncertainty because the ability of a risk assessor to characterize the dose-response characteristics of a COPC is entirely dependent on that constituent having been previously subjected to rigorous toxicological or epidemiological study by the scientific community. A valid study requires that a suitable number of test organisms were exposed to a constituent, over a suitable range of doses to account for expected exposures in natural settings, and that a suitable number of toxicological end-points were examined in the organisms to ensure that the health effects associated with each dose were well-characterized. Uncertainty arises however, because most laboratory toxicological studies tend to involve the

administration of high doses of a single constituent over a short time frame to a non-human organism, whereas humans in natural settings tend to be exposed to low doses of constituent mixtures over a long time frame. Epidemiological studies require a clear identification and understanding of all potential confounding factors that could lead to erroneous conclusions being drawn about the relationship between a constituent and the effects it elicits in an organism, and often these studies are in occupational settings where the doses are much higher than what would occur in non-occupational settings.

The dose-response characteristics of a constituent are most defensible for use in a risk assessment when sufficient toxicological or epidemiological dose-response information exists for USEPA to derive a RfD or CSF. USEPA derives point-estimate RfDs and CSFs by applying conservative assumptions and uncertainty factors to available toxicological or epidemiological dose-response information, in order to account for the limitations of toxicological research outlined above, namely animal-to-human extrapolation, and high-to-low dose extrapolation. USEPA-derived COPC-specific RfD and/or CSF was used for each of the COPCs in the deterministic risk assessment and for all COPCs, except TCDD, in the MEE analysis. Accordingly, little chance exists that potential risks were underestimated in the risk assessment. It is much more likely that potential risks are overestimated for most COPCs, potentially substantially. Certainly the use of point estimate CSFs (equal to the 95th% upper confidence limits) for arsenic, BaP-TE and pentachlorophenol in the MEE analysis leads to an overestimate of PELCRs by the MEE analysis for these three constituents. The MEE analysis is less likely to have overstated the potential risks associated with TCDD-TEQ because a CSF distribution was used, which was derived from more recent toxicological and pharmacokintetic studies but even those CSFs are more likely than not to overstate potential risks. As stated in Section 4.2, although the upper bound CSF value of Maruyama and Aoki is lower than the HEAST value of 150,000 (mg/kg-day)$^{-1}$, it is likely to overestimate the potential risks to human health for the following reasons: (1) an inherent assumption of the assessment is that the rat liver tumor response when assessed on a tissue burden basis is predictive of response in a human tissue; (2) the CSFs listed above reflect the more conservative of two estimates of rat liver dose considered by the authors; and (3) the CSF does not take into consideration the mode of action and NAS recommendation that supports consideration of a nonlinear dose-response relationship.
.
Taken together, the multiple layers of conservatism in the Toxicity Assessment provide confidence that the dose-response information used in the risk assessment is much more likely to have overestimated than underestimated potential risks.

6.3 Exposure Assessment

The Exposure Assessment step of a HHRA always involves uncertainty because it requires the risk assessor to make estimations and assumptions relating to the extent of COPCs available for human contact (that is, the exposure point concentrations) and the biological and behavioral characteristics of human receptors. For some of the exposure parameters describing the biological and behavioral characteristics of human receptors, conservative parameter values were selected, generally from information in guidance recommended by USEPA. In other cases (e.g., exposure durations based on job

tenures) site-specific information was used reducing the uncertainty in the use of national data recommended by USEPA for this Site.

EPCs were developed using methodologies carefully selected to be representative of conditions at the Site. For example, spatially-weighted average concentrations were developed for constituents in soil and sediment because this approach provides an unbiased representation of concentrations that could be encountered.

Oral and dermal RAFs appropriate for estimating potential non-cancer risks were derived for many constituents using constituent-specific published absorption information (presented in Appendix C). FDEP applies a default relative bioavailability factor of 1 to all constituents, except arsenic and lead. When estimating potential risk associated with the dermal route of exposure, FDEP applies a gastro-intestinal absorption factor as well as a dermal absorption factor. In order to evaluate the possible uncertainty associated with using FDEP's default absorption factors, potential non-cancer risks were also estimated using these default assumptions. These alternative estimates result in lower potential non-cancer risks for some exposure areas and slightly higher potential non-cancer risks for other exposure areas. None of the alternative risk estimates were more than 25% higher than the potential non-cancer risk estimates based upon AMEC RAFs and presented in this risk assessment. Given that potential non-cancer risk estimates developed in this risk assessment using AMEC RAFs are more than 10 times lower than a Hazard Index of 1.0, a 25% increase will not cause estimated non-cancer risks to increase above a Hazard Index of 1.0. Therefore, the conclusion of this risk assessment, that no unacceptable non-cancer risks are present at the Site, would not change if FDEP absorption values were used.

Altogether, the multiple layers of conservatism in the Exposure Assessment provide confidence that assumptions made in this step of the deterministic risk assessment process very likely resulted in potential risks that were overestimated rather than underestimated. The MEE provides a more realistic estimate of risks, principally because less uncertainty is present in the exposure assumptions, and this uncertainty can be quantified using the two-dimensional model approach (i.e., separating uncertainty from variability).

6.4 Risk Characterization

The risk of adverse human health effects depends on estimated levels of exposure and on dose-response relationships. Once exposure to, and risk from, each of the selected constituents is estimated, the total potential risk posed by potential exposure to COPCs is determined by combining the health risk contributed by each constituent across the different exposure pathways. Where COPCs do not interact, do not affect the same target organ or do not have the same mechanism of action, summing the risks for multiple COPCs results in an overestimate of potential risk posed by the Site. However, in order not to understate potential risk, it was initially assumed that the effects of different constituents may be combined together.

The conservative nature of the risk characterization from the deterministic HHRA is obvious when compared to the MEE risk estimates. For example, Figure 6A shows that the deterministic risks across all COPCs and exposure pathways for the PA was nearly two orders of magnitude greater than the comparable value (95th%) from the MEE analysis. The deterministic risks were also outside of the upper median and 95th% risk bounds calculated using the MEE model, further supporting the conservative nature of the deterministic HHRA.

6.5 MEE Model - Number of Uncertainty Iterations

A total of 200 Uncertainty Loops and 1,000 Variability Loops were used for the MEE analyses performed for the on-Site Workers. The number of Uncertainty Loops was based upon the observed smoothing of the uncertainty bounds across the range of potential total cancer risks across all four evaluated COPCs. The impact of using the alternate numbers of uncertainty iterations (100, 300, 400, 500 and 1,000) on the calculated total cancer risk (across all four COPCs and all exposure pathways)[3] for the Process Area was evaluated as part of this uncertainty assessment. Three cases were evaluated - median, 95th% and average risks – using the alternate number of uncertainty loop iterations. The stability of the calculated risks was calculated two ways:

- As the Relative Standard Deviation (RSD) across all six (200 plus five alternate) loop counts.

- As the percent difference (%D) between the 200 iteration loop risks and the average across all six loop counts.

Both stability metrics are shown on Table 13 with the calculated risks. The latter are reported to two significant digits to display the range of results. Review of this table shows that the RSD values ranged from 0.9 to 4.7%, which are within the 5 to 10% error that is anticipated using probabilistic modeling. The %D values ranged from -7.3 to -2.3%, which are also within the 5 to 10% error that is anticipated using probabilistic modeling. Based on these results, the 200 Uncertainty Loops and 1,000 Variability Loops used for the MEE modeling would adequately represent the potential risks for the hypothetical on-Site Workers.

[3] The CSFs for pentachlorophenol and B(a)P were based on the 3/4-scaling factor; the Dioxin-TEQ CSF was based on Maruyama and Aoki (2006).

7.0 SUMMARY OF POTENTIAL RISKS AND CONCLUSIONS

For non-cancer risk, the deterministic risk assessment found that all receptors in every on-Site exposure area have a total Hazard Index of less than 1. Accordingly, based upon the conservative assumptions used in the deterministic risk assessment, potential non-cancer health effects are not expected to occur as a result of potential exposure to COPCs in on-Site soils and on-Site sediments. Given that the conservative deterministic risk assessment predicts an absence of potential non-cancer risks, a more refined evaluation of potential non-cancer risks using the MEE model was not necessary and was not conducted.

For potential cancer risk, the deterministic risk assessment found that on-Site KI workers potentially exposed to COPCs in surface soils in the SWWA, WAA, NWGA, and NEGA have potential excess lifetime cancer risks within or below USEPA's allowable risk range of $1x10^{-6}$ to $1x10^{-4}$ (one in one million to one in ten thousand) and, thus, do not have an unacceptable potential cancer risk according to USEPA's risk management policy. On-Site KI workers in the PA, BA, and EAA have potential excess lifetime cancer risks above USEPA's allowable risk range. Two of these three exposure areas (PA and BA) are also the exposure areas that have TCDD-TEQ EPCs that exceed the lower end of USEPA's range of TCDD-TEQ cleanup levels of commercial and industrial sites. Thus, in these two exposure areas the conservative deterministic risk assessment results and USEPA's range of TCDD-TEQ cleanup levels reach consistent conclusions about which areas warrant additional evaluation of potential risk among the various on-Site exposure areas. These results suggest that under USEPA's risk management policy, and based upon the results of the conservative deterministic risk assessment, only COPCs in the PA, BA, and EAA pose a potentially unacceptable risk. Potential excess lifetime cancer risks for trespassers, construction workers and utility workers in all exposure areas are also within or below USEPA's allowable risk range.

In contrast, under FDEP's risk management policy (an allowable risk limit of $1x10^{-6}$), KI workers have unacceptable potential cancer risks for COPCs in surface soils in all on-Site exposure areas, as estimated by the conservative deterministic risk assessment. Moreover, trespassers have potentially unacceptable excess lifetime cancer risks, as estimated by the conservative deterministic risk assessment, in the PA, WAA, BA, EAA and NEGA, under FDEP's risk management policy compared to trespasser potential risk falling within or below USEPA's allowable risk range in all exposure areas. Similarly, construction and utility workers also have unacceptable potential risks, as estimated by the conservative deterministic risk assessment, under FDEP's risk management policy, but not under USEPA's risk management policy. Only potential excess lifetime risks associated with potential trespasser and KI worker exposure to COPCs in DD sediments fell below FDEP's risk limit of $1x10^{-6}$.

Based upon the results of the conservative deterministic risk assessment, the MEE analysis was run for hypothetical KI workers potentially exposed to the four potentially carcinogenic COPCs (i.e., arsenic, BaP-TE, pentachlorophenol, and TCDD-TEQ) in surface soils in all on-Site exposure areas.

The more realistic and refined potential cancer risks predicted by the MEE analysis are substantially lower than the conservative deterministic point estimates of potential excess lifetime cancer risk developed by the deterministic risk assessment used in the first phase of risk characterization (Figures 6A-6G). This is consistent with the deterministic assessment's use and combination of multiple conservative assumptions leading to potentially unrealistic estimates of risk.

For the typical median hypothetical KI worker, PELCRs developed by the MEE analysis are within or below USEPA's allowable risk range. PELCRs in the upper percentiles of the distribution in six out of the seven on-Site surface soil exposure areas (PA, EAA, NEGA, NWGA, SWWA and WAA) are also within or below USEPA's allowable risk range. In the BA, the upper percentiles that represent the RME are within USEPA's allowable risk range indicating the upper percentiles of the PELCR distribution in the BA do not represent a potentially unacceptable cancer risk under USEPA's risk management policy. Thus, when potentially unacceptable deterministic point estimate risks in the three of the seven exposure areas (PA, BA, and EAA) under USEPA's risk management policy were refined using the MEE analysis, the more realistic and representative estimates of potential excess lifetime cancer estimated by the MEE analysis, fall within USEPA's allowable risk range and indicate that an unacceptable potential risk to hypothetical KI workers does not exist in any of the exposure areas, under current conditions.

Similarly, the more realistic estimates of potential risk to the typical median hypothetical KI worker estimated by the MEE analysis are below FDEP's risk limit in six of the seven on-Site surface soil exposure areas (PA, EAA, NEGA, NWGA, SWWA and WAA) included in the MEE analysis. In the BA, the MEE analysis predicts that the median hypothetical KI worker's potential risk is slightly greater than the FDEP risk limit; however, had more realistic assumptions been used for one or two other parameters for which such assumptions are available, potential risks for the typical hypothetical worker in the BA would have been below the FDEP risk limit as well. As described above, the upper percentiles of the PELCR distribution predicted by the MEE analysis are substantially lower than point estimates of potential risk predicted by the conservative deterministic risk assessment; however, for four of seven on-Site exposure areas, the 95th percentile of the PELCR distribution exceeds the FDEP risk limit. This does not mean, though, that these estimated potential risks are unacceptable. FDEP's risk management policy does not specify what percentile of the distribution of potential risk must meet FDEP's allowable risk limit of $1x10^{-6}$ (one in one million). Absent information to the contrary, the HHRA assumes that the statutory language refers to the typical, or average, Floridian (as opposed to some statistically defined upper bound Floridian) having an excess lifetime cancer risk equal to or less than the allowable risk limit. As described above, the potential excess lifetime risk for the typical median hypothetical KI worker is below or just about equal to the FDEP risk limit in all on-Site exposure areas under current conditions.

Given that refinement of potential excess lifetime cancer risk using the MEE analysis reduced potential risks for most hypothetical KI workers to allowable levels in most

exposure areas, a similar reduction in potential risk would result for the other receptors not included in the MEE analysis, as described above. Thus, in exposure areas where hypothetical KI workers did not have an unacceptable potential excess lifetime cancer risk, other lesser exposed receptors (i.e, trespassers, construction/utility workers) would also not have an unacceptable potential excess lifetime cancer risk.

In summary, when a conservative deterministic risk assessment methodology is exclusively used to estimate potential risks, potential excess lifetime cancer risks for on-Site KI workers in the WAA, SWWA, NWGA, NEGA and DD, as well as for the trespasser in all on-Site exposure areas and for utility and construction workers, are within or below USEPA's allowable risk range. Potential excess lifetime cancer risks for on-Site KI workers in the PA, BA, and EAA exceed USEPA's allowable risk range. Potential excess lifetime cancer risks are driven by potential exposure to TCDD, BaP-TE and arsenic in soils. Potential exposure to pentachlorophenol makes a small contribution to total potential excess lifetime cancer risk. Potential risks estimated using the conservative deterministic risk assessment methodology exceed FDEP's risk limit for most receptors in most exposure areas, though not in the DD sediments. When estimates of potential risk are refined using the MEE analysis, potential excess lifetime cancer risks for the typical, or median, hypothetical KI worker meet both FDEP and USEPA risk limits indicating an unacceptable potential risk does not exist under current conditions. Given that future use of the Site is expected to remain the same as current use, unacceptable potential risks are not expected to be present in the future either. If the use were to change in the future, or if the conditions at the Site were to change, that could trigger a re-evaluation of potential risks using updated exposure and toxicity assumptions.

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Figures

Figure ES-1
Summary of Deterministic Risk Assessment Results
Potential Excess Lifetime Cancer Risk
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

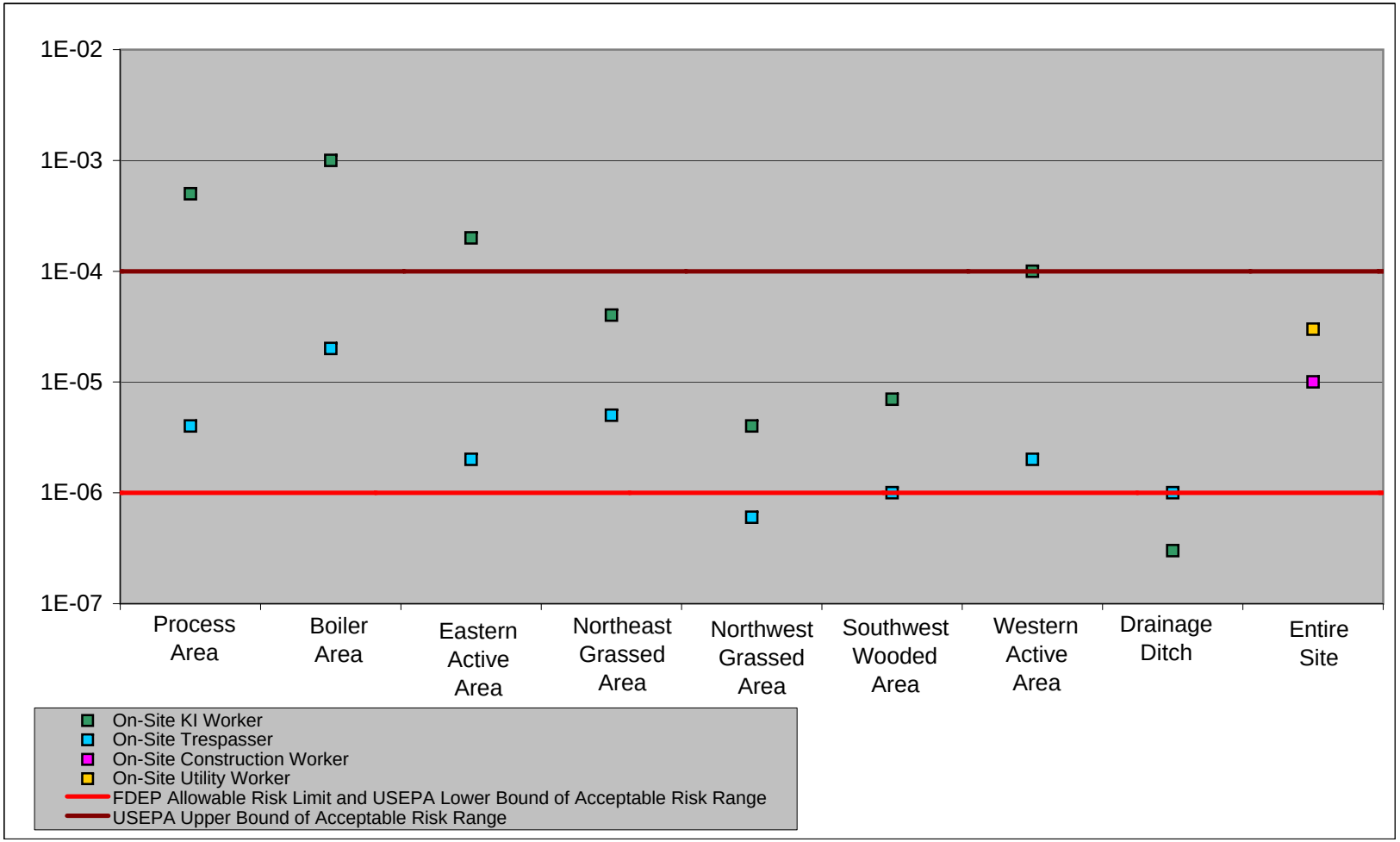
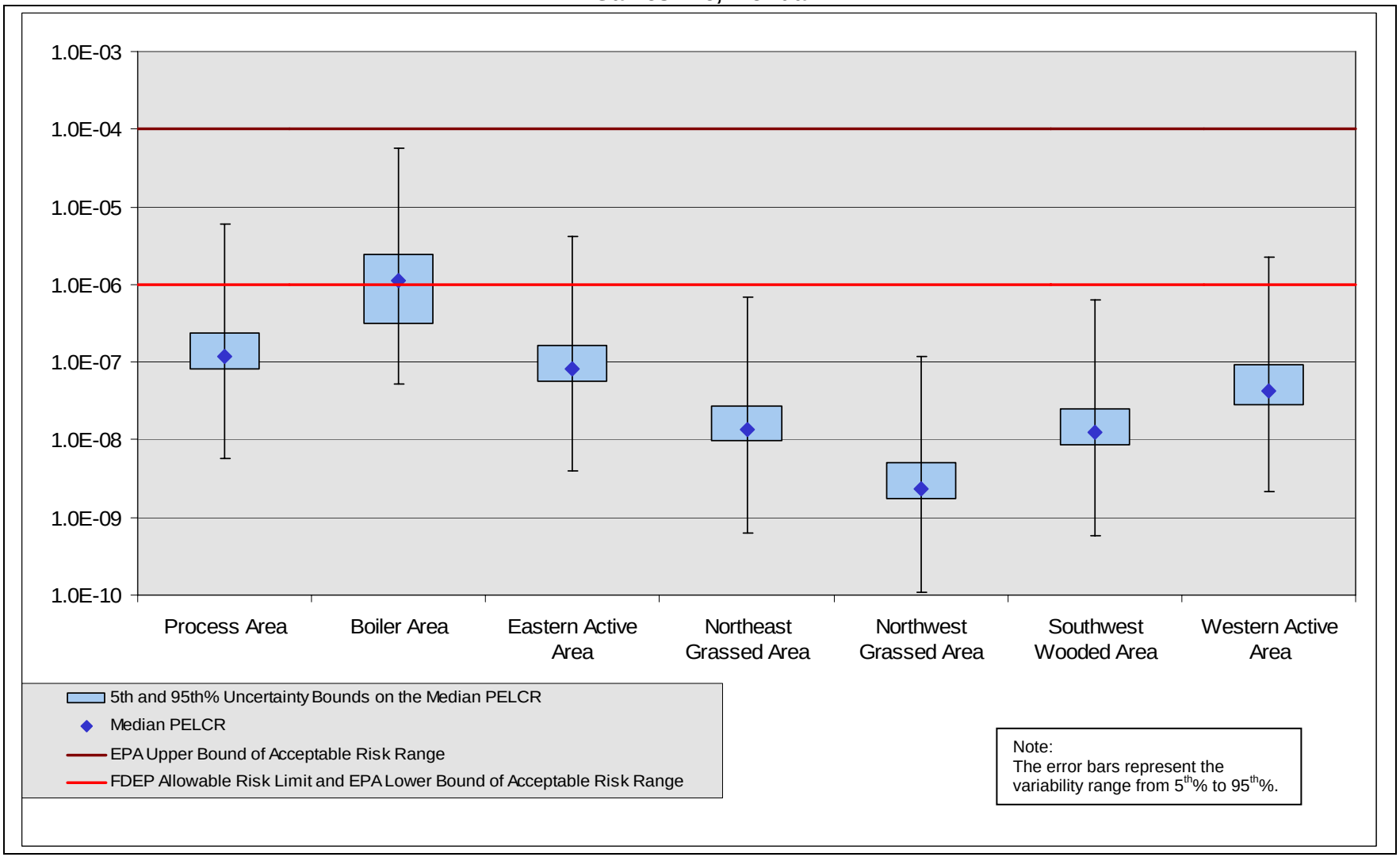
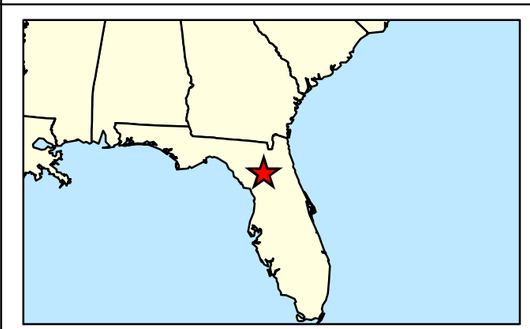
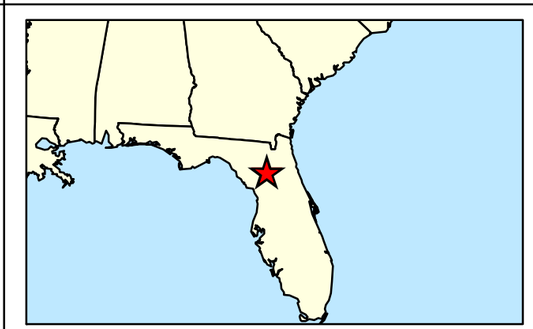
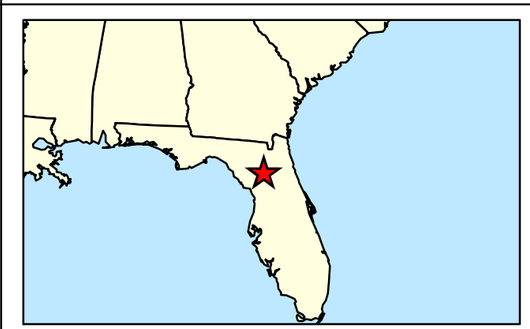


Figure ES-2
Summary of MEE Model Results
Potential Excess Lifetime Cancer Risk for All COPCs, All Exposure Pathways and All Evaluated Locations
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

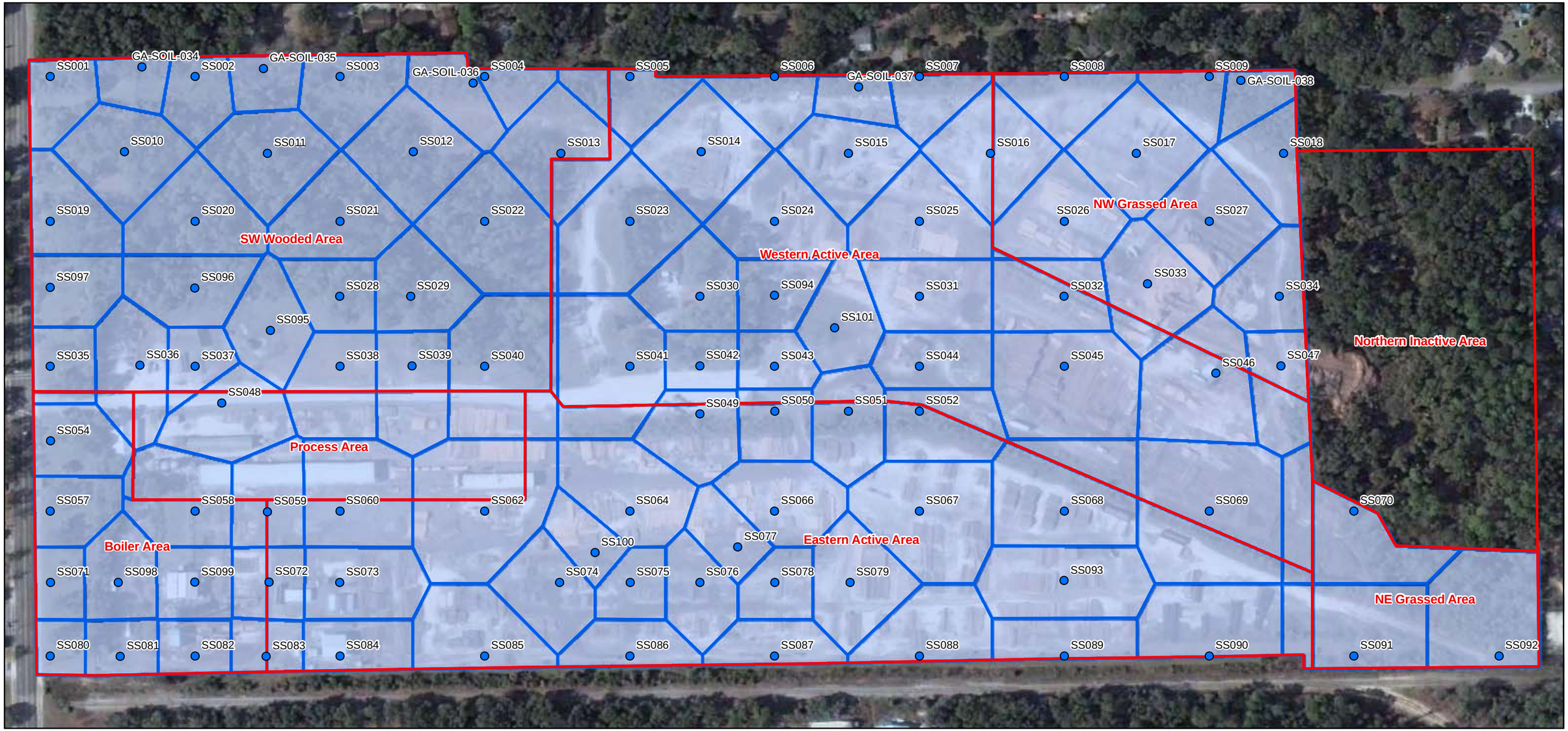


LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Site Boundary	**Figure 1A** **0 to 6 Inch Soil Sample Locations** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure1A.mxd H:\Beazer\Gainsville\Task21\Export\Figure1A.pdf December 22, 2008 DWN: APC CHKD: KMP

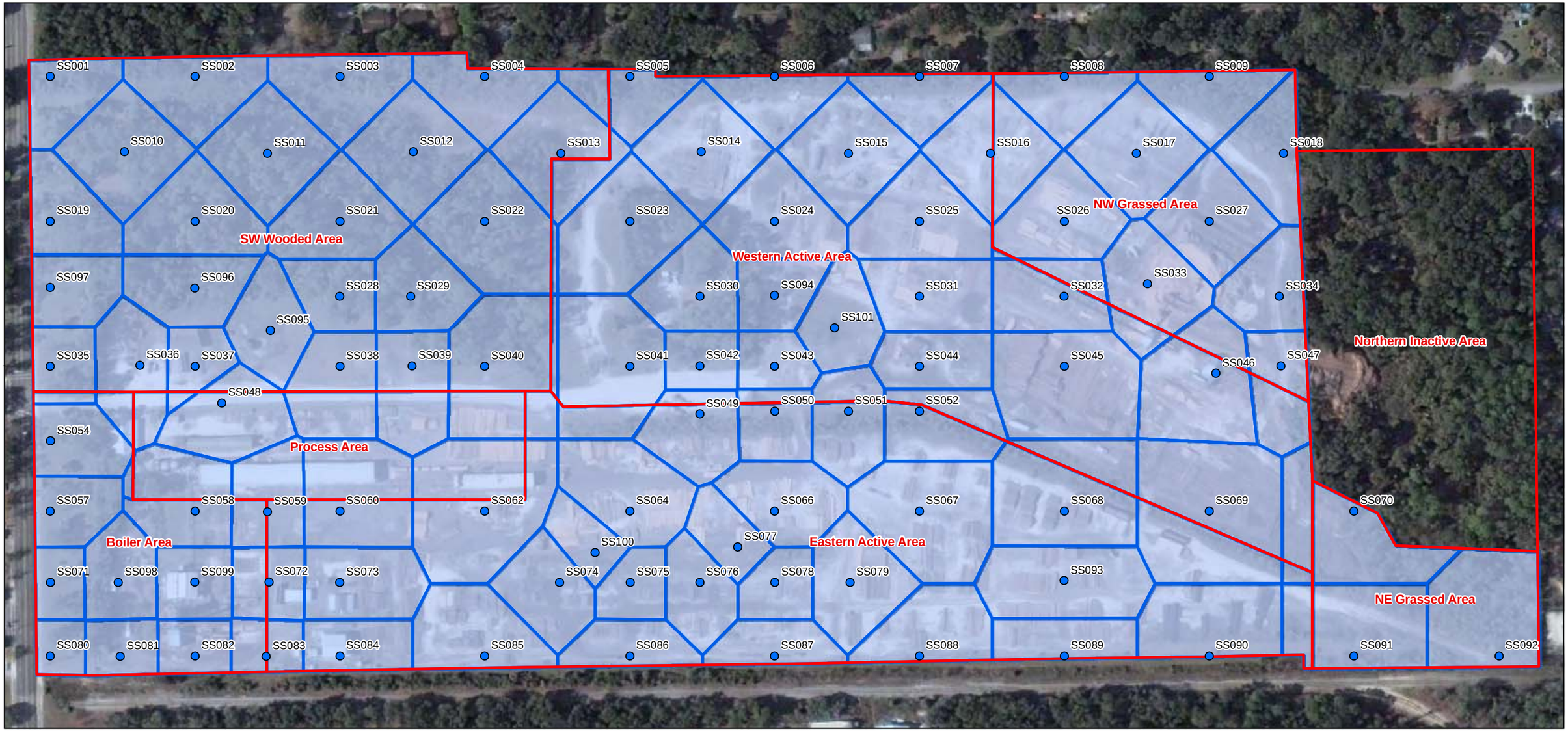
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Site Boundary	**Figure 1B** **0 to 6 Foot Soil Sample Locations** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure1B.mxd H:\Beazer\Gainsville\Task21\Export\Figure1B.pdf December 22, 2008 DWN: APC CHKD: KMP

LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sediment Sampling Locations Site Boundary Drainage Ditch	**Figure 1C** **Drainage Ditch Sample Locations** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure1C.mxd H:\Beazer\Gainsville\Task21\Export\Figure1C.pdf December 22, 2008 DWN: APC CHKD: KMP

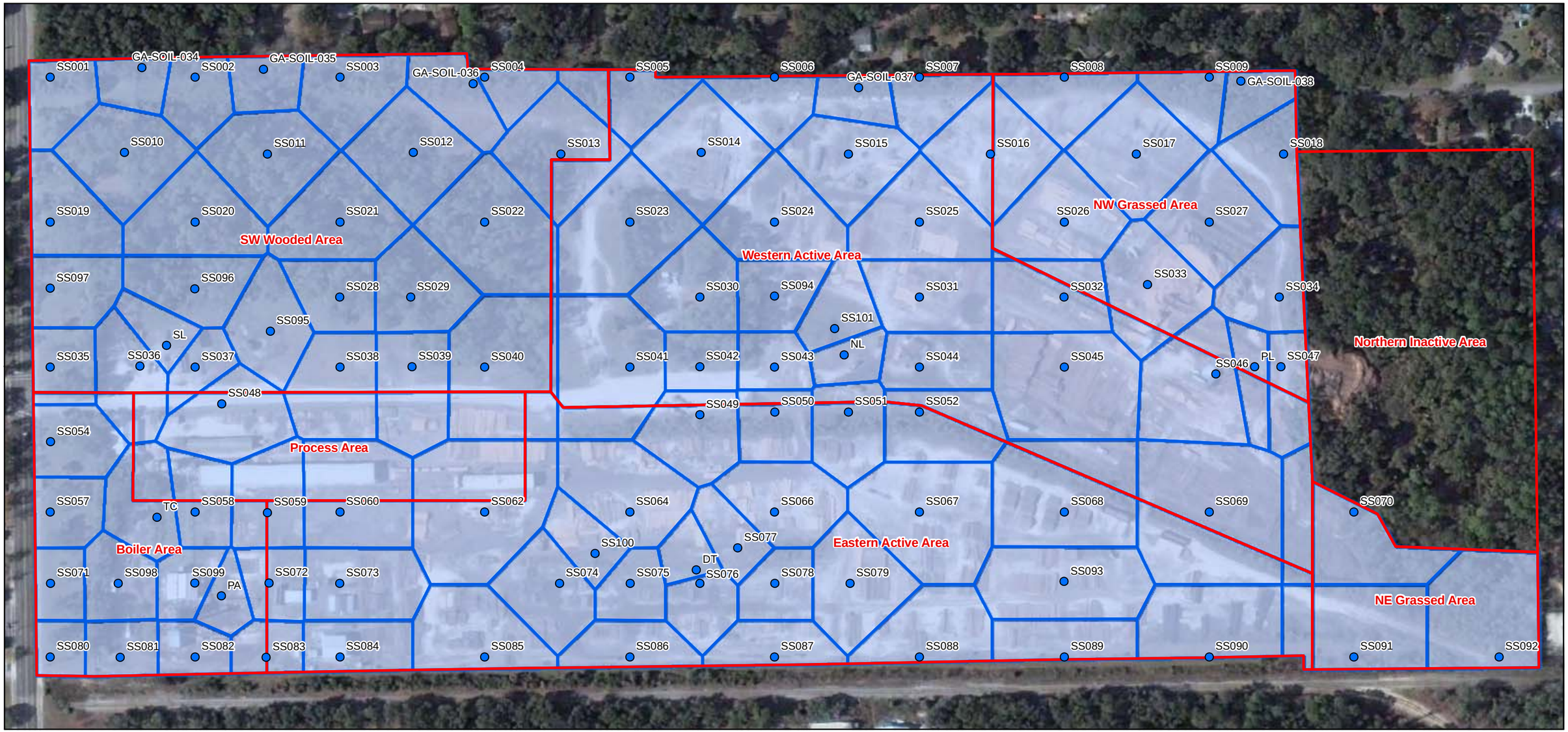
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Exposure Area Drainage Ditch	**Figure 2** **Exposure Areas** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. 0 250 Feet AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainesville\Task21\MXD\Figure2.mxd H:\Beazer\Gainesville\Task21\Export\Figure2.pdf November 22, 2008 DWN: APC CHKD: KMP



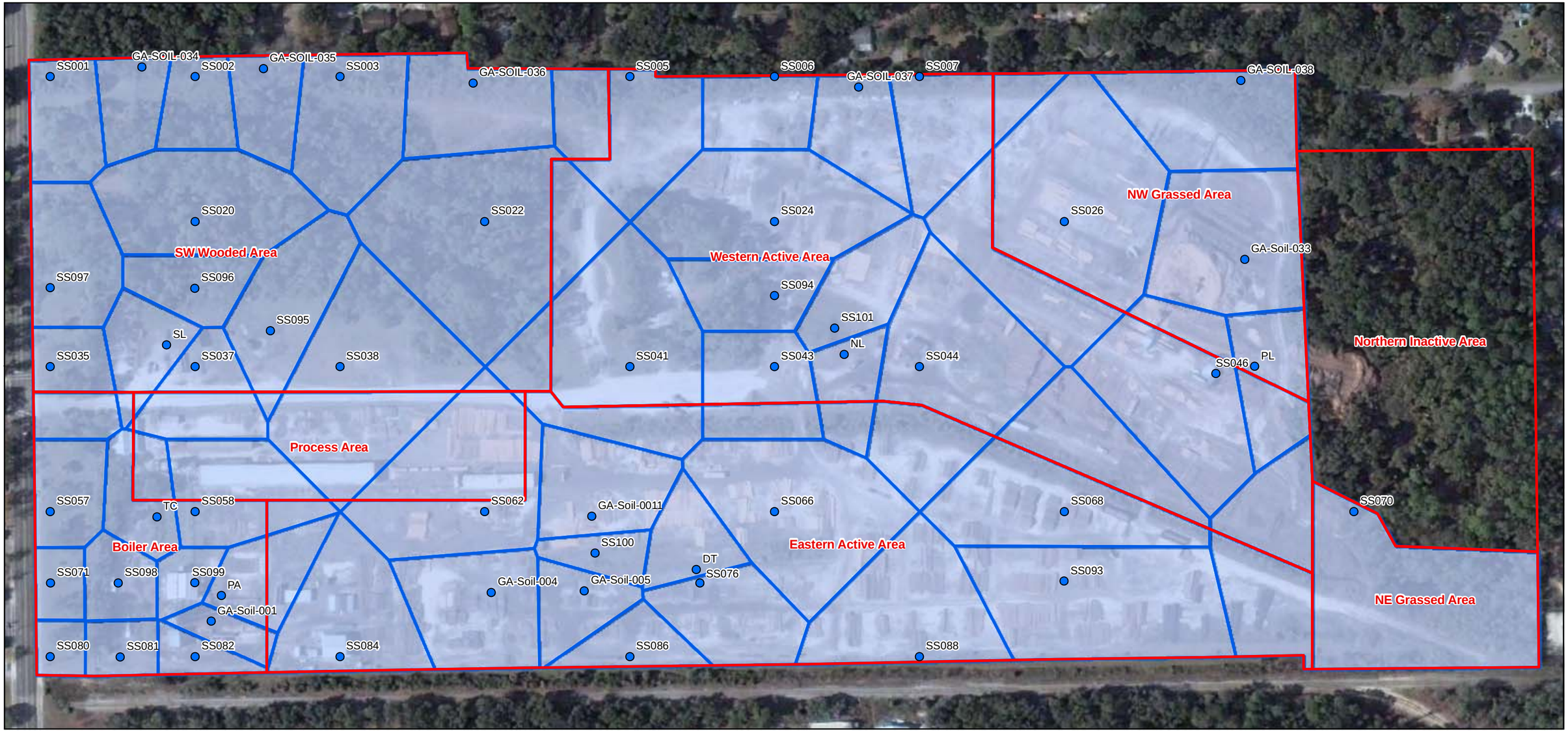
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Exposure Area	**Figure 3A** **Thiessen Polygons for 0 to 6 Inch Soil Samples for Arsenic and Chromium** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure3A.mxd H:\Beazer\Gainsville\Task21\Export\Figure3A.pdf December 22, 2008 DWN: APC CHKD: KMP



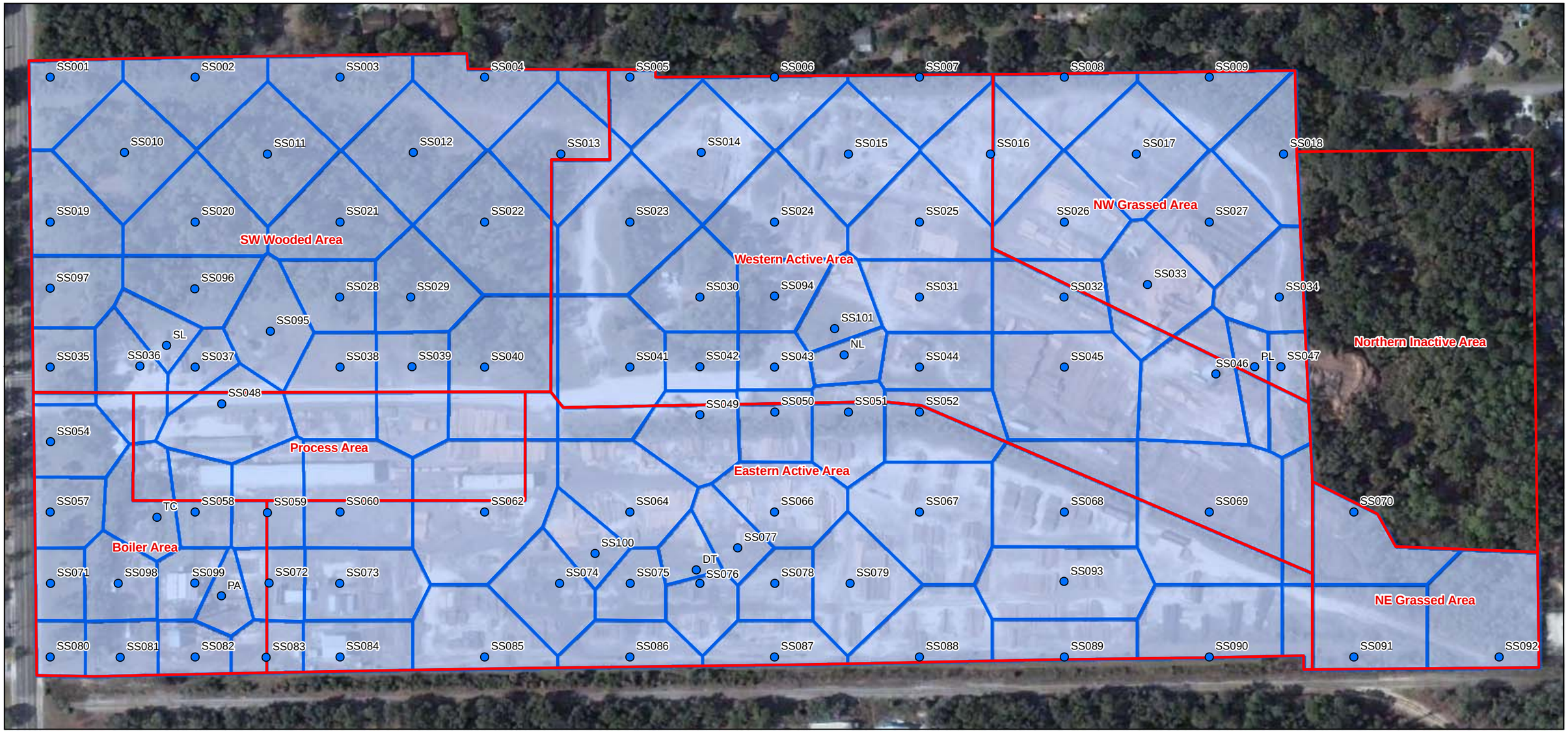
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Exposure Area	**Figure 3B** **Thiessen Polygons for 0 to 6 Inch Soil Samples for Antimony, Carbazole, Copper, Lead, and Mercury** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure3B.mxd H:\Beazer\Gainsville\Task21\Export\Figure3B.pdf December 22, 2008 DWN: APC CHKD: KMP



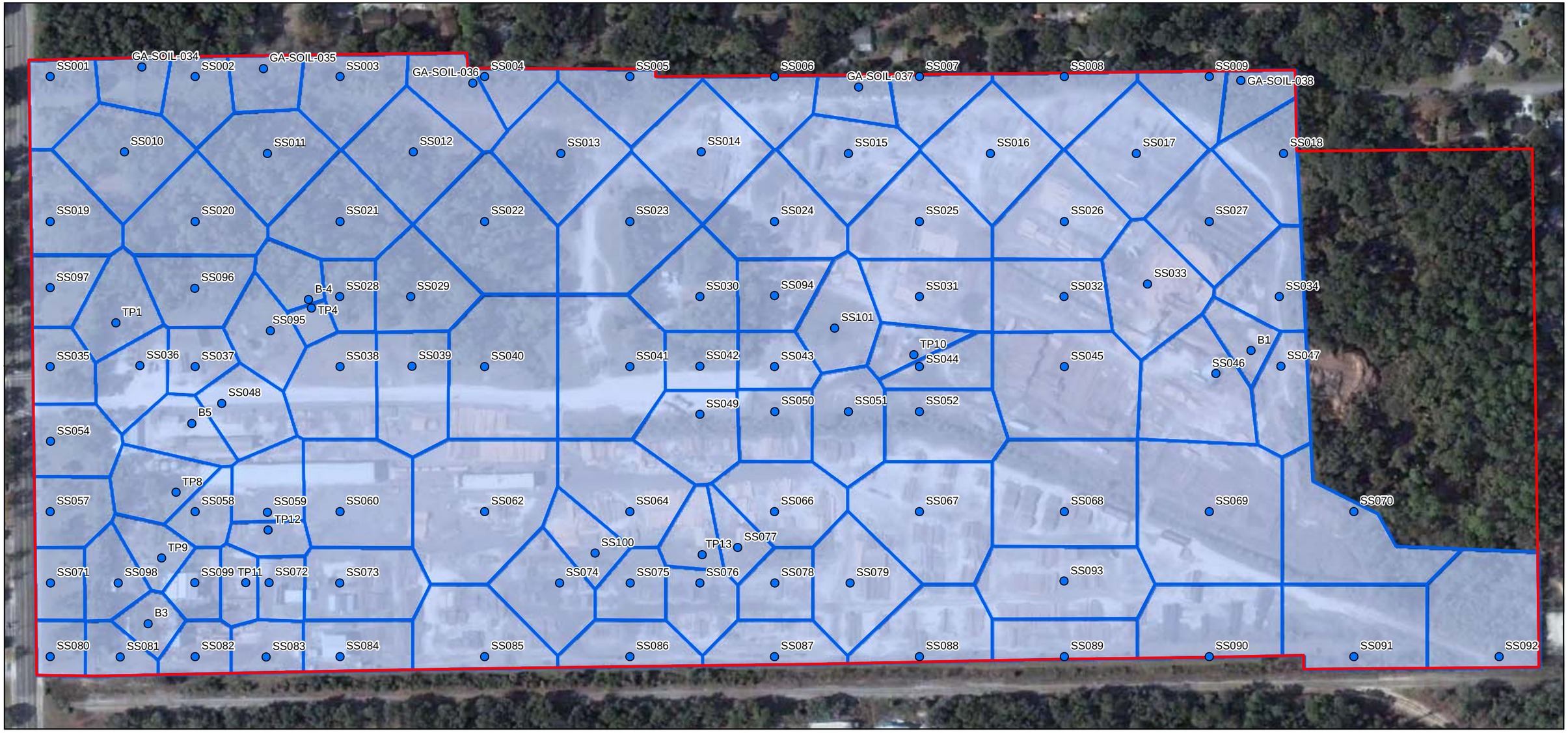
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Exposure Area	**Figure 3C** **Thiessen Polygons for 0 to 6 Inch Soil Samples for BAP-TE and Pentachlorophenol** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure3C.mxd H:\Beazer\Gainsville\Task21\Export\Figure3C.pdf December 22, 2008 DWN: APC CHKD: KMP



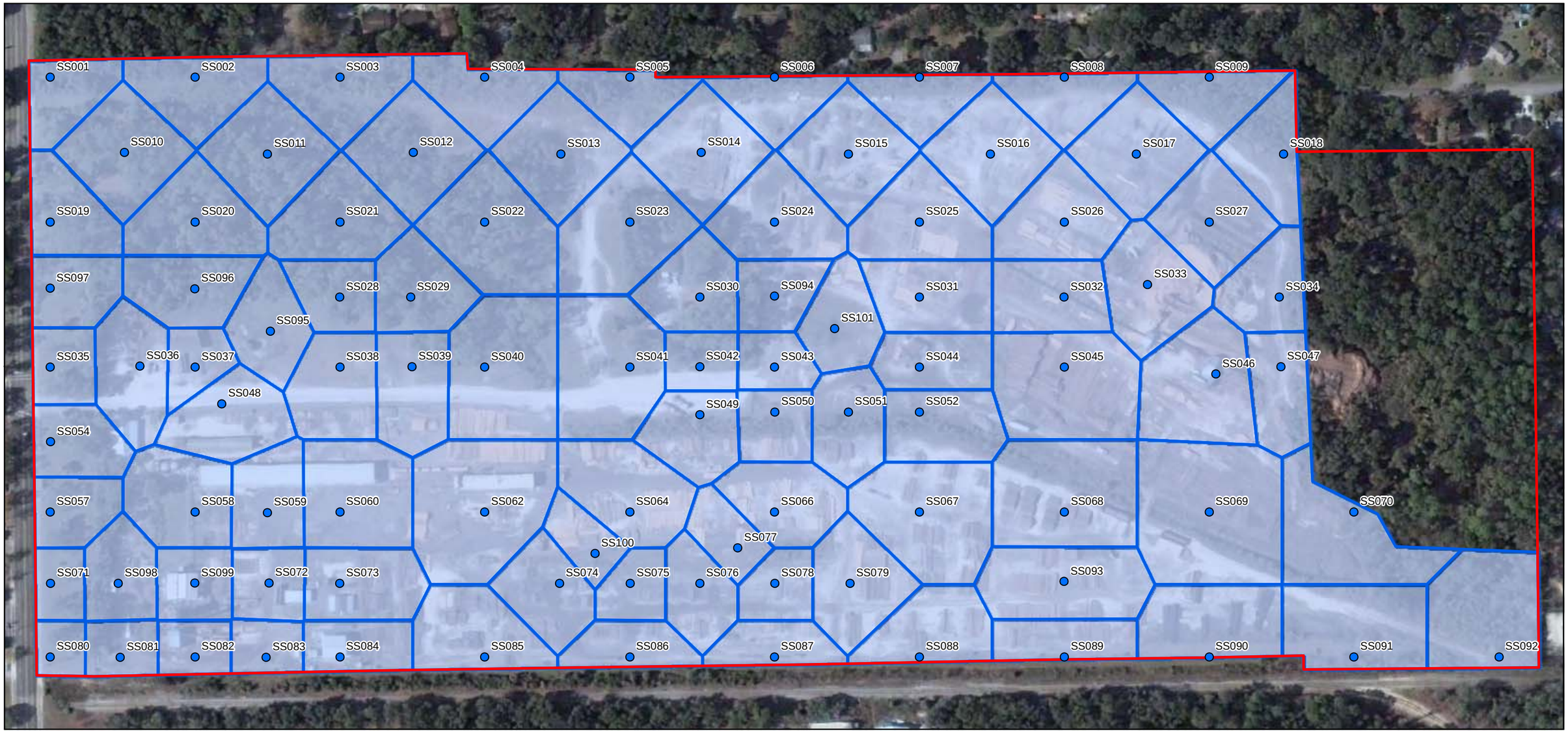
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Exposure Area	**Figure 3D** **Thiessen Polygons for 0 to 6 Inch Soil Samples for TCDD-TEQ** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure3D.mxd H:\Beazer\Gainsville\Task21\Export\Figure3D.pdf December 22, 2008 DWN: APC CHKD: KMP



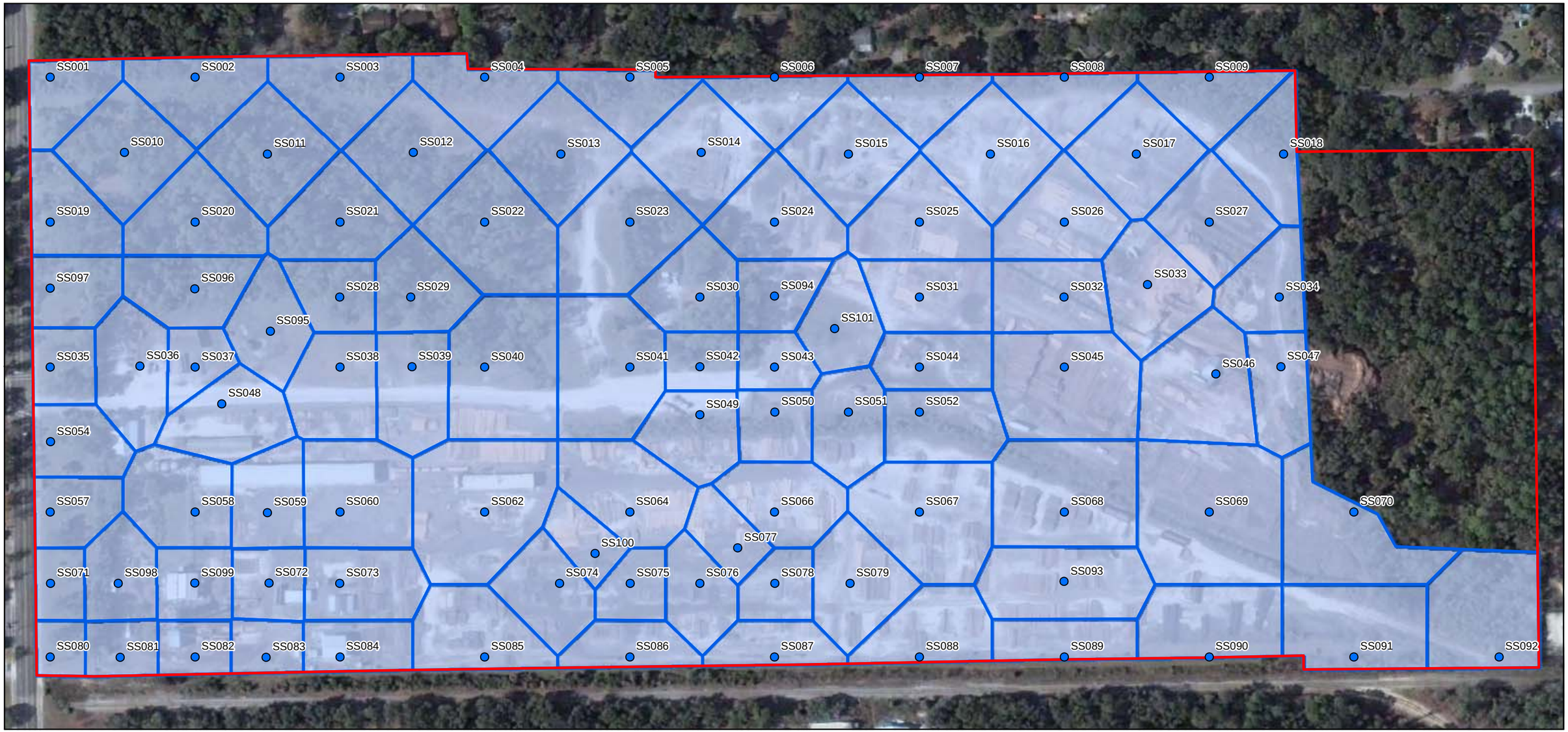
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Exposure Area	**Figure 3E** **Thiessen Polygons for 0 to 6 Inch Soil Samples for 2-Methylnaphthalene and Naphthalene** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure3E.mxd H:\Beazer\Gainsville\Task21\Export\Figure3E.pdf December 22, 2008 DWN: APC CHKD: KMP



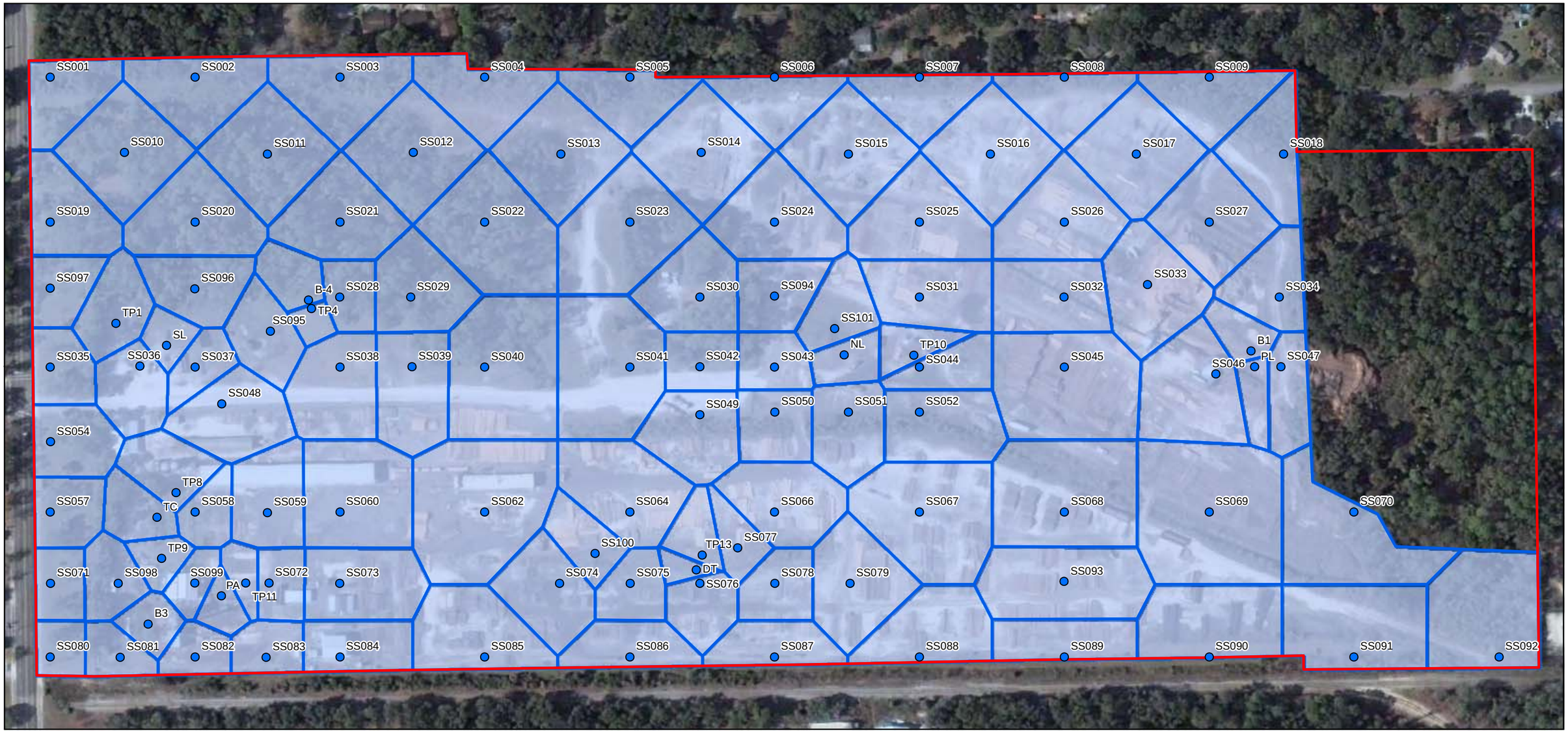
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4A** **Thiessen Polygons for 0 to 6 Foot Soil Samples for Arsenic and Chromium** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4A.mxd H:\Beazer\Gainsville\Task21\Export\Figure4A.pdf December 22, 2008 DWN: APC CHKD: KMP



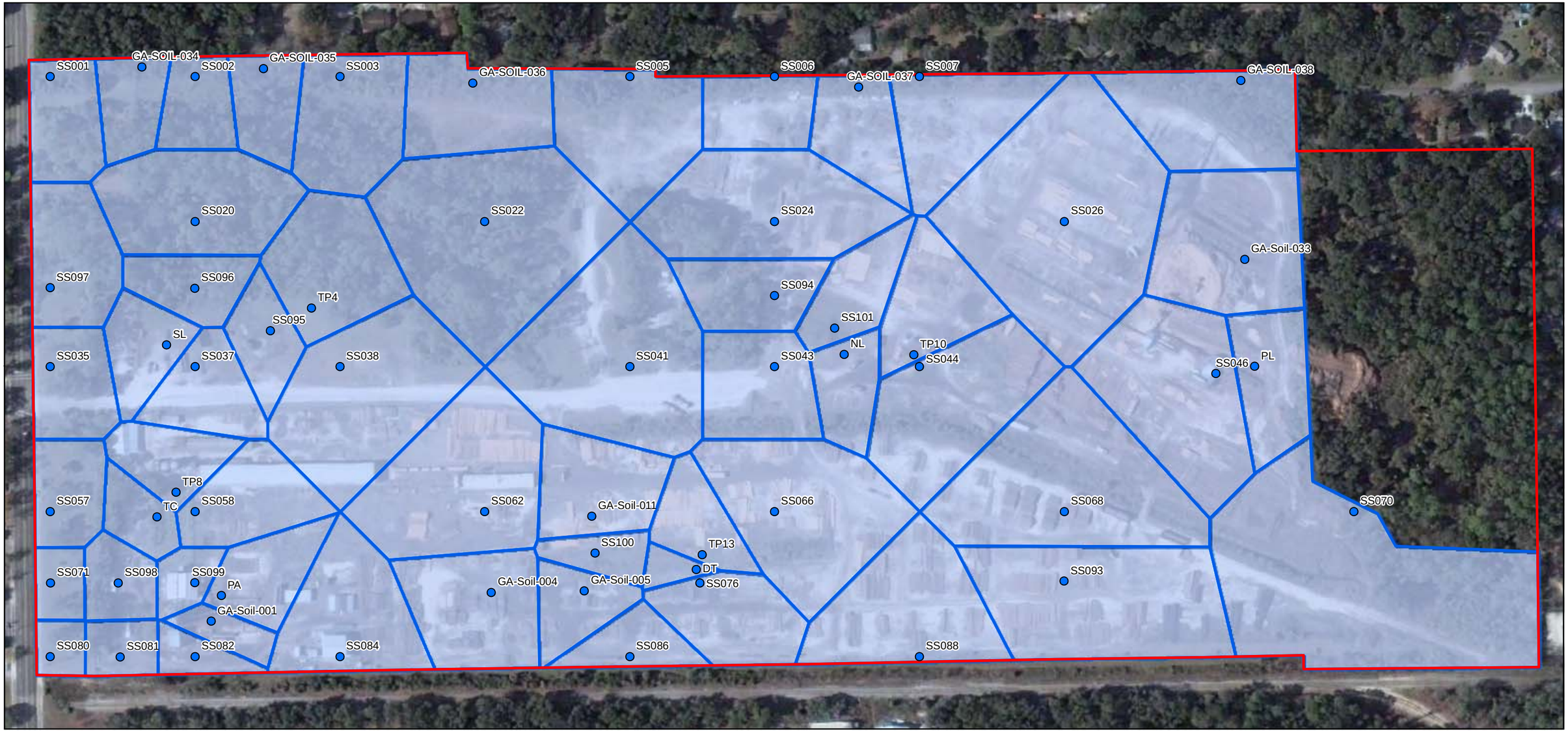
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4B** **Thiessen Polygons for 0 to 6 Foot Soil Samples for Acenaphthene, Anthracene, BAP-TE, Fluoranthene, Fluorene, Naphthalene, Pentachlorophenol, Phenanthrene, and Pyrene** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4B.mxd H:\Beazer\Gainsville\Task21\Export\Figure4B.pdf December 22, 2008 DWN: APC CHKD: KMP



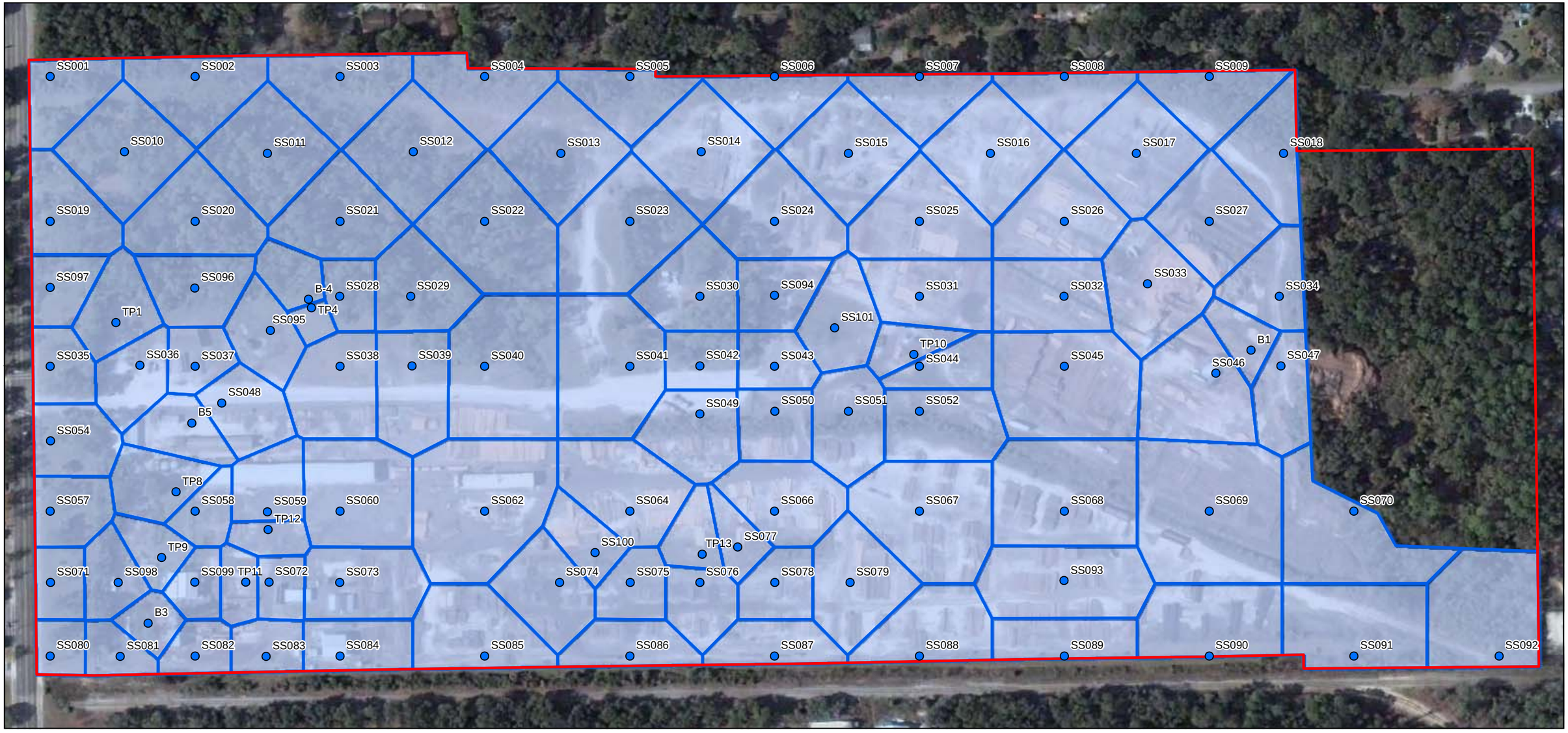
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4C** **Thiessen Polygons for 0 to 6 Foot Soil Samples for Antimony and Carbazole** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4C.mxd H:\Beazer\Gainsville\Task21\Export\Figure4C.pdf December 22, 2008 DWN: APC CHKD: KMP



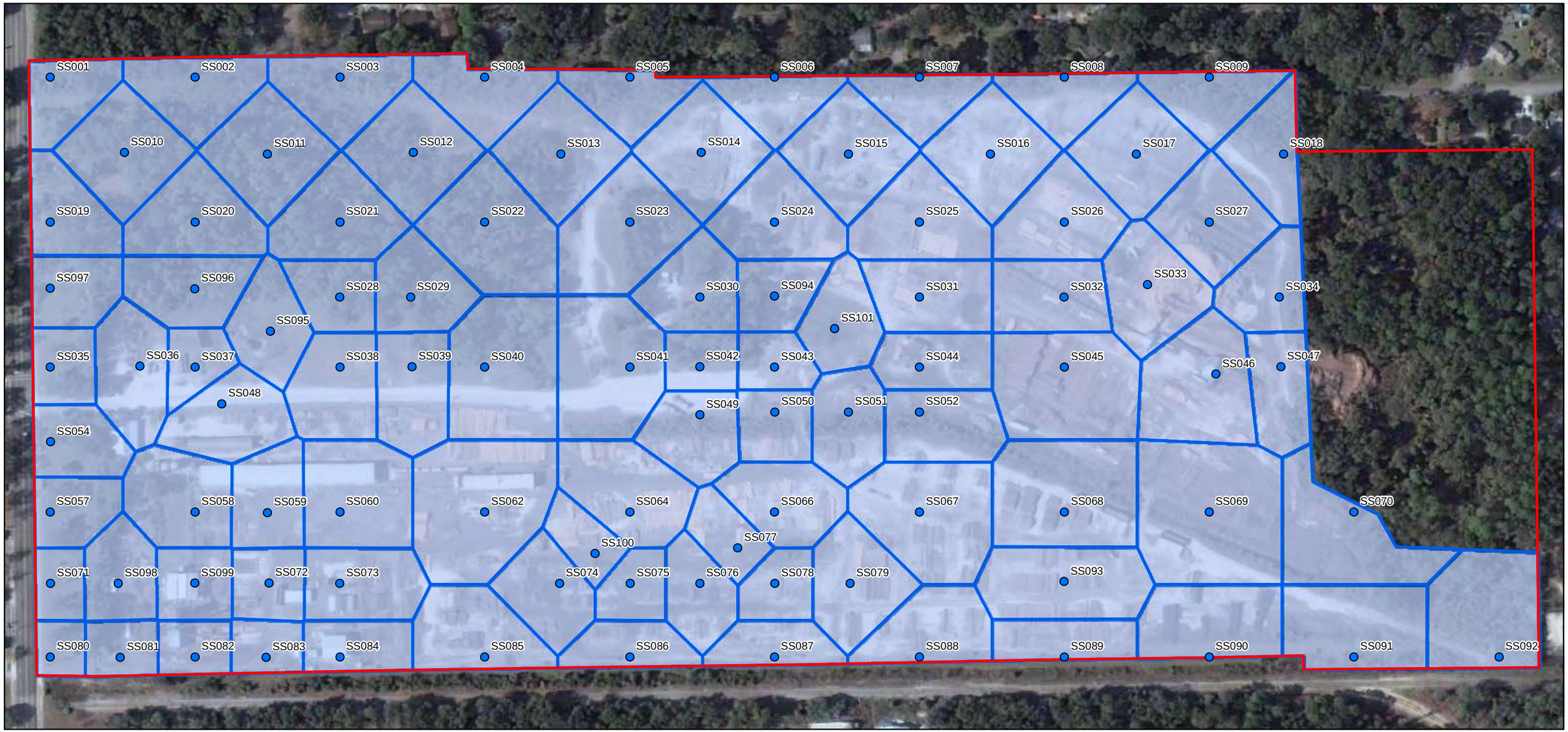
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4D** **Thiessen Polygons for 0 to 6 Foot Soil Samples for 2-Methylnaphthalene** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4D.mxd H:\Beazer\Gainsville\Task21\Export\Figure4D.pdf December 22, 2008 DWN: APC CHKD: KMP



LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4E** **Thiessen Polygons for 0 to 6 Foot Soil Samples for TCDD-TEQ** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4E.mxd H:\Beazer\Gainsville\Task21\Export\Figure4E.pdf December 22, 2008 DWN: APC CHKD: KMP



LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4F** **Thiessen Polygons for 0 to 6 Foot Soil Samples for Copper** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4F.mxd H:\Beazer\Gainsville\Task21\Export\Figure4F.pdf December 22, 2008 DWN: APC CHKD: KMP



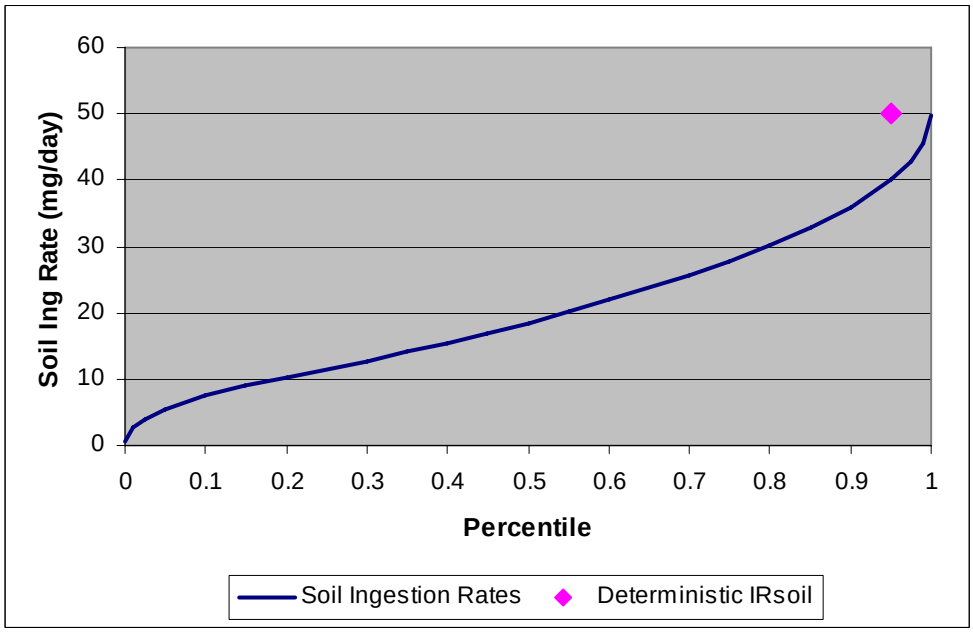
LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sampling Location Thiessen Polygon Site Boundary	**Figure 4G** **Thiessen Polygons for 0 to 6 Foot Soil Samples for Lead and Mercury** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task21\MXD\Figure4G.mxd H:\Beazer\Gainsville\Task21\Export\Figure4G.pdf December 22, 2008 DWN: APC CHKD: KMP

LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sediment Sampling Locations Site Boundary Drainage Ditch Lengths SD001, SD002, SD003, SD004, SD005, SD006, SD007, SD008, SD009	**Figure 4H** **Lengths of the Drainage Ditch Partitioned for Sediment Samples** Koppers, Inc. Wood-Treating Facility Gainesville, Florida		Base Map Data from Google Earth, Aquired September 11, 2008. N 0 250 Feet amec AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainesville\Task21\MXD\Figure4H.mxd H:\Beazer\Gainesville\Task21\Export\Figure4H.pdf December 22, 2008 DWN: APC CHKD: AW

Figure 5A
Soil Ingestion Rate Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(0.5,10,50)

Distribution for Soil Ingestion Rates



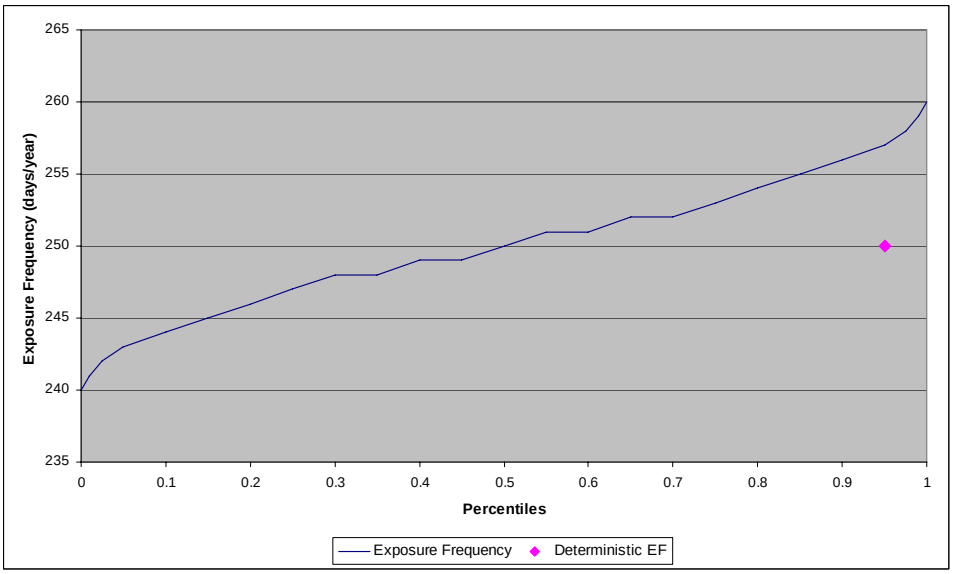
Summary Statistics

Metric	Soil Ingestion Rates (mg/day)
Mean	20.2
SD	10.7
Distribution Type	Triangular
0% (Min)	0.7
1%	2.7
2.5%	3.9
5%	5.3
10%	7.4
15%	8.9
20%	10.2
25%	11.5
30%	12.8
35%	14.1
40%	15.5
45%	17.0
50%	18.5
55%	20.1
60%	21.9
65%	23.7
70%	25.6
75%	27.7
80%	30.1
85%	32.8
90%	35.9
95%	40.0
97.5%	42.9
99%	45.5
100% (Max)	49.7

Figure 5B
Exposure Frequency Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(240,250,260)

Distribution for Exposure Frequency
BBA, WAA, EAA, PA



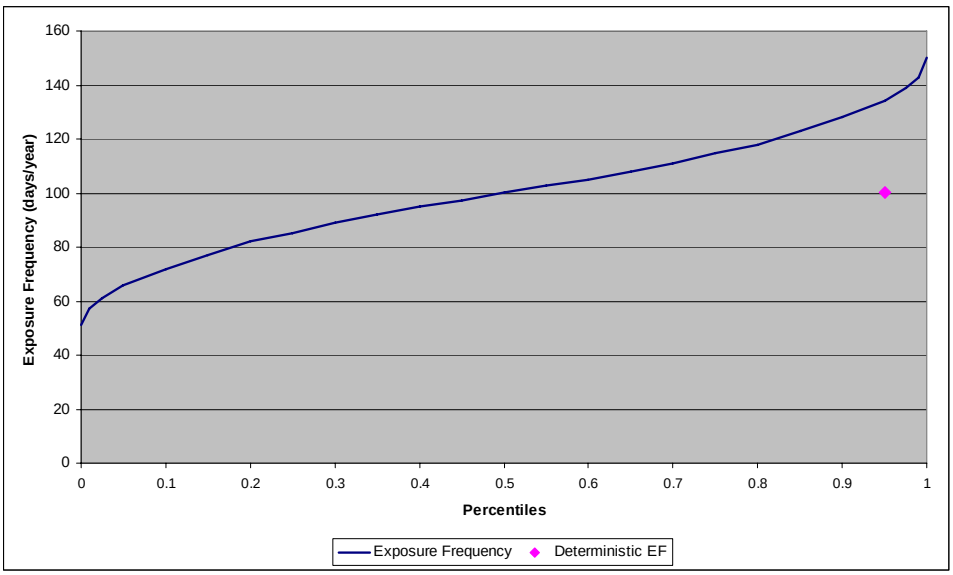
Summary Statistics

Metric	Exposure Frequency (days/year)
Mean	250
SD	4.1
Distribution Type	Triangular
0% (Min)	240
1%	241
2.5%	242
5%	243
10%	244
15%	245
20%	246
25%	247
30%	248
35%	248
40%	249
45%	249
50%	250
55%	251
60%	251
65%	252
70%	252
75%	253
80%	254
85%	255
90%	256
95%	257
97.5%	258
99%	259
100% (Max)	260

Figure 5B
Exposure Frequency Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(50,100,150)

Distribution for Exposure Frequency
SWWA, NWGA, NEGA

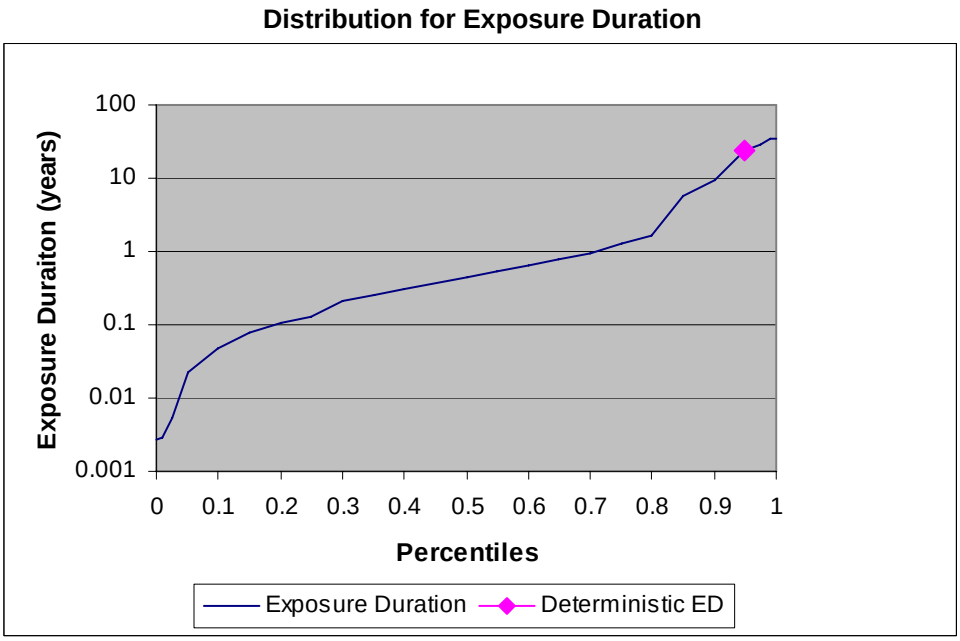


Summary Statistics

Metric	Exposure Frequency (days/year)
Mean	100
SD	20.4
Distribution Type	Triangular
0% (Min)	51
1%	57
2.5%	61
5%	66
10%	72
15%	77
20%	82
25%	85
30%	89
35%	92
40%	95
45%	97
50%	100
55%	103
60%	105
65%	108
70%	111
75%	115
80%	118
85%	123
90%	128
95%	134
97.5%	139
99%	143
100% (Max)	150

Figure 5C
Exposure Duration Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	NA
@Risk Function	N/A (Empirical data)



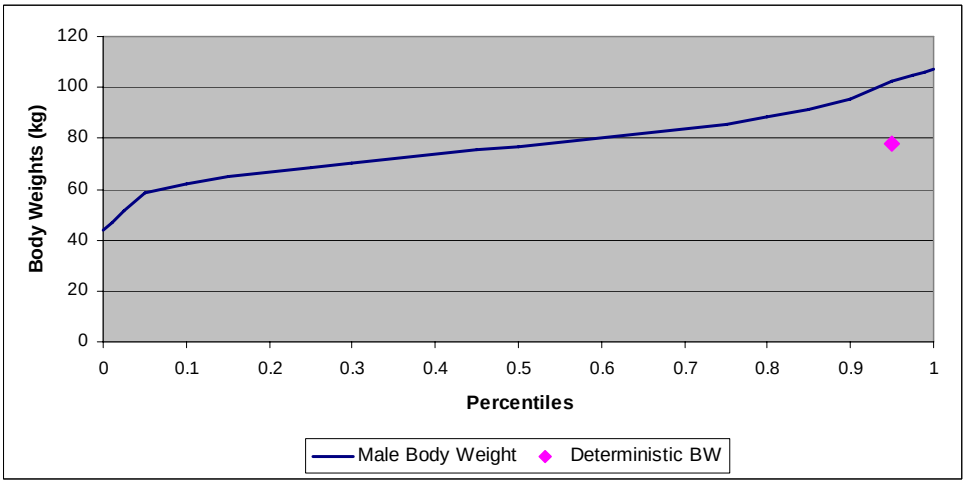
Summary Statistics

Metric	Exposure Duration (years)
Mean	2.5
SD	6.3
Distribution Type	Empirical
0% (Min)	0.0027
1%	0.0028
2.5%	0.0055
5%	0.0232
10%	0.0471
15%	0.0792
20%	0.1085
25%	0.1315
30%	0.2167
35%	0.2553
40%	0.3090
45%	0.3729
50%	0.4466
55%	0.5452
60%	0.6400
65%	0.7574
70%	0.9452
75%	1.2959
80%	1.6444
85%	5.5632
90%	9.6348
95%	23.8581
97.5%	29.1840
99%	34.1898
100% (Max)	35.1479

Figure 5D
Body Weight Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskCumul(44,107,{58.6, 62.3, 64.9, 68.7, 76.9, 85.6, 91.3, 95.7, 102.7}, {0.05, 0.1, 0.15, 0.25, 0.5, 0.75, 0.85, 0.9, 0.95})

Distribution for Male Body Weight



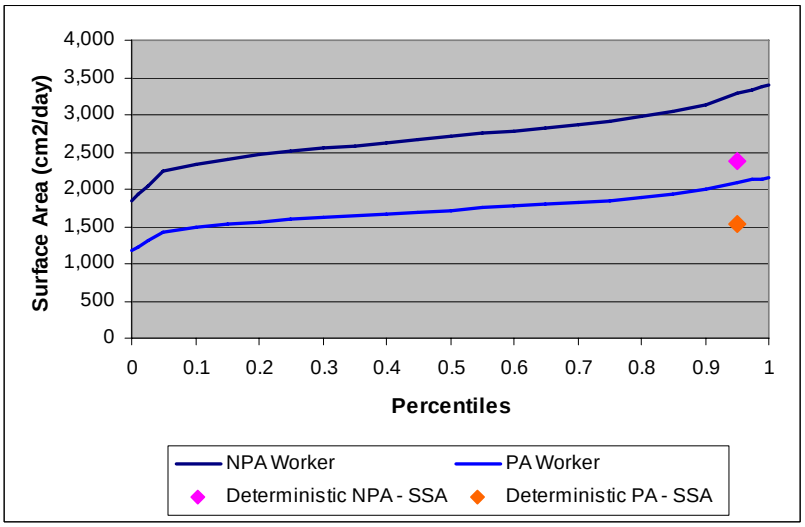
Summary Statistics

Metric	Male Body Weight (kg)
Mean	77.7
SD	13.0
Distribution Type	Cumulative
0% (Min)	44.0
1%	46.9
2.5%	51.3
5%	58.6
10%	62.3
15%	64.9
20%	66.8
25%	68.7
30%	70.3
35%	72.0
40%	73.6
45%	75.3
50%	76.9
55%	78.6
60%	80.4
65%	82.1
70%	83.9
75%	85.6
80%	88.4
85%	91.3
90%	95.7
95%	102.7
97.5%	104.8
99%	106.1
100% (Max)	107.0

Figure 5E
Skin Surface Area Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	N/A
@Risk Function	N/A (Calculated by the model)

Distribution for Skin Surface Area



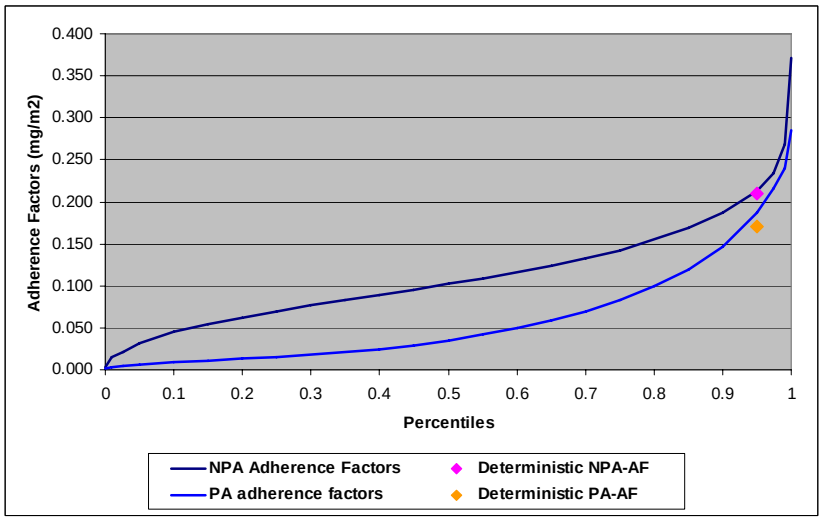
Summary Statistics

Metric	Male non-Process Area Worker (cm^2/day)	Male PA Worker (cm^2/day)
Mean	2,574	1,635
SD	813	517
Distribution Type	N/A	N/A
0% (Min)	1,850	1,175
1%	1,930	1,226
2.50%	2,052	1,303
5%	2,247	1,427
10%	2,343	1,488
15%	2,410	1,531
20%	2,458	1,561
25%	2,505	1,591
30%	2,546	1,617
35%	2,586	1,643
40%	2,626	1,668
45%	2,666	1,693
50%	2,705	1,718
55%	2,747	1,745
60%	2,788	1,771
65%	2,829	1,797
70%	2,870	1,823
75%	2,911	1,849
80%	2,976	1,890
85%	3,042	1,932
90%	3,140	1,995
95%	3,296	2,093
97.50%	3,342	2,123
99%	3,370	2,141
100% (Max)	3,389	2,153

Figure 5F
Dermal Adherence Factors Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	See description above

Distribution for Dermal Adherence Factors



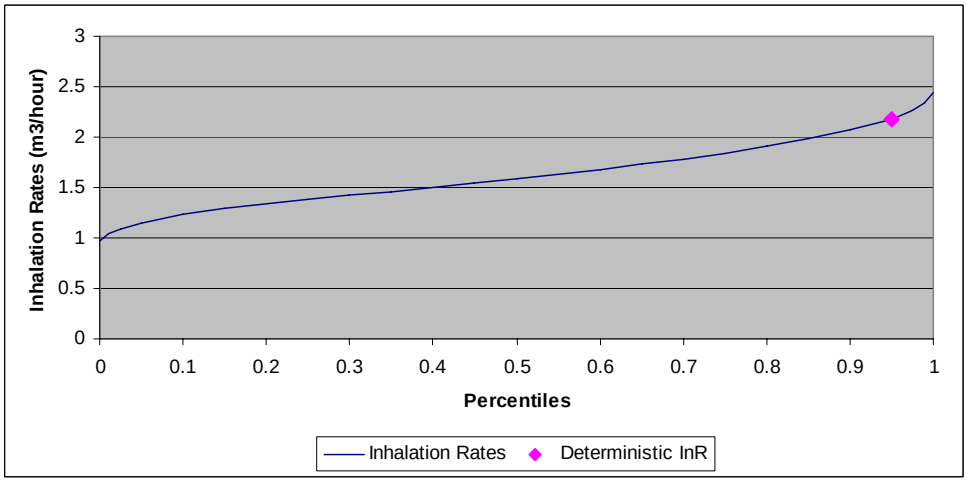
Summary Statistics

Metric	non-Process Area Worker (mg/cm^2)	PA Worker (mg/cm^2)
Mean	0.109	0.058
SD	0.056	0.058
Distribution Type	See description	See description
0% (Min)	0.003	0.002
1%	0.015	0.003
2.50%	0.022	0.005
5%	0.031	0.007
10%	0.045	0.009
15%	0.054	0.011
20%	0.062	0.013
25%	0.070	0.016
30%	0.076	0.018
35%	0.083	0.021
40%	0.089	0.025
45%	0.096	0.029
50%	0.103	0.034
55%	0.109	0.042
60%	0.116	0.049
65%	0.124	0.058
70%	0.132	0.069
75%	0.142	0.083
80%	0.155	0.100
85%	0.169	0.119
90%	0.187	0.147
95%	0.212	0.187
97.50%	0.234	0.216
99%	0.269	0.241
100% (Max)	0.372	0.285

Figure 5G
Inhalation Rate Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(0.96,1.44,2.46)

Distribution for Inhalation Rates



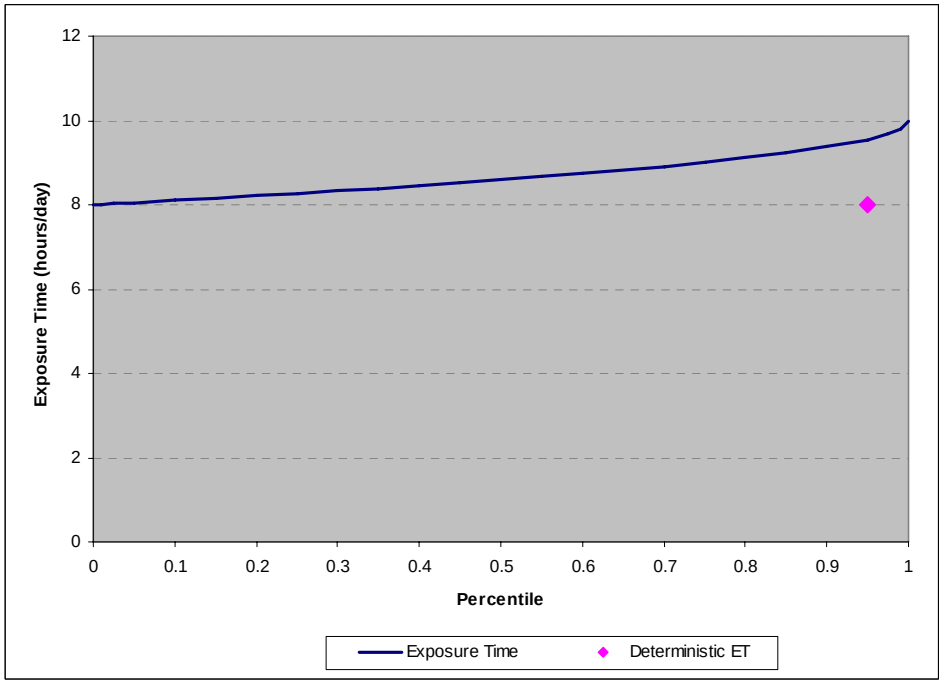
Summary Statistics

Metric	Inhalation Rate (m^3/hour)
Mean	2.0
SD	0.6
Distribution Type	Triangular
0% (Min)	0.97
1%	1.04
2.5%	1.09
5%	1.15
10%	1.23
15%	1.29
20%	1.34
25%	1.38
30%	1.42
35%	1.46
40%	1.50
45%	1.54
50%	1.59
55%	1.63
60%	1.68
65%	1.73
70%	1.78
75%	1.84
80%	1.91
85%	1.98
90%	2.07
95%	2.18
97.5%	2.26
99%	2.34
100% (Max)	2.45

Figure 5H
Exposure Time Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(8,8,10)

Distribution for Exposure Time
BBA, WAA, EAA, PA



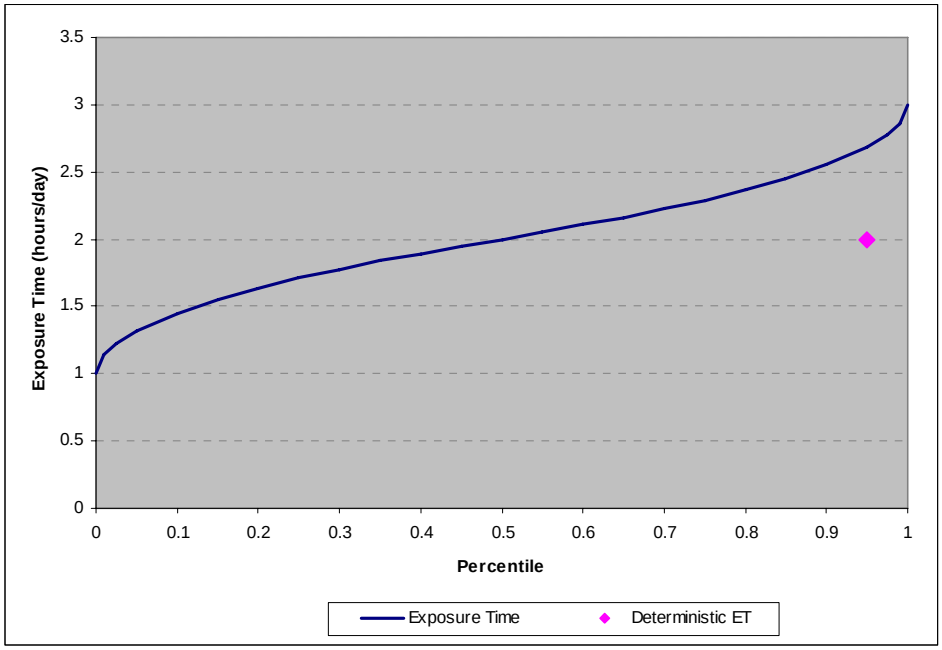
Summary Statistics

Metric	Exposure Time (hours/day)
Mean	8.7
SD	0.5
Distribution Type	Triangular
0% (Min)	8.00
1%	8.01
2.5%	8.02
5%	8.05
10%	8.10
15%	8.16
20%	8.21
25%	8.27
30%	8.33
35%	8.39
40%	8.45
45%	8.52
50%	8.59
55%	8.66
60%	8.74
65%	8.82
70%	8.90
75%	9.00
80%	9.11
85%	9.22
90%	9.37
95%	9.55
97.5%	9.68
99%	9.80
100% (Max)	10.0

Figure 5H
Exposure Time Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	5,000
@Risk Function	RiskTriang(1,2,3)

Distribution for Exposure Time
SWWA, NWGA, NEGA



Summary Statistics

Metric	Exposure Time (hours/day)
Mean	2
SD	041
Distribution Type	Triangular
0% (Min)	1.0
1%	1.14
2.5%	1.22
5%	1.32
10%	1.45
15%	1.55
20%	1.63
25%	1.71
30%	1.77
35%	1.84
40%	1.89
45%	1.95
50%	2.00
55%	2.05
60%	2.11
65%	2.16
70%	2.23
75%	2.29
80%	2.37
85%	2.45
90%	2.55
95%	2.68
97.5%	2.78
99%	2.86
100% (Max)	3.0

Figure 5I
Respirable Particulate Matter Distribution
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters	
Number of Iterations	N/A
@Risk Function	N/A (used measured data)

Summary Statistics

Metric	Urban RPM (mg/m^3)
Mean	0.022
SD	0.001
Distribution Type	N/A
0% (Min)	0.006
1%	0.007
2.50%	0.007
5%	0.008
10%	0.012
15%	0.013
20%	0.015
25%	0.017
30%	0.018
35%	0.018
40%	0.019
45%	0.020
50%	0.021
55%	0.022
60%	0.023
65%	0.024
70%	0.026
75%	0.027
80%	0.029
85%	0.031
90%	0.033
95%	0.039
97.50%	0.050
99%	0.057
100% (Max)	0.057

Distribution for Respirable Particulate Matter

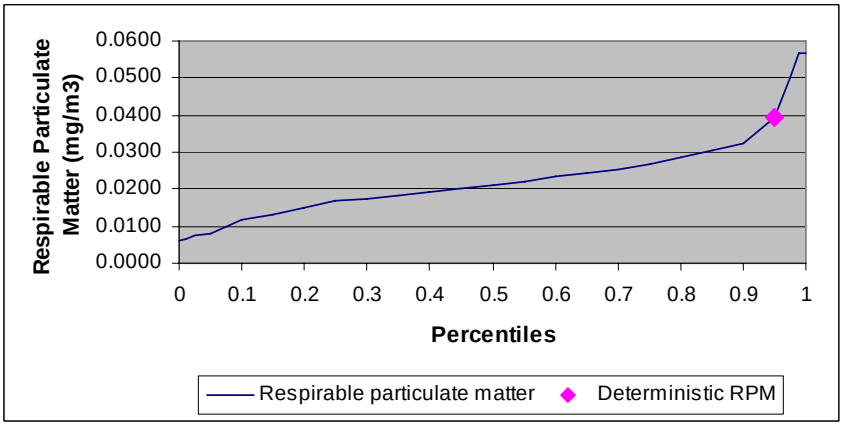
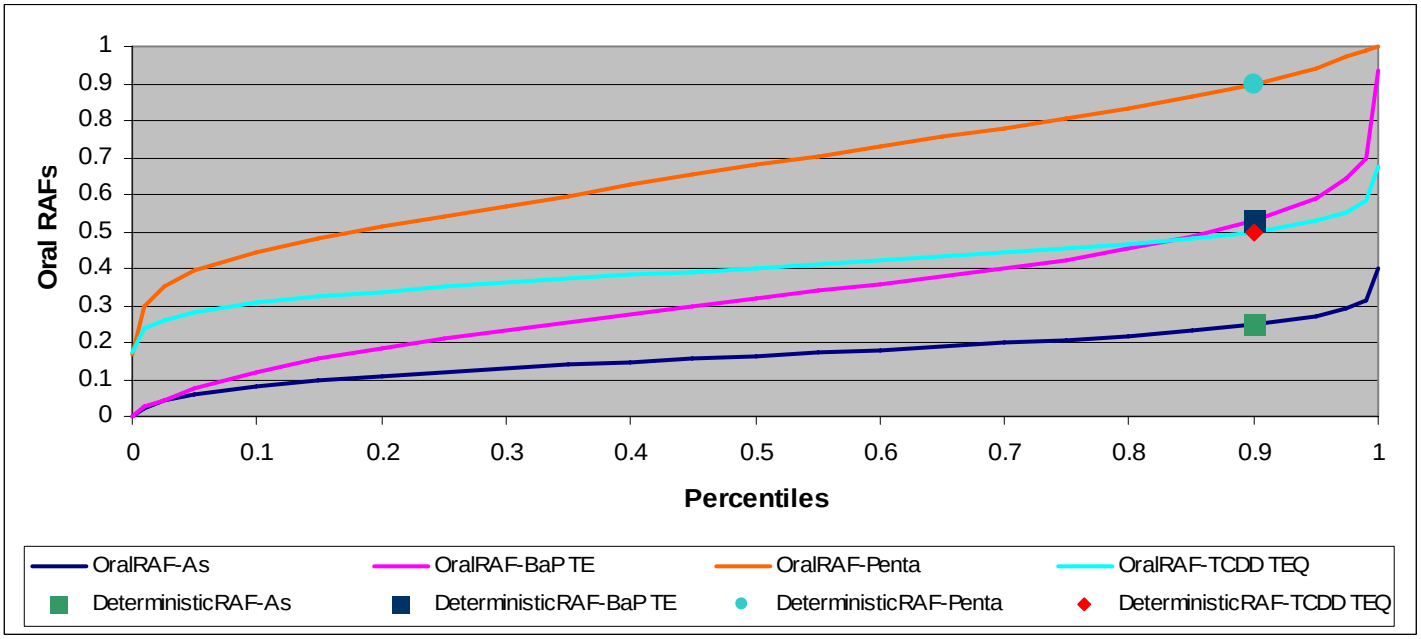


Figure 5J
Relative Absorption Factor Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida



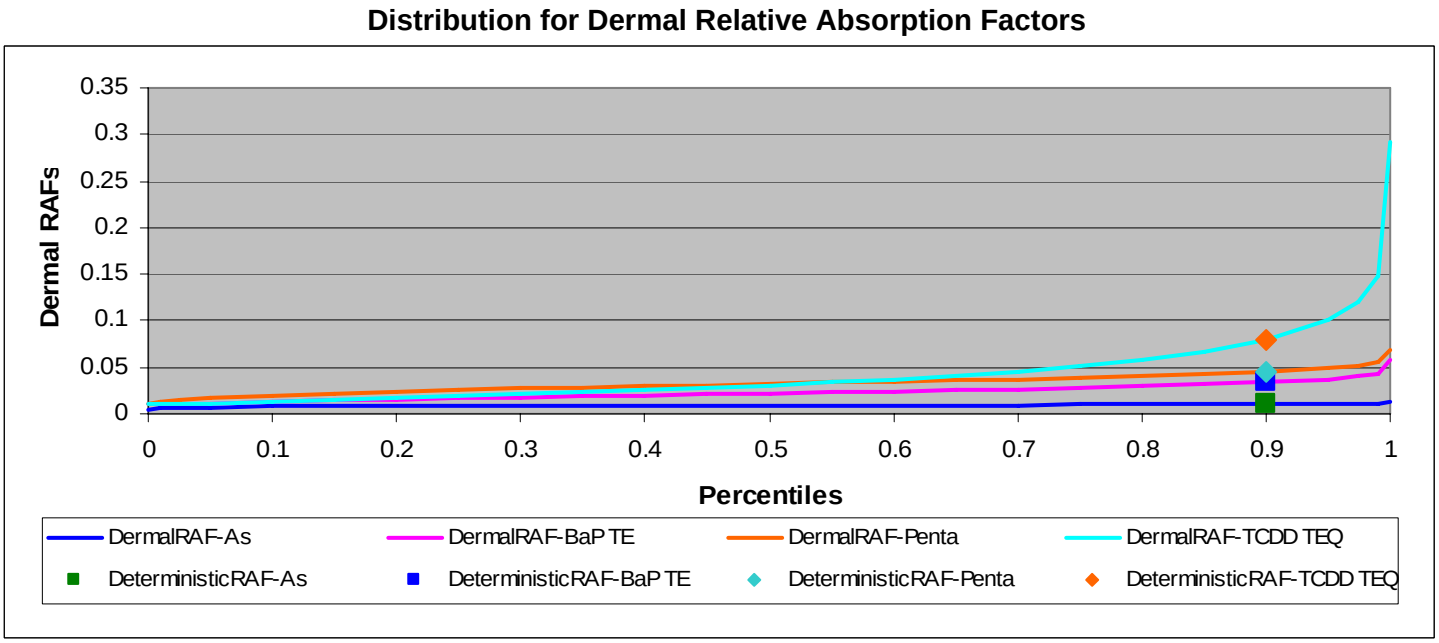


Figure 5J
Relative Absorption Factor Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

Summary Statistics – Oral Relative Absorption Factors

Metric	Oral RAF – Arsenic (unitless)	Oral RAF – BaP-TE (unitless)	Oral RAF – Pentachlorophenol (unitless)	Oral RAF - TCDD-TEQ (unitless)
Mean	0.163	0.31	0.66	0.4
SD	0.065	0.17	0.23	0.07
Distribution Type	Normal	Normal	Percentile	Bootstrap
0% (Min)	0.0006	0.0004	0.1652	0.1746
1%	0.0234	0.0272	0.2986	0.2397
2.5%	0.0416	0.0457	0.3520	0.2611
5%	0.0595	0.0749	0.3950	0.2821
10%	0.0817	0.1203	0.4436	0.3059
15%	0.0970	0.1559	0.4791	0.3230
20%	0.1094	0.1837	0.5109	0.3375
25%	0.1201	0.2088	0.5403	0.3489
30%	0.1297	0.2330	0.5696	0.3603
35%	0.1386	0.2556	0.5971	0.3714
40%	0.1471	0.2758	0.6253	0.3811
45%	0.1554	0.2965	0.6526	0.3907
50%	0.1635	0.3168	0.6792	0.4001
55%	0.1716	0.3381	0.7052	0.4098
60%	0.1799	0.3583	0.7298	0.4198
65%	0.1884	0.3793	0.7547	0.4301
70%	0.1974	0.4000	0.7797	0.4409
75%	0.2071	0.4228	0.8058	0.4529
80%	0.2180	0.4530	0.8333	0.4658
85%	0.2306	0.4858	0.8648	0.4811
90%	0.2465	0.5286	0.8992	0.4996
95%	0.2701	0.5880	0.9432	0.5275
97.5%	0.2904	0.6431	0.9704	0.5500
99%	0.3142	0.6956	0.9869	0.5815
100% (Max)	0.3997	0.9373	0.9999	0.6766

Figure 5J
Relative Absorption Factor Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

Summary Statistics – Dermal Relative Absorption Factors

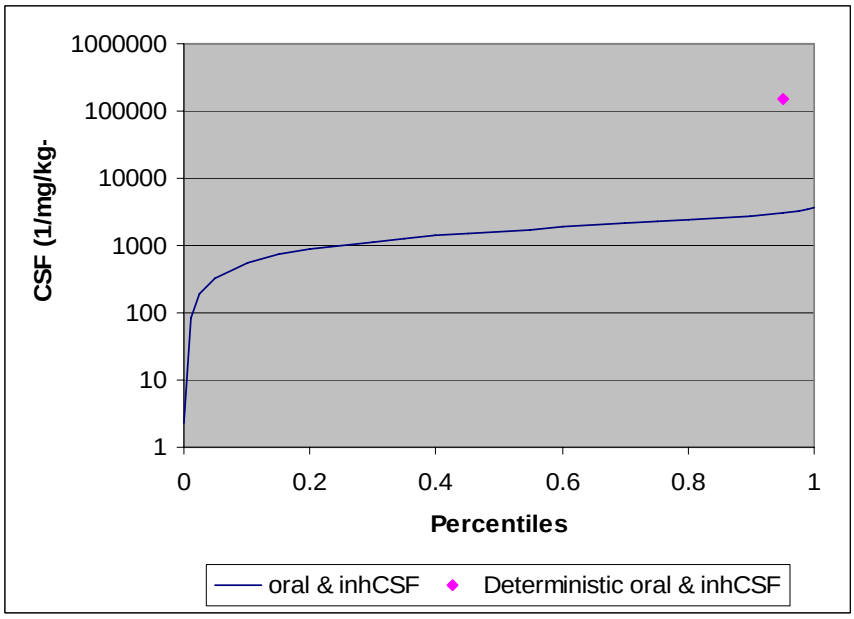
Metric	Dermal RAF – Arsenic (unitless)	Dermal RAF – BaP-TE (unitless)	Dermal RAF – Pentachlorophenol (unitless)	Dermal RAF - TCDD-TEQ) (unitless)
Mean	0.009	0.02	0.032	0.03
SD	0.001	0.01	0.01	0.06
Distribution Type	Normal	Normal	Normal	Exponential
0% (Min)	0.005	0.010	0.010	0.010
1%	0.007	0.010	0.012	0.010
2.5%	0.007	0.011	0.014	0.011
5%	0.007	0.012	0.017	0.012
10%	0.008	0.013	0.020	0.013
15%	0.008	0.014	0.022	0.015
20%	0.008	0.016	0.024	0.017
25%	0.008	0.017	0.026	0.019
30%	0.008	0.018	0.027	0.021
35%	0.009	0.019	0.028	0.023
40%	0.009	0.020	0.030	0.025
45%	0.009	0.021	0.031	0.028
50%	0.009	0.022	0.032	0.031
55%	0.009	0.023	0.033	0.034
60%	0.009	0.024	0.035	0.037
65%	0.009	0.025	0.036	0.041
70%	0.010	0.027	0.037	0.046
75%	0.010	0.028	0.039	0.052
80%	0.010	0.030	0.041	0.058
85%	0.010	0.031	0.042	0.067
90%	0.010	0.034	0.045	0.079
95%	0.011	0.037	0.049	0.100
97.5%	0.011	0.040	0.052	0.121
99%	0.011	0.044	0.055	0.148
100% (Max)	0.013	0.059	0.069	0.292

Figure 5K
Cancer Slope Factors – TCDD-TEQ Distributions
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

@RISK Parameters

Number of Iterations	5,000
@Risk Function	PertAlt (200, 1600, 3000)

Distribution for Cancer Slope Factor – TCDD TEQ



Summary Statistics

Metric	Oral CSF (mg/kg-day)$^{-1}$	Inh CSF (mg/kg-day)$^{-1}$
Mean	1644	1644
SD	814.4	814.4
Distribution Type	PertAlt	PertAlt
0% (Min)	2	2
1%	83	83
2.50%	190	190
5%	330	330
10%	546	546
15%	724	724
20%	877	877
25%	1016	1016
30%	1147	1147
35%	1272	1272
40%	1392	1392
45%	1511	1511
50%	1629	1629
55%	1746	1746
60%	1866	1866
65%	1988	1988
70%	2115	2115
75%	2249	2249
80%	2396	2396
85%	2559	2559
90%	2750	2750
95%	3006	3006
97.50%	3194	3194
99%	3380	3380
100% (Max)	3736	3736

Figure 6A
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results - Process Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

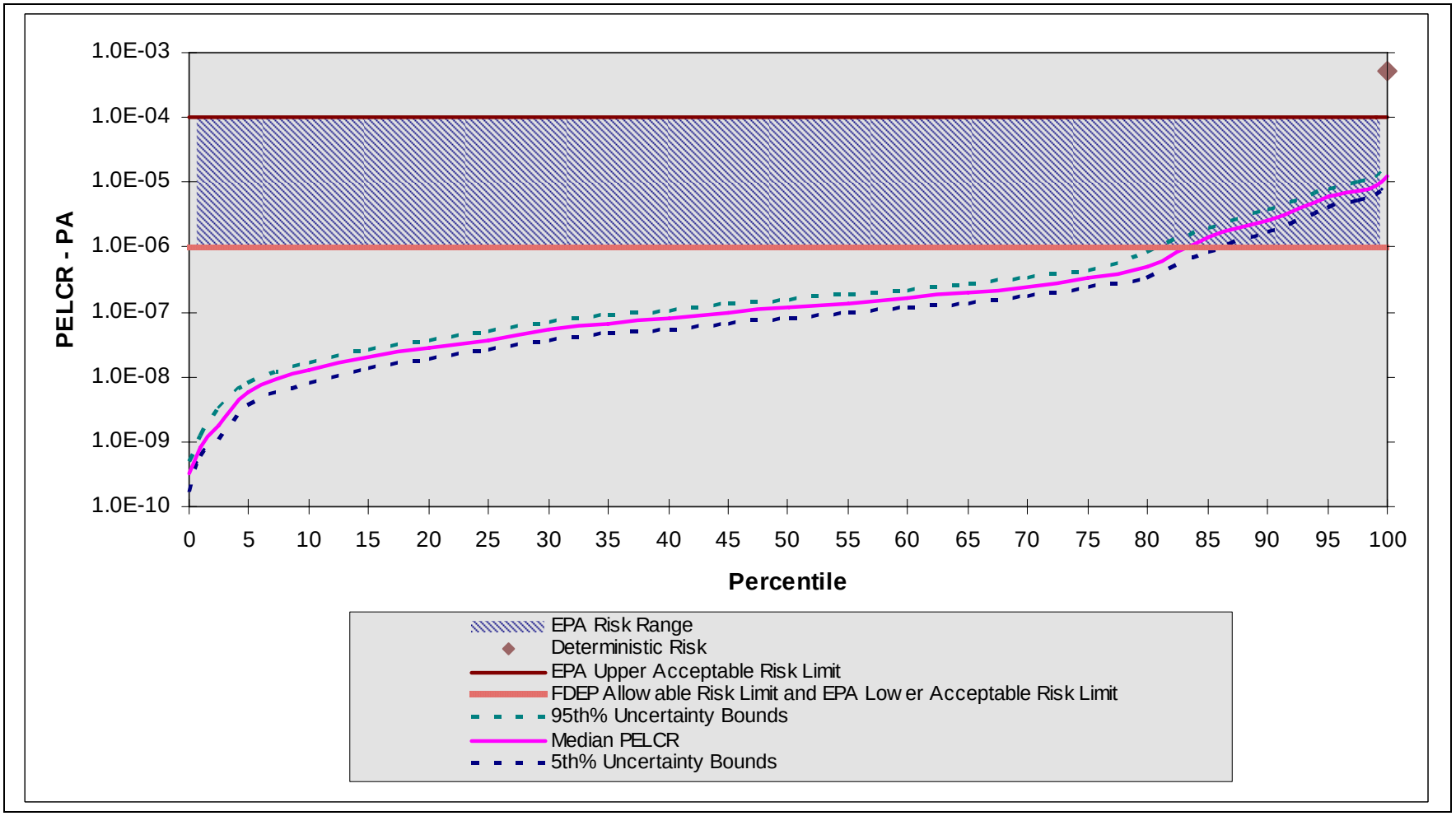


Figure 6B
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Southwest Wooded Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

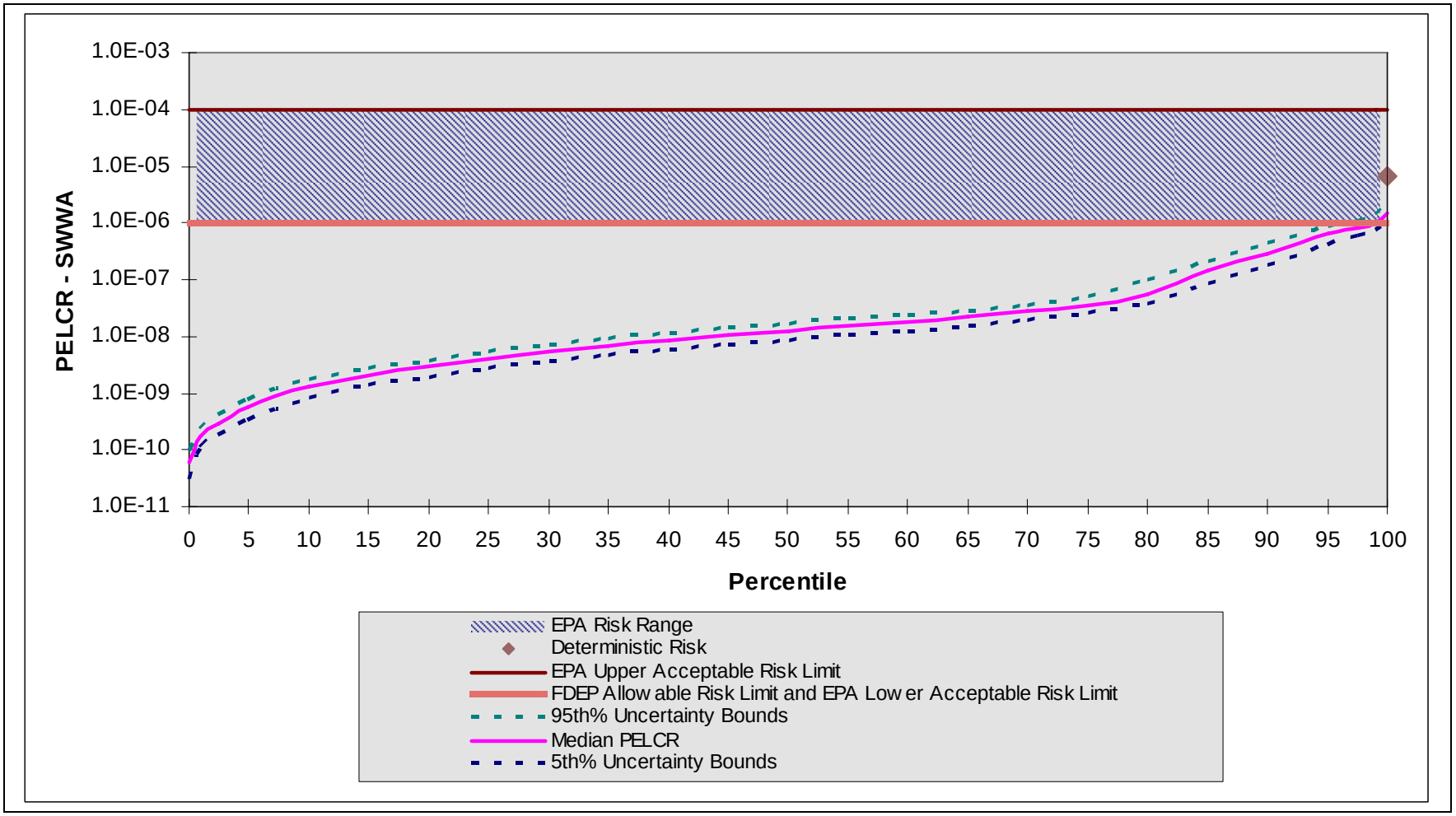


Figure 6C
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Western Active Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

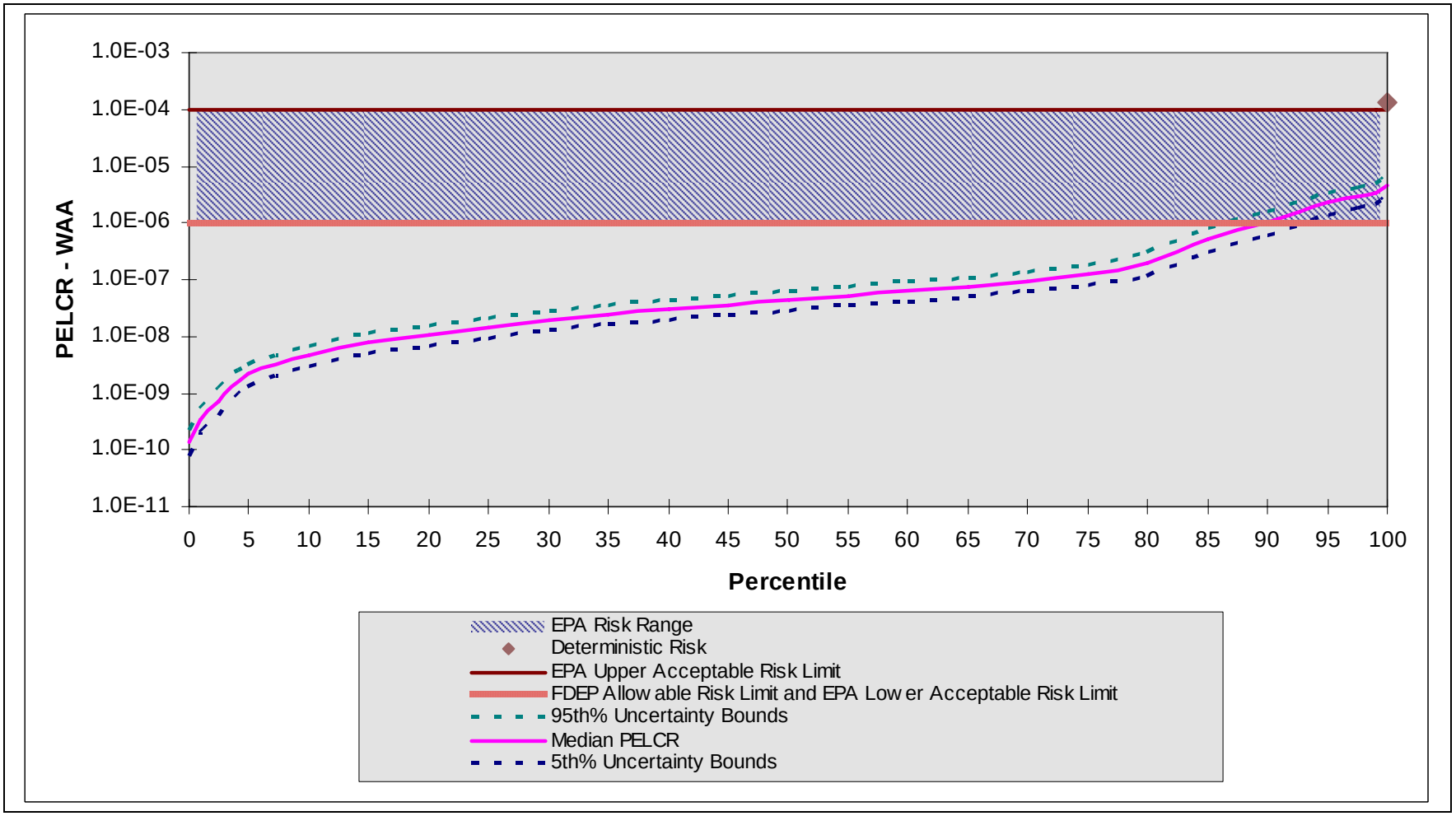


Figure 6D
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Northwest Grassed Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

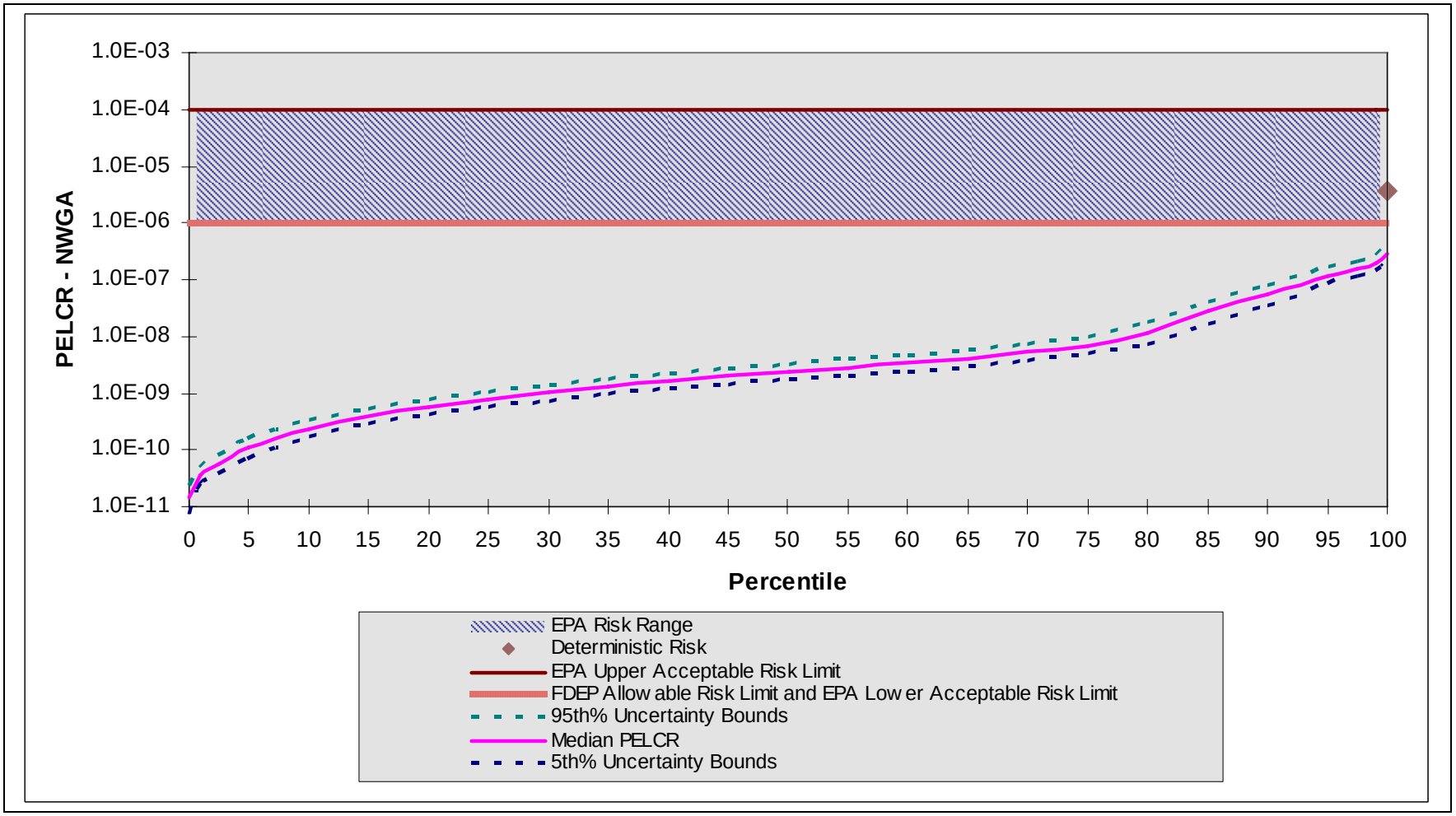


Figure 6E
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Boiler Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

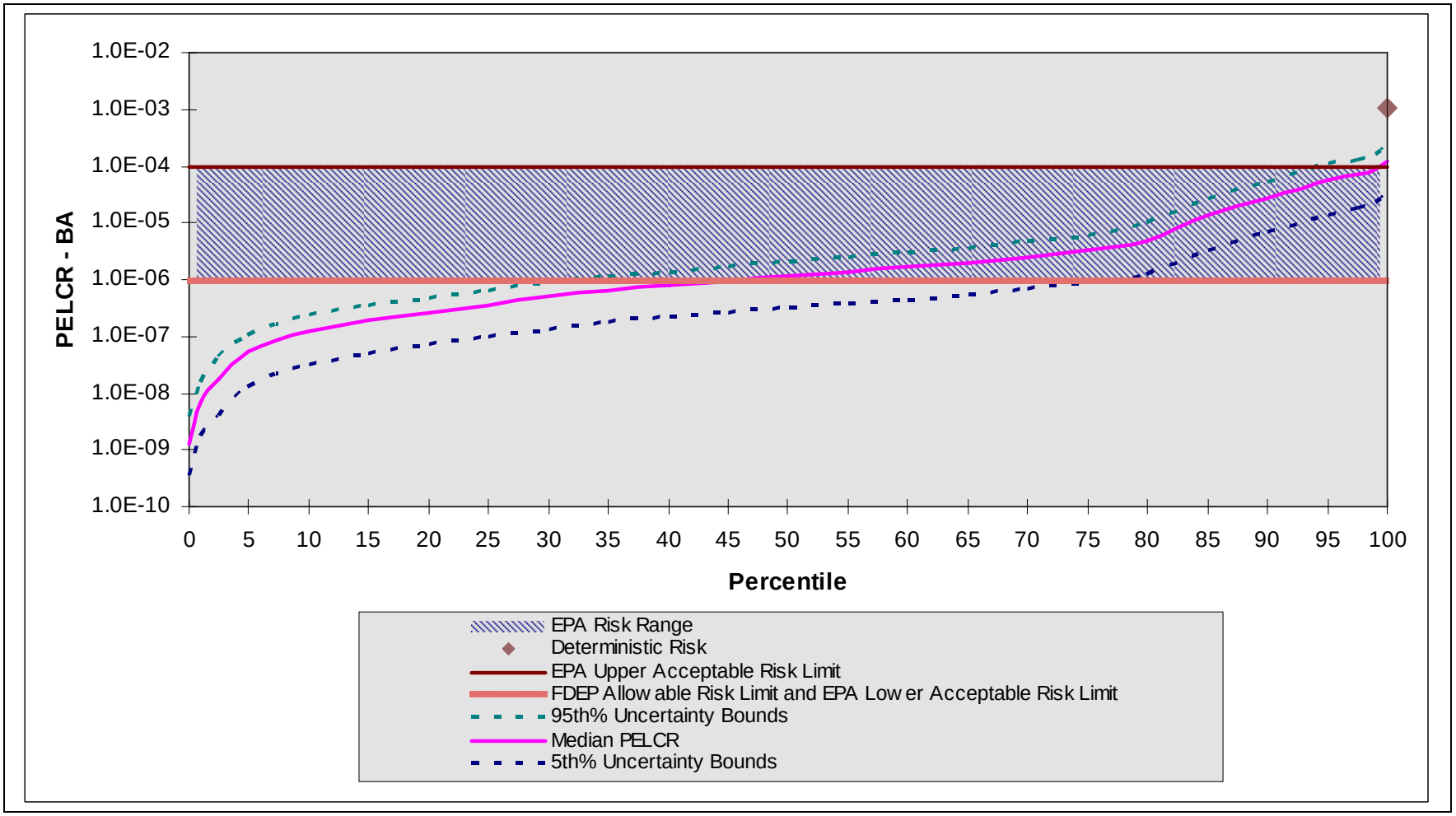


Figure 6F
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Eastern Active Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

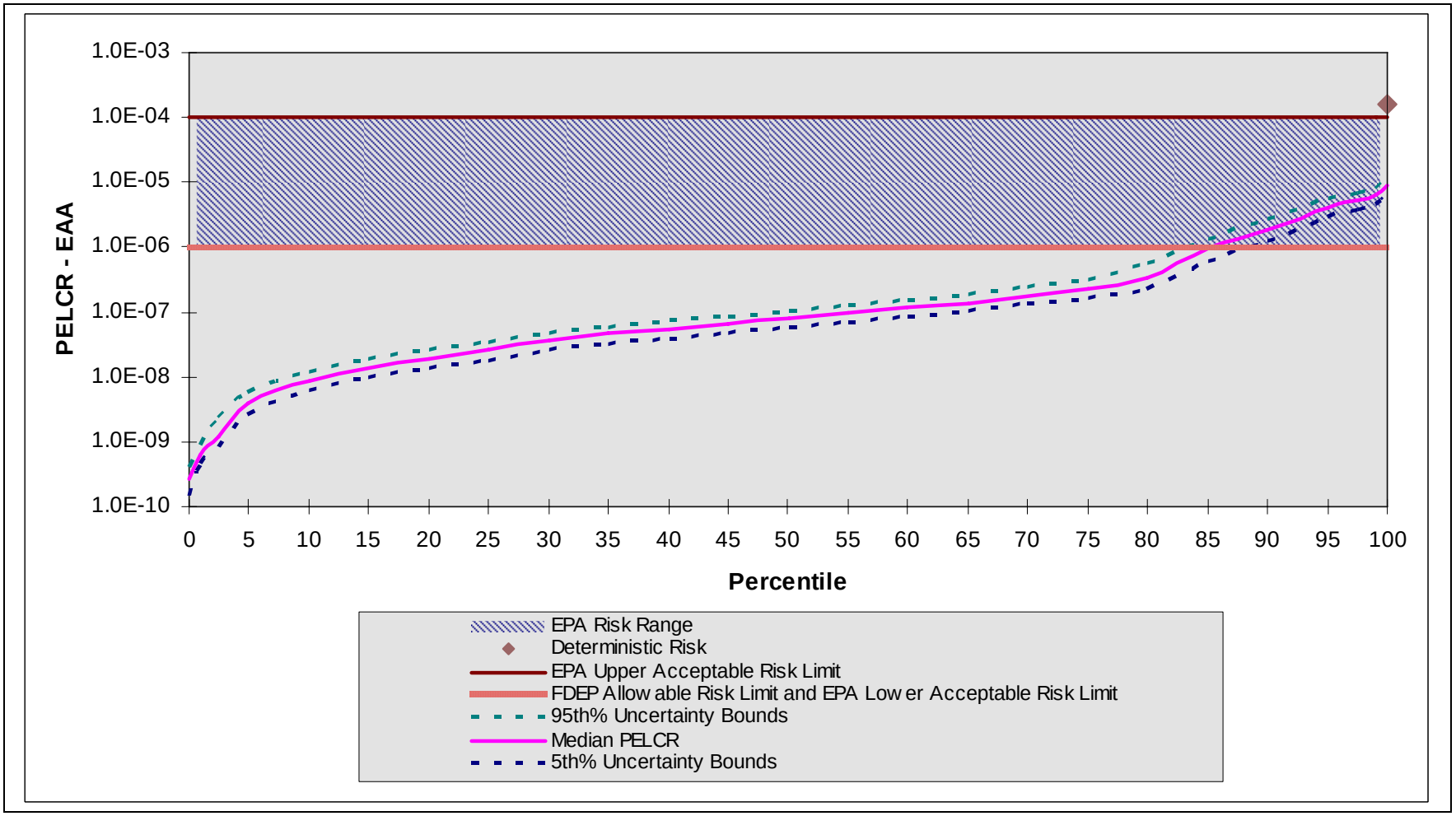


Figure 6G
MEE Model Results - Potential Excess Lifetime Cancer Risk for All COPCs and All Exposure Pathways and Comparison to Deterministic Results – Northeast Grassed Area
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida

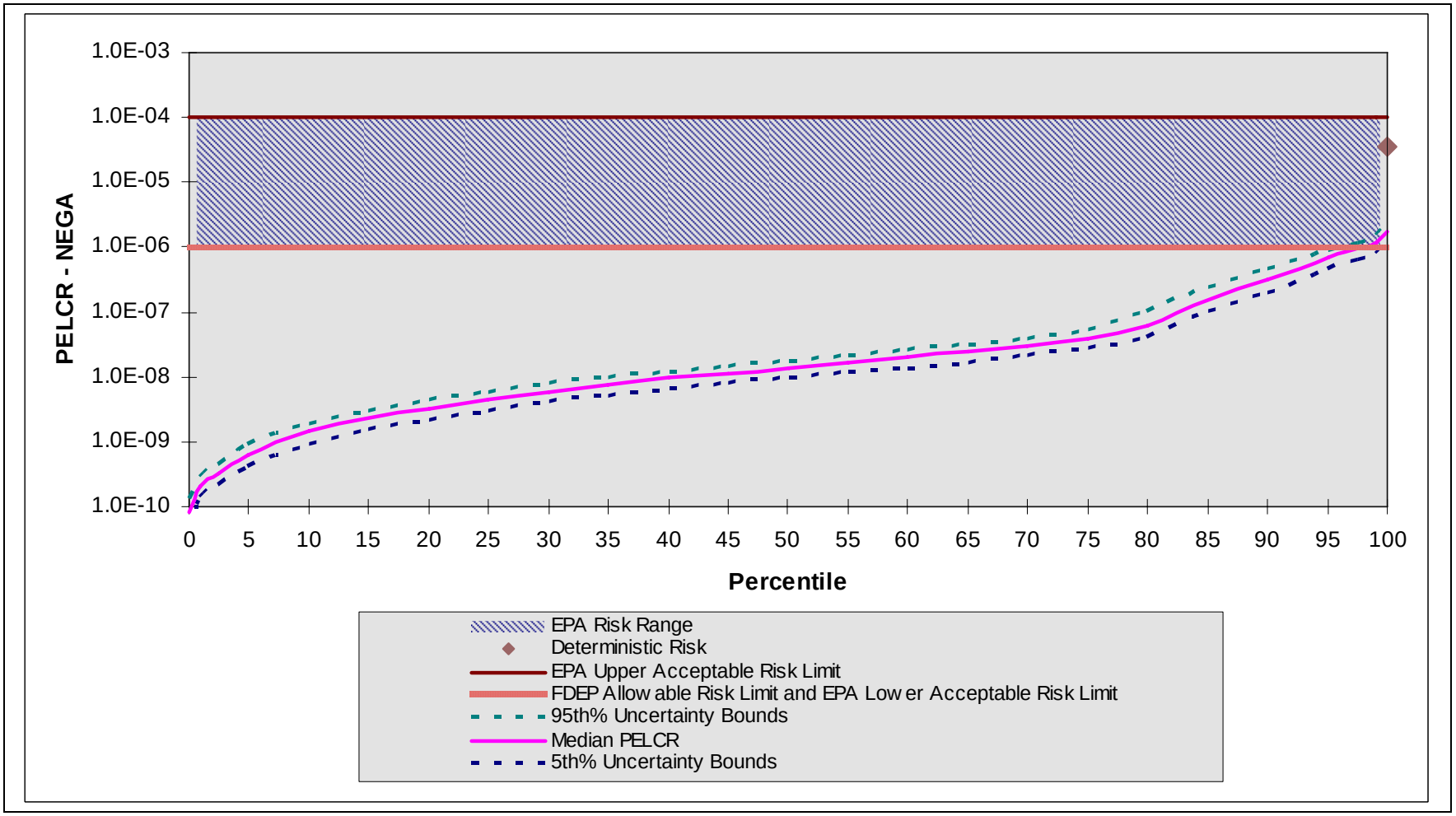
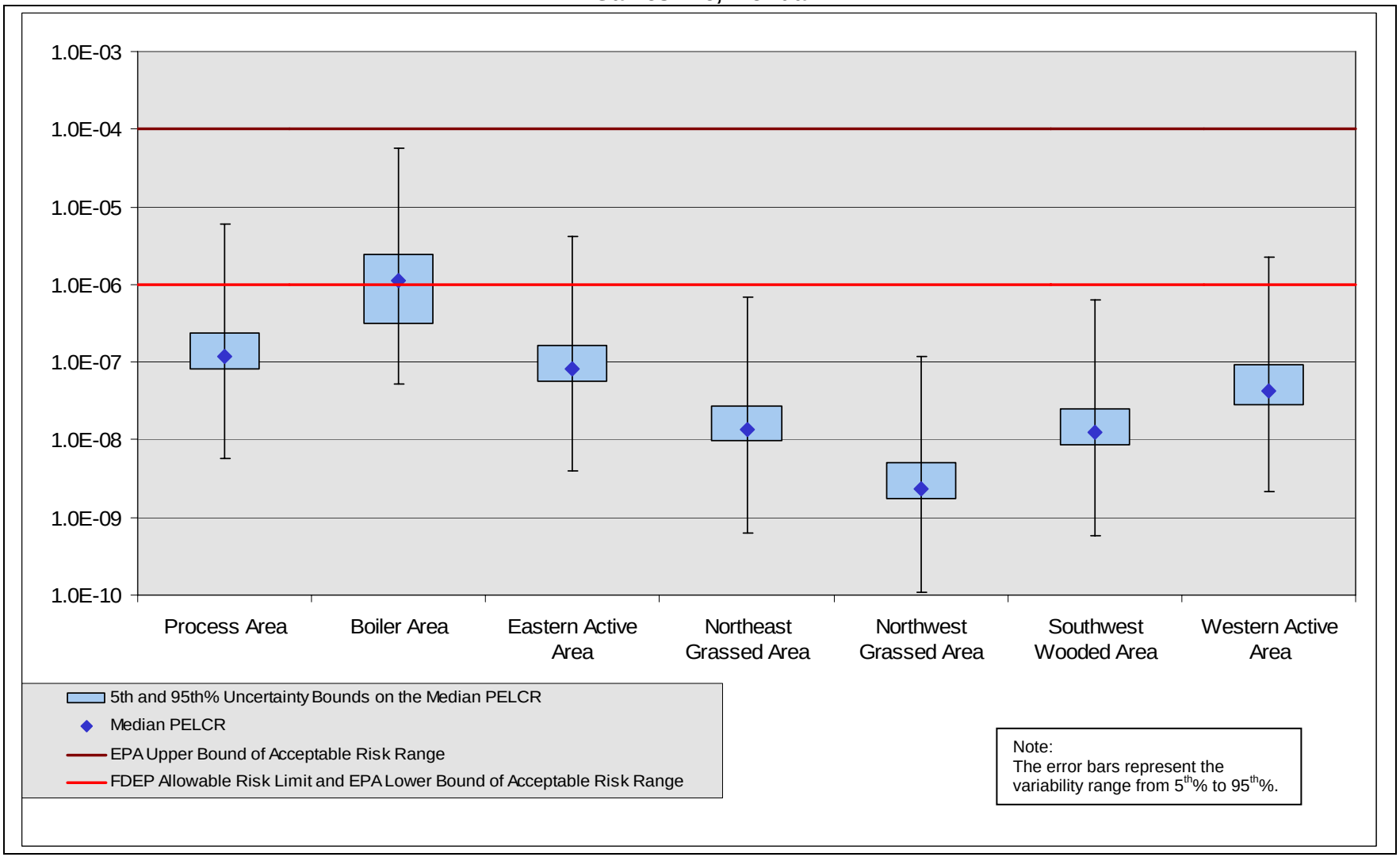


Figure 7
Summary of MEE Model Results
Potential Excess Lifetime Cancer Risk for All COPCs, All Exposure Pathways and All Evaluated Locations
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida



Tables

TABLE 1
SOIL/SEDIMENT SCREENING VALUES
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituents Detected in Soil or Sediment	FL SCTLs Direct Exposure Commercial / Industrial (mg/kg)	EPA Regional Screening Levels Industrial Soil (mg/kg)	Lower of FL SCTLs and EPA RSLs		Lowest Screening Value Divided by 10
				Value (mg/kg)	Source	
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	[a]	[a]	NA		NA
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	[a]	[a]	NA		NA
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	[a]	[a]	NA		NA
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	[a]	[a]	NA		NA
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	[a]	[a]	NA		NA
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	[a]	[a]	NA		NA
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	[a]	[a]	NA		NA
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	[a]	[a]	NA		NA
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	[a]	[a]	NA		NA
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	[a]	0.00044	0.00044	EPA RSL	0.000044
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	[a]	[a]	NA		NA
95-50-1	1,2-Dichlorobenzene	5000	10000	5000	FL SCTL	500
106-46-7	1,4-Dichlorobenzene	9.9	13	9.9	FL SCTL	0.99
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	[a]	[a]	NA		NA
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	[a]	0.000044	0.000044	EPA RSL	0.0000044
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	[a]	0.00013	0.00013	EPA RSL	0.000013
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00003	0.000018	0.000018	EPA RSL	0.0000018
95-95-4	2,4,5-Trichlorophenol	130000	62000	62000	EPA RSL	6200
95-95-4	2,4,5-Trichlorophenol	130000	62000	62000	EPA RSL	6200
105-67-9	2,4-Dimethylphenol	18000	12000	12000	EPA RSL	1200
121-14-2	2,4-Dinitrotoluene	4.3	1200	4.3	FL SCTL	0.43
91-57-6	2-Methylnaphthalene	2100	4100	2100	FL SCTL	210
88-74-4	2-Nitroaniline	130	82[b]	130	FL SCTL	13
99-09-2	3-Nitroaniline	130	82	82	EPA RSL	8.2
534-52-1	4,6-Dinitro-2-methylphenol	180	62	62	EPA RSL	6.2
101-55-3	4-Bromophenyl phenyl ether	NA	NA	NA		NA
59-50-7	4-Chloro-3-methylphenol	8000	NA	8000	FL SCTL	800
7005-72-3	4-Chlorophenyl phenyl ether	NA	NA	NA		NA
106-44-5	4-Methylphenol (m/p-cresol)	3400	3100	3100	EPA RSL	310
83-32-9	Acenaphthene	20000	33000	20000	FL SCTL	2000
208-96-8	Acenaphthylene	20000	NA	20000	FL SCTL	2000
67-64-1	Acetone	68000	610000	68000	FL SCTL	6800
120-12-7	Anthracene	300000	170000	170000	EPA RSL	17000
7440-36-0	Antimony	370	410	370	FL SCTL	37
7440-38-2	Arsenic	12	1.6	1.6	EPA RSL	0.16
7440-39-3	Barium	130000	190000	130000	FL SCTL	13000
71-43-2	Benzene	1.7	5.6	1.7	FL SCTL	0.17
56-55-3	Benzo(a)anthracene	[c]	2.1	2.1	EPA RSL	0.21
50-32-8	Benzo(a)pyrene	0.7	0.21	0.21	EPA RSL	0.021
205-99-2	Benzo(b)fluoranthene	[c]	2.1	2.1	EPA RSL	0.21
191-24-2	Benzo(g,h,i)perylene	52000	NA	52000	FL SCTL	5200
207-08-9	Benzo(k)fluoranthene	[c]	21	21	EPA RSL	2.1
85-68-7	Benzyl butyl phthalate	380000	910	910	EPA RSL	91
92-52-4	Biphenyl	34000	51000	34000	FL SCTL	3400
111-44-4	Bis(2-chloroethyl)ether	0.5	0.9	0.5	FL SCTL	0.05
117-81-7	Bis(2-ethylhexyl)phthalate	390	120	120	EPA RSL	12
7440-43-9	Cadmium	1700	810	810	EPA RSL	81
86-74-8	Carbazole	240	NA	240	FL SCTL	24
67-66-3	Chloroform	0.6	1.5	0.6	FL SCTL	0.06
7440-47-3	Chromium	470	1400	470	FL SCTL	47
218-01-9	Chrysene	[c]	210	210	EPA RSL	21
7440-50-8	Copper	89000	41000	41000	EPA RSL	4100
110-82-7	Cyclohexane	NA	30000	30000	EPA RSL	3000
53-70-3	Dibenzo(a,h)anthracene	[c]	0.21	0.21	EPA RSL	0.021
132-64-9	Dibenzofuran	6300	NA	6300	FL SCTL	630
75-09-2	Dichloromethane	26	54	26	FL SCTL	2.6
84-66-2	Diethyl phthalate	[d]	490000	490000	EPA RSL	49000
131-11-3	Dimethyl phthalate	[d]	NA	NA		NA
84-74-2	Di-n-butyl-phthalate	170000	62000	62000	EPA RSL	6200
117-84-0	Di-n-octyl-phthalate	39000	NA	39000	FL SCTL	3900
100-41-4	Ethylbenzene	9200	29	29	EPA RSL	2.9

TABLE 1
SOIL/SEDIMENT SCREENING VALUES
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituents Detected in Soil or Sediment	FL SCTLs Direct Exposure Commercial / Industrial (mg/kg)	EPA Regional Screening Levels Industrial Soil (mg/kg)	Lower of FL SCTLs and EPA RSLs		Lowest Screening Value Divided by 10
				Value (mg/kg)	Source	
206-44-0	Fluoranthene	59000	22000	22000	EPA RSL	2200
86-73-7	Fluorene	33000	22000	22000	EPA RSL	2200
118-74-1	Hexachlorobenzene	1.2	1.1	1.1	EPA RSL	0.11
193-39-5	Indeno(1,2,3-cd)pyrene	(c)	2.1	2.1	EPA RSL	0.21
98-82-8	Isopropylbenzene	1200	11000	1200	FL SCTL	120
7439-92-1	Lead	1400	800	800	EPA RSL	80
136777-61-2	m,p-Xylenes	700	19000	700	FL SCTL	70
7439-97-6	Mercury	17	28	17	FL SCTL	1.7
79-20-9	Methyl acetate	38000	1000000	38000	FL SCTL	3800
78-93-3	Methyl ethyl ketone	110000	190000	110000	FL SCTL	11000
108-10-1	Methyl isobutyl ketone	44000	52000	44000	FL SCTL	4400
108-88-3	Methylbenzene	60000	46000	46000	EPA RSL	4600
108-87-2	Methylcylohexane	NA	NA	NA	FL SCTL	NA
91-20-3	Naphthalene	300	20	20	EPA RSL	2
86-30-6	N-Nitrosodiphenylamine	730	350	350	EPA RSL	35
39001-02-0	Octachlorodibenzofuran	(a)	0.044	0.044	EPA RSL	0.0044
3268-87-9	Octachlorodibenzo-p-dioxin	(a)	0.061	0.061	EPA RSL	0.0061
95-47-6	O-Xylene	700	23000	700	FL SCTL	70
87-86-5	Pentachlorophenol	28	9	9	EPA RSL	0.9
85-01-8	Phenanthrene	36000	NA	36000	FL SCTL	3600
100-01-6	P-Nitroaniline	96	82	82	EPA RSL	8.2
129-00-0	Pyrene	45000	17000	17000	EPA RSL	1700
7782-49-2	Selenium	11000	5100	5100	EPA RSL	510
7440-22-4	Silver	8200	5100	5100	EPA RSL	510
100-42-5	Styrene	23000	38000	23000	FL SCTL	2300
127-18-4	Tetrachloroethylene	18	2.7	2.7	EPA RSL	0.27
7440-62-2	Vanadium	10000	7200	7200	EPA RSL	720

(a) Constituent included in TCDD-TEQ concentration, which is compared to the 2,3,7,8-tetrachlorodibenzo-p-dioxin screening value of 0.0000018 mg/kg.
(b) Used 3-nitroaniline as a surrogate.
(c) Constituent included in BaP-TE concentration, which is compared to the benzo(a)pyrene screening value of 0.021 mg/kg.
(d) FL SCTLs note " contaminant is not a health concern for this exposure scenario".

TABLE 2
TCDD TEFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Compound	TEF
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01
Octachlorodibenzo-p-dioxin	0.0003
2,3,7,8-Tetrachlorodibenzofuran	0.1
1,2,3,7,8-Pentachlorodibenzofuran	0.03
2,3,4,7,8-Pentachlorodibenzofuran	0.3
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.0003

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TABLE 3
BAP TEFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Compound	TEF
Benzo(a)pyrene	1
Benz(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(ah)anthracene	1
Indeno(123-cd)pyrene	0.1

USEPA, 1993.

TABLE 4A
COPC SCREENING FOR 0 TO 6 INCH SOIL
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Constituent Name	CAS No	Units	Sample Type	Number Detected	Number Analyzed	Frequency of Detect	Minimum Detect & Qualifier		Maximum Detect & Qualifier		Minimum Reporting Limit	Maximum Reporting Limit	Sample ID with Maximum Conc.	Sample Date	Start Depth	End Depth	Screening Level (mg/kg)	Is Max > Screening Level? (yes/no)	Is Compound COPC? (yes/no)
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	mg/kg	SO	85	86	98.84%	1.753E-05		0.522	J	0.0000739	522000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	mg/kg	SO	86	86	100.00%	7.952E-05		3.24		0.046	3240000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	mg/kg	SO	83	86	96.51%	1.022E-06	J	0.0453		0.000143	45300	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	mg/kg	SO	79	86	91.86%	4.75E-07	J	0.0157		0.000279	15700	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	mg/kg	SO	83	86	96.51%	5.78E-07	J	0.0244		0.000388	24400	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	mg/kg	SO	80	86	93.02%	4.07E-07	J	0.0102	J	0.000219	10200	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	mg/kg	SO	85	86	98.84%	2.449E-06	J	0.105		0.000235	105000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	mg/kg	SO	62	86	72.09%	1.78E-07	J	0.00425		0.000282	4250	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	mg/kg	SO	85	86	98.84%	1.666E-06	J	0.0495		0.000224	49500	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	mg/kg	SO	75	86	87.21%	3.7E-08	J	0.00143		0.000092	1430	SS058AA	12/5/2006	0	0.25	0.000044	Yes	Yes[1]
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	mg/kg	SO	80	86	93.02%	2.56E-07	J	0.00635		0.000131	6350	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2-Dichlorobenzene	95-50-1	mg/kg	SO	3	189	1.59%	0.00052	J	0.00066	J	0.000038	0.00019	SS039AA	12/7/2006	0	0.25	500	No	No
1,4-Dichlorobenzene	106-46-7	mg/kg	SO	2	189	1.06%	0.00051	J	0.00057	J	0.000038	0.00021	SS083AA	12/1/2006	0	0.25	0.99	No	No
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	mg/kg	SO	79	80	98.75%	4.79E-07	J	0.021		0.019	21000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	mg/kg	SO	77	80	96.25%	1.51E-07	J	0.0033		0.028	3300	SS058AA	12/5/2006	0	0.25	0.0000044	Yes	Yes[1]
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	mg/kg	SO	54	86	62.79%	4.27E-07	J	0.000266		0.000051	266	SS058AA	12/5/2006	0	0.25	0.000013	Yes	Yes[1]
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	mg/kg	SO	55	86	63.95%	2.38E-07	J	0.000291		0.0000408	291	SS058AA	12/5/2006	0	0.25	0.0000018	Yes	Yes[1]
2,4,5-Trichlorophenol	95-95-4	mg/kg	SO	2	190	1.05%	0.045	J	0.29	J	0.014	0.18	SS082BA	12/7/2006	0.25	0.5	6200	No	No
2,4-Dimethylphenol	105-67-9	mg/kg	SO	15	190	7.89%	0.022	J	0.087	J	0.02	0.25	SS073AA	11/30/2006	0	0.25	1200	No	No
2,4-Dinitrotoluene	121-14-2	mg/kg	SO	1	190	0.53%	0.082	J	0.082	J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	0.43	No	No
2-Methylnaphthalene	91-57-6	mg/kg	SO	147	196	75.00%	0.0027	J	650		0.0016	21	TC	8/24/1995	0	1	210	Yes	Yes
2-Nitroaniline	88-74-4	mg/kg	SO	1	190	0.53%	0.03	J	0.03	J	0.023	0.29	SS067BA & Dup	11/30/2006	0.25	0.5	13	No	No
3-Nitroaniline	99-09-2	mg/kg	SO	1	190	0.53%	0.037	J	0.037	J	0.018	0.23	SS067BA & Dup	11/30/2006	0.25	0.5	8.2	No	No
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	SO	2	190	1.05%	0.028	J	0.06	J	0.0096	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	6.2	No	No
4-Bromophenyl phenyl ether	101-55-3	mg/kg	SO	1	190	0.53%	0.053	J	0.053	J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
4-Chloro-3-methylphenol	59-50-7	mg/kg	SO	1	190	0.53%	0.034	J	0.034	J	0.017	0.22	SS067BA & Dup	11/30/2006	0.25	0.5	800	No	No
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	SO	1	190	0.53%	0.035	J	0.035	J	0.023	0.29	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
4-Methylphenol (m/p-Cresol)	106-44-5	mg/kg	SO	4	190	2.11%	0.029	J	0.058	J	0.027	0.35	SS073AA	11/30/2006	0	0.25	310	No	No
Acenaphthene	83-32-9	mg/kg	SO	84	196	42.86%	0.003	J	430		0.0028	16	NL	8/24/1995	0	0.5	2000	No	No
Acenaphthylene	208-96-8	mg/kg	SO	188	196	95.92%	0.0037	J	18		0.0027	78	SS058BA	12/5/2006	0.25	0.5	2000	No	No
Acetone	67-64-1	mg/kg	SO	54	189	28.57%	0.0033	J	0.66		0.00026	0.006	SS024BA	12/11/2006	0.25	0.5	6800	No	No
Anthracene	120-12-7	mg/kg	SO	195	196	99.49%	0.0011	J	4590		0.00064	3.4	TC	8/24/1995	0	1	17000	No	No
Antimony	7440-36-0	mg/kg	SO	113	190	59.47%	0.37	J	200		0.33	0.51	SS032AA	12/6/2006	0	0.25	37	Yes	Yes
Arsenic	7440-38-2	mg/kg	SO	180	184	97.83%	0.6		3600		0.4	20	SS095AA	12/6/2006	0	0.25	0.16	Yes	Yes
BaP-TE	BAPTE	mg/kg	SO	199	199	100.00%	0.0009948		138.1				SS058BA	12/5/2006	0.25	0.5	0.021	Yes	Yes
Barium	7440-39-3	mg/kg	SO	190	190	100.00%	1.6		180		0.35	0.54	SS011BA	12/5/2006	0.25	0.5	13000	No	No
Benzene	71-43-2	mg/kg	SO	1	189	0.53%	0.0029	J	0.0029	J	0.00004	0.00094	SS082BA	12/7/2006	0.25	0.5	0.17	No	No
Benzo(a)anthracene	56-55-3	mg/kg	SO	194	196	98.98%	0.0029	J	210		0.00052	2.8	TC	8/24/1995	0	1	0.21	Yes	Yes[2]
Benzo(a)pyrene	50-32-8	mg/kg	SO	194	196	98.98%	0.003	J	77		0.0012	6.2	DT	8/24/1995	0	0.5	0.021	Yes	Yes[2]
Benzo(b)fluoranthene	205-99-2	mg/kg	SO	194	196	98.98%	0.0058		260		0.00083	4.5	SS058BA	12/5/2006	0.25	0.5	0.21	Yes	Yes[2]
Benzo(g,h,i)perylene	191-24-2	mg/kg	SO	193	196	98.47%	0.0035	J	63		0.00068	72	SS058BA	12/5/2006	0.25	0.5	5200	No	No
Benzo(k)fluoranthene	207-08-9	mg/kg	SO	194	196	98.98%	0.0049		190		0.00068	3.7	SS058BA	12/5/2006	0.25	0.5	2.1	Yes	Yes[2]
Benzyl butyl phthalate	85-68-7	mg/kg	SO	11	190	5.79%	0.022	J	0.1025	J	0.019	0.24	SS067BA & Dup	11/30/2006	0.25	0.5	91	No	No
Biphenyl	92-52-4	mg/kg	SO	1	190	0.53%	3	J	3	J	0.16	2	SS082BA	12/7/2006	0.25	0.5	3400	No	No
Bis(2-chloroethyl)ether	111-44-4	mg/kg	SO	1	190	0.53%	1.3		1.3		0.016	0.2	SS054AA & Dup	12/1/2006	0	0.25	0.05	Yes	No
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	SO	73	190	38.42%	0.02	J	0.78		0.017	0.22	SS051AA	12/4/2006	0	0.25	12	No	No
Cadmium	7440-43-9	mg/kg	SO	38	190	20.00%	0.3	J	1.9		0.28	0.43	SS040AA	12/1/2006	0	0.25	81	No	No
Carbazole	86-74-8	mg/kg	SO	169	190	88.95%	0.019	J	24		0.017	0.22	SS082BA	12/7/2006	0.25	0.5	24	No	No
Chloroform	67-66-3	mg/kg	SO	2	189	1.06%	0.00057	J	0.002	J	0.000048	0.00082	SS008AA	12/5/2006	0	0.25	0.06	No	No
Chromium	7440-47-3	mg/kg	SO	190	190	100.00%	1.7		3700		0.09	2.1	SS095AA	12/6/2006	0	0.25	47	Yes	Yes
Chrysene	218-01-9	mg/kg	SO	194	196	98.98%	0.0035	J	250		0.0005	2.7	TC	8/24/1995	0	1	21	Yes	Yes[2]
Copper	7440-50-8	mg/kg	SO	190	190	100.00%	0.87	J	2200		0.29	6.7	SS095AA	12/6/2006	0	0.25	4100	No	No
Cyclohexane	110-82-7	mg/kg	SO	2	189	1.06%	0.00063	J	0.00069	J	0.000054	0.00092	SS003BA	12/8/2006	0.25	0.5	3000	No	No
Dibenzo(a,h)anthracene	53-70-3	mg/kg	SO	193	196	98.47%	0.00091	J	26		0.00053	78	SS058BA	12/5/2006	0.25	0.5	0.021	Yes	Yes[2]
Dibenzofuran	132-64-9	mg/kg	SO	153	190	80.53%	0.014	J	46		0.014	0.18	SS082BA	12/7/2006	0.25	0.5	630	No	No
Dichloromethane	75-09-2	mg/kg	SO	2	189	1.06%	0.0053	J	0.0085	J	0.00006	0.00094	SS020BA	12/12/2006	0.25	0.5	2.6	No	No
Diethyl phthalate	84-66-2	mg/kg	SO	1	190	0.53%	0.064	J	0.064	J	0.013	0.16	SS067BA & Dup	11/30/2006	0.25	0.5	49000	No	No
Dimethyl phthalate	131-11-3	mg/kg	SO	1	190	0.53%	0.036	J	0.036	J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
di-n-Butyl-phthalate	84-74-2	mg/kg	SO	1	190	0.53%	0.19	J	0.19	J	0.063	0.81	SS067BA & Dup	11/30/2006	0.25	0.5	6200	No	No
di-n-Octyl-phthalate	117-84-0	mg/kg	SO	4	190	2.11%	0.02	J	0.18	J	0.016	0.2	SS042AA	12/1/2006	0	0.25	3900	No	No
Ethylbenzene	100-41-4	mg/kg	SO	1	189	0.53%	0.02	J	0.02	J	0.00003	0.0011	SS082BA	12/7/2006	0.25	0.5	2.9	No	No
Fluoranthene	206-44-0	mg/kg	SO	195	196	99.49%	0.0047		980		0.00062	3.3	TC	8/24/1995	0	1	2200	No	No
Fluorene	86-73-7	mg/kg	SO	133	196	67.86%	0.00435	J	450		0.0016	8.4	NL	8/24/1995	0	0.5	2200	No	No
Hexachlorobenzene	118-74-1	mg/kg	SO	1	190	0.53%	0.078	J	0.078	J	0.0085	0.11	SS067BA & Dup	11/30/2006	0.25	0.5	0.11	No	No
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	SO	193	196	98.47%	0.0038		110		0.00091	72	SS058BA	12/5/2006	0.25	0.5	0.21	Yes	Yes[2]
Lead	7439-92-1	mg/kg	SO	190	190	100.00%	1.85		2200		0.13	1.3	SS032AA	12/6/2006	0	0.25	80	Yes	Yes
m,p-Xylenes	136777-61-2	mg/kg	SO	1	189	0.53%	0.026	J	0.026	J	0.000074	0.0021	SS082BA	12/7/2006	0.25	0.5	70	No	No
Mercury	7439-97-6	mg/kg	SO	190	190	100.00%	0.016	J	3.2		0.0041	0.052	SS095AA	12/6/2006	0	0.25	1.7	Yes	Yes

TABLE 4A
COPC SCREENING FOR 0 TO 6 INCH SOIL
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Constituent Name	CAS No	Units	Sample Type	Number Detected	Number Analyzed	Frequency of Detect	Minimum Detect & Qualifier		Maximum Detect & Qualifier		Minimum Reporting Limit	Maximum Reporting Limit	Sample ID with Maximum Conc.	Sample Date	Start Depth	End Depth	Screening Level (mg/kg)	Is Max > Screening Level? (yes/no)	Is Compound COPC? (yes/no)
Methyl acetate	79-20-9	mg/kg	SO	1	189	0.53%	0.0021	J	0.0021	J	0.00011	0.00046	SS002AA & Dup	12/5/2006	0	0.25	3800	No	No
Methyl ethyl ketone	78-93-3	mg/kg	SO	6	189	3.17%	0.0019	J	0.022		0.00031	0.0027	SS082BA	12/7/2006	0.25	0.5	11000	No	No
Methylbenzene	108-88-3	mg/kg	SO	13	189	6.88%	0.00051	J	0.013	J	0.000031	0.0011	SS082BA	12/7/2006	0.25	0.5	4600	No	No
Methylcylohexane	108-87-2	mg/kg	SO	6	189	3.17%	0.000085	J	0.003	J	0.000052	0.0011	SS082BA	12/7/2006	0.25	0.5	NA	NA	No
Naphthalene	91-20-3	mg/kg	SO	163	196	83.16%	0.0086	J	250		0.00053	78	NL	8/24/1995	0	0.5	2	Yes	Yes
n-Nitrosodiphenylamine	86-30-6	mg/kg	SO	1	190	0.53%	0.086	J	0.086	J	0.012	0.15	SS067BA & Dup	11/30/2006	0.25	0.5	35	No	No
Octachlorodibenzofuran	39001-02-0	mg/kg	SO	85	86	98.84%	4.848E-05		2.46		0.000561	2460000	SS058AA	12/5/2006	0	0.25	0.0044	Yes	Yes(1)
Octachlorodibenzo-p-dioxin	3268-87-9	mg/kg	SO	86	86	100.00%	0.0007342		31	J	0.057	31000000	SS058AA	12/5/2006	0	0.25	0.0061	Yes	Yes(1)
o-Xylene	95-47-6	mg/kg	SO	1	189	0.53%	0.014	J	0.014	J	0.000029	0.00096	SS082BA	12/7/2006	0.25	0.5	70	No	No
Pentachlorophenol	87-86-5	mg/kg	SO	175	194	90.21%	0.003		630	J	0.00073	78	SS058BA	12/5/2006	0.25	0.5	0.9	Yes	Yes
Phenanthrene	85-01-8	mg/kg	SO	186	196	94.90%	0.0043	J	830		0.0035	19	NL	8/24/1995	0	0.5	3600	No	No
p-Nitroaniline	100-01-6	mg/kg	SO	3	190	1.58%	0.034	J	0.07	J	0.013	0.16	SS067BA & Dup	11/30/2006	0.25	0.5	8.2	No	No
Pyrene	129-00-0	mg/kg	SO	196	196	100.00%	0.00057	J	610		0.00054	2.9	TC	8/24/1995	0	1	1700	No	No
Selenium	7782-49-2	mg/kg	SO	7	190	3.68%	0.93	J	2.1		0.81	1.3	SS064AA	12/8/2006	0	0.25	510	No	No
Silver	7440-22-4	mg/kg	SO	1	190	0.53%	0.61		0.61		0.37	0.57	SS095AA	12/6/2006	0	0.25	510	No	No
Styrene (monomer)	100-42-5	mg/kg	SO	1	189	0.53%	0.0044	J	0.0044	J	0.000027	0.0011	SS082BA	12/7/2006	0.25	0.5	2300	No	No
TCDD-TEQ	TCDD-TEQ	mg/kg	SO	96	96	100.00%	2.441E-06		0.0788165				SS058AA	12/5/2006	0	0.25	0.0000018	Yes	Yes
Tetrachloroethylene	127-18-4	mg/kg	SO	1	189	0.53%	0.00071	J	0.00071	J	0.00004	0.00096	SS073AA	11/30/2006	0	0.25	0.27	No	No
Vanadium (fume or dust)	7440-62-2	mg/kg	SO	159	190	83.68%	0.97	J	34		0.87	1.3	SS062BA	12/8/2006	0.25	0.5	720	No	No

(1) Compound included as part of TCDD-TEQ.
(2) Compound included as part of BaP-TE.
SO - soil
J - concentration estimated.
NA - not applicable

TABLE 4B
COPC SCREENING FOR 0 TO 6 FOOT SOIL
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Constituent Name	CAS No	Units	Sample Type	Number Detected	Number Analyzed	Frequency of Detect	Minimum Detect & Qualifier	Maximum Detect & Qualifier	Minimum Reporting Limit	Maximum Reporting Limit	Sample ID with Maximum Conc.	Sample Date	Start Depth	End Depth	Screening Level (mg/kg)	Is Max > Screening Level? (yes/no)	Is Compound COPC? (yes/no)
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	mg/kg	SO	141	143	98.60%	0.000000898 J	0.522 J	0.0000739	522000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	mg/kg	SO	140	143	97.90%	0.000012833 J	3.42	0.00045	3240000	TP13	8/23/1995	3.5	3.5	NA	NA	Yes[1]
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	mg/kg	SO	131	143	91.61%	0.000000179 J	0.0453	0.000143	45300	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	mg/kg	SO	125	143	87.41%	0.000000171 J	0.0157	0.000272	15700	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	mg/kg	SO	131	143	91.61%	0.000000143 J	0.0244	0.000306	24400	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	mg/kg	SO	119	143	83.22%	0.000000117 J	0.0102 J	0.00017	10200	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	mg/kg	SO	138	143	96.50%	0.000000385 J	0.105	0.000204	105000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	mg/kg	SO	76	143	53.15%	0.000000096 J	0.00425	0.000282	4250	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	mg/kg	SO	136	143	95.10%	0.000000242 J	0.0495	0.000224	49500	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	mg/kg	SO	109	143	76.22%	0.000000037 J	0.00143	0.000092	1430	SS058AA	12/5/2006	0	0.25	0.000044	Yes	Yes[1]
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	mg/kg	SO	123	143	86.01%	0.000000134 J	0.00635	0.000131	6350	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
1,2-Dichlorobenzene	95-50-1	mg/kg	SO	3	276	1.09%	0.00052 J	0.00066 J	0.000038	0.00019	SS039AA	12/7/2006	0	0.25	500	No	No
1,4-Dichlorobenzene	106-46-7	mg/kg	SO	3	276	1.09%	0.00051 J	0.00072 J	0.000038	0.00021	SS094DA	12/11/2006	2	6	0.99	No	No
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	mg/kg	SO	118	132	89.39%	0.000000129 J	0.021	0.017	21000	SS058AA	12/5/2006	0	0.25	NA	NA	Yes[1]
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	mg/kg	SO	111	132	84.09%	0.000000135 J	0.0033	0.011	3300	SS058AA	12/5/2006	0	0.25	0.0000044	Yes	Yes[1]
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	mg/kg	SO	62	142	43.66%	0.000000427 J	0.000266	0.000051	266	SS058AA	12/5/2006	0	0.25	0.000013	Yes	Yes[1]
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	mg/kg	SO	66	142	46.48%	0.000000238 J	0.000291	0.0000408	291	SS058AA	12/5/2006	0	0.25	0.0000018	Yes	Yes[1]
2,4,5-Trichlorophenol	95-95-4	mg/kg	SO	2	280	0.71%	0.045 J	0.29 J	0.014	0.18	SS082BA	12/7/2006	0.25	0.5	6200	No	No
2,4-Dimethylphenol	105-67-9	mg/kg	SO	18	279	6.45%	0.022 J	3.05 J	0.02	0.25	SS100DA & Dup	12/8/2006	2	6	1200	No	No
2,4-Dinitrotoluene	121-14-2	mg/kg	SO	1	279	0.36%	0.082 J	0.082 J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	0.43	No	No
2-Methylnaphthalene	91-57-6	mg/kg	SO	201	294	68.37%	0.0017 J	10000	0.0016	81	TP10	8/22/1995	3.5	3.5	210	Yes	Yes
2-Nitroaniline	88-74-4	mg/kg	SO	1	279	0.36%	0.03 J	0.03 J	0.023	0.29	SS067BA & Dup	11/30/2006	0.25	0.5	13	No	No
3-Nitroaniline	99-09-2	mg/kg	SO	1	279	0.36%	0.037 J	0.037 J	0.018	0.23	SS067BA & Dup	11/30/2006	0.25	0.5	8.2	No	No
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	SO	2	279	0.72%	0.028 J	0.06 J	0.0096	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	6.2	No	No
4-Bromophenyl phenyl ether	101-55-3	mg/kg	SO	1	279	0.36%	0.053 J	0.053 J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
4-Chloro-3-methylphenol	59-50-7	mg/kg	SO	1	279	0.36%	0.034 J	0.034 J	0.017	0.22	SS067BA & Dup	11/30/2006	0.25	0.5	800	No	No
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	SO	1	279	0.36%	0.035 J	0.035 J	0.023	0.29	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
4-Methylphenol (m/p-Cresol)	106-44-5	mg/kg	SO	6	279	2.15%	0.029 J	3.8	0.027	0.35	SS101DA	12/11/2006	2	6	310	No	No
Acenaphthene	83-32-9	mg/kg	SO	137	296	46.28%	0.003 J	9600	0.0028	150	TP10	8/22/1995	3.5	3.5	2000	Yes	Yes
Acenaphthylene	208-96-8	mg/kg	SO	267	300	89.00%	0.0028 J	150 J	0.0027	78	TP10	8/22/1995	3.5	3.5	2000	No	No
Acetone	67-64-1	mg/kg	SO	107	279	38.35%	0.003 J	0.66	0.00026	0.006	SS024BA	12/11/2006	0.25	0.5	6800	No	No
Anthracene	120-12-7	mg/kg	SO	288	300	96.00%	0.00074 J	23000	0.00063	3.4	TP4	8/21/1995	2	2	17000	Yes	Yes
Antimony	7440-36-0	mg/kg	SO	120	280	42.86%	0.37 J	200	0.32	3.5	SS032AA	12/6/2006	0	0.25	37	Yes	Yes
Arsenic	7440-38-2	mg/kg	SO	272	290	93.79%	0.44 J	8100	0.39	20	TP4_5	8/21/1995	5	5	0.16	Yes	Yes
BaP-TE	BAPTE	mg/kg	SO	302	302	100.00%	0.00098165	617.7			TP10	8/22/1995	3.5	3.5	0.021	Yes	Yes
Barium	7440-39-3	mg/kg	SO	281	281	100.00%	1.6	180	0.34	3.7	SS011BA	12/5/2006	0.25	0.5	13000	No	No
Benzene	71-43-2	mg/kg	SO	7	279	2.51%	0.00053 J	0.13	0.00004	0.00094	SS101DA	12/11/2006	2	6	0.17	No	No
Benzo(a)anthracene	56-55-3	mg/kg	SO	289	300	96.33%	0.00073 J	1200	0.00052	2.8	TP10	8/22/1995	3.5	3.5	0.21	Yes	Yes[2]
Benzo(a)pyrene	50-32-8	mg/kg	SO	287	301	95.35%	0.0028 J	400	0.0012	6.2	SS101DA	12/11/2006	2	6	0.021	Yes	Yes[2]
Benzo(b)fluoranthene	205-99-2	mg/kg	SO	293	301	97.34%	0.001 J	730	0.00083	4.5	TP10	8/22/1995	3.5	3.5	0.21	Yes	Yes[2]
Benzo(g,h,i)perylene	191-24-2	mg/kg	SO	288	301	95.68%	0.00099 J	130 J	0.00067	72	TP4	8/21/1995	2	2	5200	No	No
Benzo(k)fluoranthene	207-08-9	mg/kg	SO	292	301	97.01%	0.00078 J	250	0.00067	3.7	TP10	8/22/1995	3.5	3.5	2.1	Yes	Yes[2]
Benzyl butyl phthalate	85-68-7	mg/kg	SO	10	280	3.57%	0.022 J	0.1025 J	0.019	0.24	SS067BA & Dup	11/30/2006	0.25	0.5	91	No	No
Biphenyl	92-52-4	mg/kg	SO	10	279	3.58%	2.4	110	0.16	17	SS101CA	12/11/2006	0.5	2	3400	No	No
Biphenyl	92-52-4	mg/kg	SO	10	279	3.58%	2.4	110	0.16	17	SS101DA	12/11/2006	2	6	3400	No	No
Bis(2-chloroethyl)ether	111-44-4	mg/kg	SO	1	279	0.36%	1.3	1.3	0.016	0.2	SS054AA & Dup	12/1/2006	0	0.25	0.05	Yes	No
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	SO	75	279	26.88%	0.02 J	0.78	0.017	0.22	SS051AA	12/4/2006	0	0.25	12	No	No
Cadmium	7440-43-9	mg/kg	SO	38	281	13.52%	0.3 J	1.9	0.28	3	SS040AA	12/1/2006	0	0.25	81	No	No
Carbazole	86-74-8	mg/kg	SO	195	279	69.89%	0.019 J	150	0.017	2	SS100DA & Dup	12/8/2006	2	6	24	Yes	Yes
Chloroform	67-66-3	mg/kg	SO	2	279	0.72%	0.00057 J	0.002 J	0.000048	0.00082	SS008AA	12/5/2006	0	0.25	0.06	No	No
Chromium	7440-47-3	mg/kg	SO	297	297	100.00%	0.95 J	14000	0.09	2.1	TP4	8/21/1995	5	5	47	Yes	Yes
Chrysene	218-01-9	mg/kg	SO	294	301	97.67%	0.00074 J	1200	0.0005	2.7	TP10	8/22/1995	3.5	3.5	21	Yes	Yes[2]
Copper	7440-50-8	mg/kg	SO	279	292	95.55%	0.33 J	5800	0.29	6.7	TP4	8/21/1995	5	5	4100	Yes	Yes
Cyclohexane	110-82-7	mg/kg	SO	4	280	1.43%	0.00063 J	0.0012 J	0.000054	0.00092	SS101DA	12/11/2006	2	6	3000	No	No
Dibenzo(a,h)anthracene	53-70-3	mg/kg	SO	280	301	93.02%	0.00057 J	29 J	0.00053	78	TP4	8/21/1995	2	2	0.021	Yes	Yes[2]
Dibenzofuran	132-64-9	mg/kg	SO	189	279	67.74%	0.014 J	350	0.014	1.6	SS101CA	12/11/2006	0.5	2	630	No	No
Dichloromethane	75-09-2	mg/kg	SO	5	279	1.79%	0.0053 J	0.0085 J	0.00006	0.00094	SS020BA	12/12/2006	0.25	0.5	2.6	No	No
Diethyl phthalate	84-66-2	mg/kg	SO	1	279	0.36%	0.064 J	0.064 J	0.013	0.16	SS067BA & Dup	11/30/2006	0.25	0.5	49000	No	No
Dimethyl phthalate	131-11-3	mg/kg	SO	1	279	0.36%	0.036 J	0.036 J	0.01	0.13	SS067BA & Dup	11/30/2006	0.25	0.5	NA	NA	No
di-n-Butyl-phthalate	84-74-2	mg/kg	SO	1	279	0.36%	0.19 J	0.19 J	0.063	0.81	SS067BA & Dup	11/30/2006	0.25	0.5	6200	No	No
di-n-Octyl-phthalate	117-84-0	mg/kg	SO	4	279	1.43%	0.02 J	0.18 J	0.016	0.2	SS042AA	12/1/2006	0	0.25	3900	No	No
Ethylbenzene	100-41-4	mg/kg	SO	10	279	3.58%	0.000445	0.083 J	0.000023	0.0011	SS100CA	12/8/2006	0.5	2	2.9	No	No
Fluoranthene	206-44-0	mg/kg	SO	292	301	97.01%	0.0015 J	9800	0.00061	32	TP10	8/22/1995	3.5	3.5	2200	Yes	Yes
Fluorene	86-73-7	mg/kg	SO	187	297	62.96%	0.0019 J	13000	0.0016	81	TP10	8/22/1995	3.5	3.5	2200	Yes	Yes
Hexachlorobenzene	118-74-1	mg/kg	SO	1	279	0.36%	0.078 J	0.078 J	0.0085	0.11	SS067BA & Dup	11/30/2006	0.25	0.5	0.11	No	No
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	SO	288	301	95.68%	0.001 J	220	0.0009	72	SS101DA	12/11/2006	2	6	0.21	Yes	Yes[2]
Isopropylbenzene	98-82-8	mg/kg	SO	1	276	0.36%	0.00074 J	0.00074 J	0.00003	0.0012	SS095DA	12/6/2006	2	6	120	No	No
Lead	7439-92-1	mg/kg	SO	281	281	100.00%	0.88	2200	0.12	1.3	SS032AA	12/6/2006	0	0.25	80	Yes	Yes

TABLE 4B
COPC SCREENING FOR 0 TO 6 FOOT SOIL
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Constituent Name	CAS No	Units	Sample Type	Number Detected	Number Analyzed	Frequency of Detect	Minimum Detect & Qualifier	Maximum Detect & Qualifier	Minimum Reporting Limit	Maximum Reporting Limit	Sample ID with Maximum Conc.	Sample Date	Start Depth	End Depth	Screening Level (mg/kg)	Is Max > Screening Level? (yes/no)	Is Compound COPC? (yes/no)
m,p-Xylenes	136777-61-2	mg/kg	SO	9	279	3.23%	0.00105	0.21 J	0.000058	0.0021	SS100CA	12/8/2006	0.5	2	70	No	No
Mercury	7439-97-6	mg/kg	SO	281	281	100.00%	0.0046 J	3.2	0.0041	0.052	SS095AA	12/6/2006	0	0.25	1.7	Yes	Yes
Methyl acetate	79-20-9	mg/kg	SO	1	279	0.36%	0.0021 J	0.0021 J	0.00011	0.00046	SS002AA & Dup	12/5/2006	0	0.25	3800	No	No
Methyl ethyl ketone	78-93-3	mg/kg	SO	13	279	4.66%	0.0019 J	0.022	0.00031	0.0027	SS082BA	12/7/2006	0.25	0.5	11000	No	No
Methyl isobutyl ketone	108-10-1	mg/kg	SO	2	279	0.72%	0.02 J	0.022 J	0.0004	0.0018	SS101CA	12/11/2006	0.5	2	4400	No	No
Methylbenzene	108-88-3	mg/kg	SO	36	279	12.90%	0.00049 J	0.13 J	0.000024	0.0011	SS100DA & Dup	12/8/2006	2	6	4600	No	No
Methylcylohexane	108-87-2	mg/kg	SO	10	279	3.58%	0.000085 J	0.0088 J	0.000052	0.0011	SS101DA	12/11/2006	2	6	NA	NA	No
Naphthalene	91-20-3	mg/kg	SO	213	301	70.76%	0.0011 J	13000	0.00053	78	TP4, 'TP10	8/22/1995	2, 3.5	2, 3.5	2	Yes	Yes
n-Nitrosodiphenylamine	86-30-6	mg/kg	SO	1	279	0.36%	0.086 J	0.086 J	0.012	0.15	SS067BA & Dup	11/30/2006	0.25	0.5	35	No	No
Octachlorodibenzofuran	39001-02-0	mg/kg	SO	141	143	98.60%	0.000002716 J	2.46	0.000561	2460000	SS058AA	12/5/2006	0	0.25	0.0044	Yes	Yes(1)
Octachlorodibenzo-p-dioxin	3268-87-9	mg/kg	SO	142	143	99.30%	0.000043117 J	31 J	0.000939	31000000	SS058AA	12/5/2006	0	0.25	0.0061	Yes	Yes(1)
o-Xylene	95-47-6	mg/kg	SO	10	279	3.58%	0.000695	0.13 J	0.000023	0.00096	SS100CA	12/8/2006	0.5	2	70	No	No
Pentachlorophenol	87-86-5	mg/kg	SO	248	297	83.50%	0.0011 J	630 J	0.00072	550	SS058BA	12/5/2006	0.25	0.5	0.9	Yes	Yes
Phenanthrene	85-01-8	mg/kg	SO	266	299	88.96%	0.0036 J	26000	0.0034	180	TP10	8/22/1995	3.5	3.5	3600	Yes	Yes
p-Nitroaniline	100-01-6	mg/kg	SO	3	279	1.08%	0.034 J	0.07 J	0.013	0.16	SS067BA & Dup	11/30/2006	0.25	0.5	8.2	No	No
Pyrene	129-00-0	mg/kg	SO	297	303	98.02%	0.00057 J	6300	0.00054	28	TP10	8/22/1995	3.5	3.5	1700	Yes	Yes
Selenium	7782-49-2	mg/kg	SO	8	281	2.85%	0.93 J	2.1	0.8	8.7	SS064AA	12/8/2006	0	0.25	510	No	No
Silver	7440-22-4	mg/kg	SO	1	280	0.36%	0.61	0.61	0.36	3.9	SS095AA	12/6/2006	0	0.25	510	No	No
Styrene (monomer)	100-42-5	mg/kg	SO	10	279	3.58%	0.00073 J	0.215 J	0.000027	0.0011	SS100DA & Dup	12/8/2006	2	6	2300	No	No
TCDD-TEQ	TCDD-TEQ	mg/kg	SO	154	154	100.00%	2.8031E-07	0.0788165			SS058AA	12/5/2006	0	0.25	0.0000018	Yes	Yes
Tetrachloroethylene	127-18-4	mg/kg	SO	1	279	0.36%	0.00071 J	0.00071 J	0.00004	0.00096	SS073AA	11/30/2006	0	0.25	0.27	No	No
Vanadium (fume or dust)	7440-62-2	mg/kg	SO	229	280	81.79%	0.97 J	34	0.86	9.3	SS062BA	12/8/2006	0.25	0.5	720	No	No

(1) Compound included as part of TCDD-TEQ.
(2) Compound included as part of BaP-TE.
SO - soil
J - concentration estimated.
NA - not applicable

TABLE 4C
COPC SCREENING FOR SEDIMENT
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Constituent Name	CAS No	Units	Sample Type	Number Detected	Number Analyzed	Frequency of Detect	Minimum Detect & Qualifier		Maximum Detect & Qualifier		Minimum Reporting Limit	Maximum Reporting Limit	Sample ID with Maximum Conc.	Sample Date	Start Depth	End Depth	Screening Level (mg/kg)	Is Max > Screening Level? (yes/no)	Is Compound COPC? (yes/no)
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	mg/kg	SE	11	11	100.00%	0.000385429		0.029		0.000000104	0.029	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	mg/kg	SE	11	11	100.00%	0.002250305	J	0.191		0.00000181	0.191	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	mg/kg	SE	11	11	100.00%	2.32305E-05		0.00179		0.000000593	0.00179	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	mg/kg	SE	11	11	100.00%	1.16355E-05		0.000732		0.000000095	0.000732	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	mg/kg	SE	11	11	100.00%	0.000016458		0.00179		0.000000044	0.00179	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	mg/kg	SE	11	11	100.00%	8.4585E-06		0.00058		0.000000117	0.00058	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	mg/kg	SE	11	11	100.00%	6.35395E-05		0.00536		0.000000051	0.00536	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	mg/kg	SE	8	11	72.73%	7.535E-07	J	0.000174		0.000000063	0.000174	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	mg/kg	SE	11	11	100.00%	0.000039266		0.00306		0.000000048	0.00306	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	mg/kg	SE	11	11	100.00%	1.9685E-06	J	0.0000681		0.000000037	0.0000681	SD004BA	12/12/2006	0.5	2	0.000044	Yes	Yes(1)
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	mg/kg	SE	11	11	100.00%	5.8215E-06		0.000491		0.000000035	0.000491	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	mg/kg	SE	11	11	100.00%	0.000006875		0.00115		0.000000074	0.00115	SD004BA	12/12/2006	0.5	2	NA	NA	Yes(1)
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	mg/kg	SE	11	11	100.00%	1.9065E-06	J	0.000208		0.000000047	0.000208	SD004BA	12/12/2006	0.5	2	0.0000044	Yes	Yes(1)
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	mg/kg	SE	9	11	81.82%	9.225E-07	J	0.0000443		0.000000433	0.0000443	SD004BA	12/12/2006	0.5	2	0.000013	Yes	Yes(1)
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	mg/kg	SE	11	11	100.00%	0.000000971	J	0.0000328		0.000000021	0.0000328	SD004BA	12/12/2006	0.5	2	0.0000018	Yes	Yes(1)
Acenaphthylene	208-96-8	mg/kg	SE	9	11	81.82%	0.11		1.6		0.029	0.63	SD004BA	12/12/2006	0.5	2	2000	No	No
Acetone	67-64-1	mg/kg	SE	11	11	100.00%	0.0034	J	0.14	J	0.0027	0.0073	SD003AA	12/12/2006	0	0.5	6800	No	No
Anthracene	120-12-7	mg/kg	SE	11	11	100.00%	0.17		2.4		0.0067	0.15	SD005AA	12/12/2006	0	0.5	17000	No	No
Antimony	7440-36-0	mg/kg	SE	10	11	90.91%	0.43	J	8.6	J	0.34	0.8	SD003AA	12/12/2006	0	0.5	37	No	No
Arsenic	7440-38-2	mg/kg	SE	11	11	100.00%	1.9		390		0.41	0.96	SD005AA	12/12/2006	0	0.5	0.16	Yes	Yes
BaP-TE	50-32-8	mg/kg	SE	11	11	100.00%	0.54833		18.682				SD002AA	12/12/2006	0	0.5	0.021	Yes	Yes
Barium	7440-39-3	mg/kg	SE	11	11	100.00%	6.5		86		0.36	0.84	SD004BA	12/12/2006	0.5	2	13000	No	No
Benzo(a)anthracene	56-55-3	mg/kg	SE	11	11	100.00%	0.18		7.7		0.0055	0.12	SD002AA	12/12/2006	0	0.5	0.21	Yes	Yes(2)
Benzo(a)pyrene	50-32-8	mg/kg	SE	11	11	100.00%	0.32		12		0.012	0.27	SD002AA	12/12/2006	0	0.5	0.021	Yes	Yes(2)
Benzo(b)fluoranthene	205-99-2	mg/kg	SE	11	11	100.00%	0.62		17		0.0088	0.2	SD002AA	12/12/2006	0	0.5	0.21	Yes	Yes(2)
Benzo(g,h,i)perylene	191-24-2	mg/kg	SE	11	11	100.00%	0.36		11		0.0071	0.16	SD002AA	12/12/2006	0	0.5	5200	No	No
Benzo(k)fluoranthene	207-08-9	mg/kg	SE	11	11	100.00%	0.3		10		0.0071	0.16	SD002AA	12/12/2006	0	0.5	2.1	Yes	Yes(2)
Benzyl butyl phthalate	85-68-7	mg/kg	SE	4	11	36.36%	0.057	J	0.57	J	0.019	0.43	SD002AA	12/12/2006	0	0.5	91	No	No
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	SE	8	11	72.73%	0.05	J	2.8	J	0.017	0.39	SD003AA	12/12/2006	0	0.5	12	No	No
Cadmium	7440-43-9	mg/kg	SE	7	11	63.64%	0.35	J	3.1		0.29	0.68	SD003AA	12/12/2006	0	0.5	81	No	No
Carbazole	86-74-8	mg/kg	SE	11	11	100.00%	0.048	J	1.1		0.017	0.39	SD002AA	12/12/2006	0	0.5	24	No	No
Chromium	7440-47-3	mg/kg	SE	11	11	100.00%	9.15		710		0.09	0.22	SD004BA	12/12/2006	0.5	2	47	Yes	Yes
Chrysene	218-01-9	mg/kg	SE	11	11	100.00%	0.33		12		0.0053	0.12	SD002AA	12/12/2006	0	0.5	21	No	Yes(2)
Copper	7440-50-8	mg/kg	SE	11	11	100.00%	14		320		0.3	0.7	SD004BA	12/12/2006	0.5	2	4100	No	No
Dibenzo(a,h)anthracene	53-70-3	mg/kg	SE	11	11	100.00%	0.11		3.1		0.0056	0.13	SD002AA	12/12/2006	0	0.5	0.021	Yes	Yes(2)
Dibenzofuran	132-64-9	mg/kg	SE	9	11	81.82%	0.016	J	0.28	, J	0.014	0.31	SD005AA, SD004BA	12/12/2006	0, 0.5	0.5, 2	630	No	No
di-n-Butyl-phthalate	84-74-2	mg/kg	SE	1	11	9.09%	0.57		0.57		0.064	1.5	SD002AA	12/12/2006	0	0.5	6200	No	No
Fluoranthene	206-44-0	mg/kg	SE	11	11	100.00%	0.35		17		0.0065	0.15	SD002AA	12/12/2006	0	0.5	2200	No	No
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	SE	11	11	100.00%	0.35		10		0.0095	0.21	SD002AA	12/12/2006	0	0.5	0.21	Yes	Yes(2)
Lead	7439-92-1	mg/kg	SE	11	11	100.00%	6.5		450		0.13	0.3	SD004BA	12/12/2006	0.5	2	80	Yes	Yes
Mercury	7439-97-6	mg/kg	SE	11	11	100.00%	0.029		2	J	0.0044	0.033	SD004BA	12/12/2006	0.5	2	1.7	Yes	Yes
Methyl ethyl ketone	78-93-3	mg/kg	SE	1	11	9.09%	0.011	J	0.011	J	0.0012	0.0033	SD003AA	12/12/2006	0	0.5	11000	No	No
Methylbenzene	108-88-3	mg/kg	SE	5	11	45.45%	0.000875	J	0.0035	J	0.00044	0.0013	SD002AA, SD003AA	12/12/2006	0, 0	0.5, 0.5	4600	No	No
Octachlorodibenzofuran	39001-02-0	mg/kg	SE	11	11	100.00%	0.001903545		0.108		0.000000207	0.108	SD004BA	12/12/2006	0.5	2	0.0044	Yes	Yes(1)
Octachlorodibenzo-p-dioxin	3268-87-9	mg/kg	SE	11	11	100.00%	0.024539524	J	1.58		0.000000389	1.58	SD004BA	12/12/2006	0.5	2	0.0061	Yes	Yes(1)
Pentachlorophenol	87-86-5	mg/kg	SE	11	11	100.00%	0.11	J	1.8	J	0.0077	0.17	SD004BA	12/12/2006	0.5	2	0.9	Yes	Yes
Phenanthrene	85-01-8	mg/kg	SE	11	11	100.00%	0.11		6.3		0.036	0.79	SD002AA	12/12/2006	0	0.5	3600	No	No
Pyrene	129-00-0	mg/kg	SE	11	11	100.00%	0.41		16		0.0057	0.13	SD002AA	12/12/2006	0	0.5	1700	No	No
Selenium	7782-49-2	mg/kg	SE	3	11	27.27%	1.5		3.1		0.85	2	SD003AA	12/12/2006	0	0.5	510	No	No
TCDD-TEQ	TCDD-TEQ	mg/kg	SE	11	11	100.00%	5.67369E-05		0.004601573				SD004BA	12/12/2006	0.5	2	0.0000018	Yes	Yes
Vanadium (fume or dust)	7440-62-2	mg/kg	SE	11	11	100.00%	1.3	J	28		0.91	2.1	SD003AA	12/12/2006	0	0.5	720	No	No

(1) Compound included as part of TCDD-TEQ.
(2) Compound included as part of BaP-TE.
SE - sediment
J - concentration estimated.
NA - not applicable

TABLE 5
COPCS BY MEDIA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Compound	COPC for 0 to 6 Inch Soil	COPC for 0 to 6 Foot Soil	COPC for Sediment
91-57-6	2-Methylnaphthalene	X	X	
83-32-9	Acenaphthene		X	
120-12-7	Anthracene		X	
7440-36-0	Antimony	X	X	
7440-38-2	Arsenic	X	X	X
50-32-8	BAP-TE	X	X	X
86-74-8	Carbazole		X	
7440-47-3	Chromium	X	X	X
7440-50-8	Copper		X	
206-44-0	Fluoranthene		X	
86-73-7	Fluorene		X	
7439-92-1	Lead	X	X	X
7439-97-6	Mercury	X	X	X
91-20-3	Naphthalene	X	X	
87-86-5	Pentachlorophenol	X	X	X
85-01-8	Phenanthrene		X	
129-00-0	Pyrene		X	
1746-01-6	TCDD-TEQ	X	X	X

TABLE 6
EPCS BY EXPOSURE AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituent	Boiler Area 0 to 6 Inch Soil (mg/kg)	Eastern Active Area 0 to 6 Inch Soil (mg/kg)	Northeast Grassed Area 0 to 6 Inch Soil (mg/kg)	Northwest Grassed Area 0 to 6 Inch Soil (mg/kg)	Process Area 0 to 6 Inch Soil (mg/kg)	Southwest Wooded Area 0 to 6 Inch Soil (mg/kg)	Western Active Area 0 to 6 Inch Soil (mg/kg)	Entire Site 0 to 6 Foot Soil (mg/kg)	Drainage Ditch 0 to 6 Inch Sediment (mg/kg)
91-57-6	2-Methylnaphthalene	1.47E+02	3.44E+00	2.73E-01	8.38E-01	1.18E+02	8.14E-01	3.94E+00	1.16E+02	NA
83-32-9	Acenaphthene	NA	NA	NA	NA	NA	NA	NA	6.26E+01	NA
120-12-7	Anthracene	NA	NA	NA	NA	NA	NA	NA	7.75E+02	NA
7440-36-0	Antimony	1.20E+00	1.60E+00	2.36E+00	9.01E+00	3.02E+00	2.32E+01	9.82E+00	1.10E+00	NA
7440-38-2	Arsenic	6.03E+01	1.17E+02	2.80E+02	4.94E+01	1.77E+02	3.65E+02	5.29E+01	3.74E+01	2.09E+02
50-32-8	BAP-TE	7.11E+02	1.32E+01	1.44E+01	3.51E+00	2.88E+01	8.39E+00	1.10E+01	3.19E+01	1.10E+01
86-74-8	Carbazole	3.00E+00	5.60E-01	1.44E+00	3.56E-01	1.10E+00	3.92E-01	3.90E-01	1.97E+00	NA
7440-47-3	Chromium	7.61E+01	1.76E+02	3.98E+02	1.51E+01	2.77E+02	5.12E+02	5.88E+01	4.82E+01	3.79E+02
7440-50-8	Copper	NA	NA	NA	NA	NA	NA	NA	4.30E+01	NA
206-44-0	Fluoranthene	NA	NA	NA	NA	NA	NA	NA	2.21E+02	NA
86-73-7	Fluorene	NA	NA	NA	NA	NA	NA	NA	7.06E+01	NA
7439-92-1	Lead	1.44E+02	4.33E+01	4.62E+01	1.07E+02	8.35E+01	7.70E+01	1.21E+02	9.43E+01	2.26E+02
7439-97-6	Mercury	7.05E-01	4.86E-01	1.52E+00	3.96E-01	7.36E-01	5.59E-01	4.42E-01	3.95E-01	8.55E-01
91-20-3	Naphthalene	2.74E+01	3.73E+00	3.78E-01	1.94E-01	2.03E+01	2.40E-01	1.40E+01	2.13E+01	NA
87-86-5	Pentachlorophenol	6.51E+01	4.73E+00	5.55E+00	1.07E+00	7.91E+01	2.74E+00	1.40E+01	6.13E+01	1.09E+00
85-01-8	Phenanthrene	NA	NA	NA	NA	NA	NA	NA	1.80E+02	NA
129-00-0	Pyrene	NA	NA	NA	NA	NA	NA	NA	1.21E+02	NA
1746-01-6	TCDD-TEQ	1.42E-02	4.92E-03	1.13E-02	1.05E-03	2.33E-02	1.11E-03	4.13E-03	1.35E-02	1.40E-03

NA - Not a COPC in that media.

TABLE 7A
EXPOSURE PARAMETERS FOR THE ON-SITE KI WORKER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	ON-SITE WORKER IN THE PROCESS AREA	RATIONALE/ REFERENCE	ON-SITE WORKER IN THE SW WOODED AREA	RATIONALE/ REFERENCE	ON-SITE WORKER IN THE WESTERN ACTIVE AREA	RATIONALE/ REFERENCE
GENERAL INFO:							
Age	years	18-65		18-65		18-65	
Bodyweight	kg	78.1	EPA (1997) - men age 18<75	78.1	EPA (1997) - men age 18<75	78.1	EPA (1997) - men age 18<75
Averaging Time - Noncarcinogenic	days	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	1	All soil exposure assumed to come from site.	0.25	Exposed for 2 hr out of the 8 hr work day.	1	All soil exposure assumed to come from site.
INGESTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	50	EPA (1997)	50	EPA (1997)	50	EPA (1997)
Exposure Frequency	days/years	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
DERMAL ABSORPTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.168	EPA (1997). Area-weighted mean of values for forearms and face of Utility Workers and Construction Workers.	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.
Skin Surface Area Available for Contact	cm2/day	1,533	Approximate area of forearms and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008
Exposure Frequency	days/years	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)
Inhalation Rate	m3/hour	2.18	95th percentile of all activities, Linn et al. (1993)	2.18	95th percentile of all activities, Linn et al. (1993)	2.18	95th percentile of all activities, Linn et al. (1993)
Exposure Frequency	days/year	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
Exposure Time	hours/day	8	Standard work day.	2	Exposed for 2 hr out of the 8 hr work day.	8	Standard work day.

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7A
EXPOSURE PARAMETERS FOR THE ON-SITE KI WORKER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	ON-SITE WORKER IN THE NW GRASSED AREA	RATIONALE/ REFERENCE	ON-SITE WORKER IN THE BOILER AREA	RATIONALE/ REFERENCE	ON-SITE WORKER IN THE EASTERN ACTIVE AREA	RATIONALE/ REFERENCE
GENERAL INFO:							
Age	years	18-65		18-65		18-65	
Bodyweight	kg	78.1	EPA (1997) - men age 18<75	78.1	EPA (1997) - men age 18<75	78.1	EPA (1997) - men age 18<75
Averaging Time - Noncarcinogenic	days	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	0.25	2 hrs out of the 8 hr work day	1	All soil exposure assumed to come from site.	1	All soil exposure assumed to come from site.
INGESTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	50	EPA (1997)	50	EPA (1997)	50	EPA (1997)
Exposure Frequency	days/years	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
DERMAL ABSORPTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.
Skin Surface Area Available for Contact	cm2/day	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008
Exposure Frequency	days/years	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)
Inhalation Rate	m3/hour	2.18	95th percentile of all activities, Linn et al. (1993)	2.18	95th percentile of all activities, Linn et al. (1993)	2.18	95th percentile of all activities, Linn et al. (1993)
Exposure Frequency	days/year	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	250	5 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
Exposure Time	hours/day	2	Exposed for 2 hr out of the 8 hr work day.	8	Standard work day.	8	Standard work day.

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7A
EXPOSURE PARAMETERS FOR THE ON-SITE KI WORKER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	ON-SITE WORKER IN THE NE GRASSED AREA	RATIONALE/ REFERENCE	ON-SITE WORKER IN THE DRAINAGE DITCH	RATIONALE/ REFERENCE
GENERAL INFO:					
Age	years	18-65		18-65	
Bodyweight	kg	78.1	EPA (1997) - men age 18<75	78.1	EPA (1997) - men age 18<75
Averaging Time - Noncarcinogenic	days	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.	8,724	23.9 years of work; 95th percentile of KI Worker Tenure data.
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	0.25	2 hrs out of the 8 hr work day	1	All soil exposure assumed to come from site.
INGESTION OF SOIL/SEDIMENT:					
Conversion Factor	kg/mg	1E-06		1E-06	
Ingestion Rate	mg/day	50	EPA (1997)	50	EPA (1997)
Exposure Frequency	days/years	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	1	Conversation with Gainesville Plant Manager on 9/2/2008.
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
DERMAL ABSORPTION OF SOIL/SEDIMENT:					
Conversion Factor	kg/mg	1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.	0.206	EPA (1997). Area-weighted mean of values for forearms, hands, and face of Utility Workers and Construction Workers.
Skin Surface Area Available for Contact	cm2/day	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008	2,373	Approximate area of forearms, hands, and face (EPA 1997); conversation with Gainesville Plant Manager on 9/2/2008
Exposure Frequency	days/years	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	1	Conversation with Gainesville Plant Manager on 9/2/2008.
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	23.9	95th percentile of KI worker job tenures.
INHALATION OF FUGITIVE DUST AND VAPORS:					
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	NA	
Inhalation Rate	m3/hour	2.18	95th percentile of all activities, Linn et al. (1993)	NA	
Exposure Frequency	days/year	100	2 days/week, 50 weeks/year, accounting for ten holidays per year; conversation with Gainesville Plant Manager on 9/2/2008	NA	
Exposure Duration	years	23.9	95th percentile of KI worker job tenures.	NA	
Exposure Time	hours/day	2	Exposed for 2 hr out of the 8 hr work day.	NA	

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7B
EXPOSURE PARAMETERS FOR THE TEENAGE TRESPASSER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	TRESPASSER IN THE PROCESS AREA	RATIONALE/ REFERENCE	TRESPASSER IN THE SW WOODED AREA	RATIONALE/ REFERENCE	TRESPASSER IN THE WESTERN ACTIVE AREA	RATIONALE/ REFERENCE
GENERAL INFO:							
Age	years	7-17		7-17		7-17	
Bodyweight	kg	45	EPA (1997)	45	EPA (1997)	45	EPA (1997)
Averaging Time - Noncarcinogenic	days	3,650	10 years exposure	3,650	10 years exposure	3,650	10 years exposure
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	0.25	Professonal judgement.	0.25	Professonal judgement.	0.25	Professonal judgement.
INGESTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	100	EPA (1997)	100	EPA (1997)	100	EPA (1997)
Exposure Frequency	days/years	4	One time every three months	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
DERMAL ABSORPTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.
Skin Surface Area Available for Contact	cm2/day	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range
Exposure Frequency	days/years	4	One time every three months	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)
Inhalation Rate	m3/hour	1.6	EPA (1997)	1.6	EPA (1997)	1.6	EPA (1997)
Exposure Frequency	days/year	4	One time every three months	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
Exposure Time	hours/day	2	Professonal judgement.	2	Professonal judgement.	2	Professonal judgement.

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7B
EXPOSURE PARAMETERS FOR THE TEENAGE TRESPASSER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	TRESPASSER IN THE NW GRASSED AREA	RATIONALE/ REFERENCE	TRESPASSER IN THE BOILER AREA	RATIONALE/ REFERENCE	TRESPASSER IN THE EASTERN ACTIVE AREA	RATIONALE/ REFERENCE
GENERAL INFO:							
Age	years	7-17		7-17		7-17	
Bodyweight	kg	45	EPA (1997)	45	EPA (1997)	45	EPA (1997)
Averaging Time - Noncarcinogenic	days	3,650	10 years exposure	3,650	10 years exposure	3,650	10 years exposure
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	0.25	Professonal judgement.	0.25	Professonal judgement.	0.25	Professonal judgement.
INGESTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	100	EPA (1997)	100	EPA (1997)	100	EPA (1997)
Exposure Frequency	days/years	12	One time per month	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
DERMAL ABSORPTION OF SOIL/SEDIMENT:							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.
Skin Surface Area Available for Contact	cm2/day	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range
Exposure Frequency	days/years	12	One time per month	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	0.0394	95th percentile of urban RPM from nearby station (city identified sources)
Inhalation Rate	m3/hour	1.6	EPA (1997)	1.6	EPA (1997)	1.6	EPA (1997)
Exposure Frequency	days/year	12	One time per month	12	One time per month	12	One time per month
Exposure Duration	years	10		10		10	
Exposure Time	hours/day	2	Professonal judgement.	2	Professonal judgement.	2	Professonal judgement.

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7B
EXPOSURE PARAMETERS FOR THE TEENAGE TRESPASSER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	TRESPASSER IN THE NE GRASSED AREA	RATIONALE/ REFERENCE	TRESPASSER IN THE DRAINAGE DITCH	RATIONALE/ REFERENCE
GENERAL INFO:					
Age	years	7-17		7-17	
Bodyweight	kg	45	EPA (1997)	45	EPA (1997)
Averaging Time - Noncarcinogenic	days	3,650	10 years exposure	3,650	10 years exposure
Averaging Time - Carcinogenic	days	25,550	70 years lifetime	25,550	70 years lifetime
Fraction of exposure from Site	unitless	0.25	Professonal judgement.	0.25	Professonal judgement.
INGESTION OF SOIL/SEDIMENT:					
Conversion Factor	kg/mg	1E-06		1E-06	
Ingestion Rate	mg/day	100	EPA (1997)	100	EPA (1997)
Exposure Frequency	days/years	12	One time per month	12	One time per month
Exposure Duration	years	10		10	
DERMAL ABSORPTION OF SOIL/SEDIMENT:					
Conversion Factor	kg/mg	1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm2	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.145	EPA (1997). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.
Skin Surface Area Available for Contact	cm2/day	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	5,048	EPA (1997). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range
Exposure Frequency	days/years	12	One time per month	12	One time per month
Exposure Duration	years	10		10	
INHALATION OF FUGITIVE DUST AND VAPORS:					
Respirable Particulate Concentration	mg/m3	0.0394	95th percentile of urban RPM from nearby station (city identified sources)	NA	
Inhalation Rate	m3/hour	1.6	EPA (1997)	NA	
Exposure Frequency	days/year	12	One time per month	NA	
Exposure Duration	years	10		NA	
Exposure Time	hours/day	2	Professonal judgement.	NA	

References:

EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.

Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

Linn et al (1993). Activity Patterns in Ozone-Exposed Construction Workers. J. Occ. Med. Tox. 2(1): 1-14.

TABLE 7C
EXPOSURE PARAMETERS FOR THE CONSTRUCTION WORKER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	CONSTRUCTION WORKER	RATIONALE/ REFERENCE
GENERAL INFO:			
Age	years	18-65	
Bodyweight	kg	71.5	EPA (1997) - mean of men and women age 18<75
Averaging Time - Noncarcinogenic	days	182	26 weeks
Averaging Time - Carcinogenic	days	25,550	70 years lifetime
Fraction of exposure from Site	unitless	1	All soil exposure assumed to come from site.
INGESTION OF SOIL:			
Conversion Factor	kg/mg	1E-06	
Ingestion Rate	mg/day	118	Ten days of exposure at 330 mg/day (EPA, 2001b) and 120 days of exposure at 100 mg/day
Exposure Frequency	days/years	130	5 days/week, 26 weeks/year
Exposure Duration	years	1	Professional judgement
DERMAL ABSORPTION OF SOIL:			
Conversion Factor	kg/mg	1E-06	
Soil to Skin Adherence Factor	mg/cm^2	0.14	EPA (2001a). Body-part specific value for Construction Workers
Skin Surface Area Available for Contact	cm^2/day	2,478	Approximate area of forearms, hands, and face (EPA 1997)
Exposure Frequency	days/years	130	5 days/week, 26 weeks/year
Exposure Duration	years	1	Professional judgement
INHALATION OF FUGITIVE DUST AND VAPORS:			
Respirable Particulate Concentration	mg/m^3	0.019	FL Division of Air Resources Management (2005). Gainesville annual average
Inhalation Rate	$m^3/hour$	2.5	EPA (1997)
Exposure Frequency	days/year	130	5 days/week, 26 weeks/year
Exposure Duration	years	1	Professional judgement
Exposure Time	hours/day	8	Standard work day.

References:

EPA (1989). Risk Assessment Guidance for Superfund (RAGS). Volume I, Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December.
EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.
FL Division of Air Resources Management (2005). Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

TABLE 7D
EXPOSURE PARAMETERS FOR THE UTILITY WORKER
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

PARAMETER DEFINITION	UNITS	UTILITY WORKER	RATIONALE/ REFERENCE
GENERAL INFO:			
Age	years	18-65	
Bodyweight	kg	71.5	EPA (1997) - mean of men and women age 18<75
Averaging Time - Noncarcinogenic	days	9,125	25 years of work
Averaging Time - Carcinogenic	days	25,550	70 years lifetime
Fraction of exposure from Site	unitless	1	All soil exposure assumed to come from site.
INGESTION OF SOIL:			
Conversion Factor	kg/mg	1E-06	
Ingestion Rate	mg/day	330	EPA (2001)
Exposure Frequency	days/years	5	Utility repair assumed to require five days
Exposure Duration	years	25	EPA (1989)
DERMAL ABSORPTION OF SOIL:			
Conversion Factor	kg/mg	1E-06	
Soil to Skin Adherence Factor	mg/cm^2	0.24	EPA (2001a). Body-part specific value for Utility Workers
Skin Surface Area Available for Contact	cm^2/day	2,478	Approximate area of forearms, hands, and face (EPA 1997)
Exposure Frequency	days/years	5	Utility repair assumed to require five days
Exposure Duration	years	25	EPA (1989)
INHALATION OF FUGITIVE DUST AND VAPORS:			
Respirable Particulate Concentration	mg/m^3	0.019	FL Division of Air Resources Management (2005). Gainesville annual average
Inhalation Rate	$m^3/hour$	2.5	EPA (1997)
Exposure Frequency	days/year	5	Utility repair assumed to require five days
Exposure Duration	years	25	EPA (1989)
Exposure Time	hours/day	8	Standard work day.

References:

EPA (1989). Risk Assessment Guidance for Superfund (RAGS). Volume I, Human Health Evaluation Manual (Part A). EPA/540/1-89/002. December.
EPA (1997). Exposure Factors Handbook. Volumes I - III. EPA/600/P-95/002. August.
FL Division of Air Resources Management (2005). Florida Air Monitoring Report. Division of Air Resource Mangement of the Department Environmental Protection. 2005.

TABLE 8A
SUBCHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituent	Subchronic Oral RfD (mg/kg-day)	RfD Source	Test Species	Study Type & Length	Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor	Subchronic Inhalation RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m^3)	RfC Source	Test Species	Study Type & Length	Target Organ/ Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor
7440-36-0	Antimony	4.00E-04	IRIS (Chronic value)	rat	chronic oral bioassay	longevity, blood glucose, and cholesterol	low	1000	1	NA	NA							
7440-38-2	Arsenic	3.00E-04	IRIS (Chronic value)	human	chronic oral exposure	Hyperpigmentation, keratosis, vascular complications	Medium	3	1	NA	NA							
16065-83-1	Chromium III	1.50E+00	IRIS (Chronic value)	rat	chronic feeding study	none observed	low	100	10	NA	NA							
7440-50-8	Copper	3.70E-02	HEAST as cited in USEPA 2007 (chronic value)															
7439-92-1	Lead	NA								NA	NA							
7439-97-6	Mercury	NA								8.57E-05	3.00E-04	IRIS (Chronic valu	Human	occupational inhalation studies	Hand tremor; increases in memory disturbances; slight subjective and objective evidence of autonomic dysfunction	medium	30	1
83-32-9	Acenaphthene	6.00E-01	IRIS	mouse	oral subchronic study	Hepatotoxicity	low	300	1	6.00E-01	2.10E+00	IRIS route-extrapolation as cited in USEPA 2007	mice	oral subchronic study	Hepatotoxicity	low	300	1
120-12-7	Anthracene	3.00E+00	IRIS	mouse	subchronic toxicity	none observed	low	300	1	3.00E+00	1.05E+01	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic toxicity	none observed	low	300	1
50-32-8	Benzo(a)pyrene	3.00E-01	IRIS (pyrene used as a surrogate)	mouse	subchronic oral bio	Kidney effects (renal tubular pat	low	3,000	1	3.00E-01	1.05E+00	IRIS (pyrene used as a surrogate)	mice	subchronic oral b	Kidney effects (ren	low	3,000	1
86-74-8	Carbazole	NA								NA	NA							
206-44-0	Fluoranthene	4.00E-01	IRIS	mouse	subchronic study	Nephropathy, increased liver weights, hematological alterations, and clinical effects	low	300	1	4.00E-01	1.40E+00	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic study	Nephropathy, increased liver weights, hematological alterations, and clinical effects	low	300	1
86-73-7	Fluorene	4.00E-01	IRIS	mouse	subchronic study	Decreased RBC, packed cell volume and hemoglobin	low	3,000	1	4.00E-01	1.40E+00	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic study	Decreased RBC, packed cell volume and hemoglobin	low	3,000	1
91-57-6	2-Methylnaphthalene	4.00E-03	IRIS (Chronic value)	mouse	81 week dietary study	Pulmonary alveolar proteinosis	low	1,000	1	NA	NA							
91-20-3	Naphthalene	2.00E-01	IRIS	rat	subchronic oral study	decreased mean terminal body weight in males	low	300	1	8.57E-04	3.00E-03	IRIS (Chronic valu	mouse	chronic inhalation study	Nasal effects: hyperplasia and metaplasia in respiratory and olfactory epithelium, respectively	medium	3000	1
87-86-5	Pentachlorophenol	3.00E-02	IRIS (Chronic value)	rat	oral chronic study	liver and kidney pathology	medium	100	1	NA	NA							
85-01-8	Phenanthrene	3.00E-01	IRIS (pyrene used as a surrogate)	mouse	subchronic oral bio	Kidney effects (renal tubular pat	low	3.00E+03	1.00E+00	3.00E-01	1.05E+00	IRIS (pyrene used as a surrogate)	mice	subchronic oral b	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3,000	1
119-00-0	Pyrene	3.00E-01	IRIS	mouse	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3,000	1	3.00E-01	1.05E+00	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3,000	1
1746-01-6	2,3,7,8-TCDD	NA								NA	NA							

TABLE 8A
SUBCHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

		Absorption Factors for Evaluating Subchronic Exposures					
CAS #	**Constituent**	**Soil Ingestion**		**Soil Dermal Absorption**		**Inhalation**	
		RAF (fraction)	**Source**	**RAF** (fraction)	**Source**	**RAF** (fraction)	**Source**
7440-36-0	Antimony	1.00E+00	AMEC, Appendix C	7.00E-03	AMEC, Appendix C	NA	
7440-38-2	Arsenic	2.47E-01	90th percentile, AMEC 2008c	1.00E-02	90th percentile, AMEC 2008c	1.00E+00	Assumed
16065-83-1	Chromium III	1.00E+00	AMEC, Appendix C	9.00E-02	AMEC, Appendix C	NA	
7440-50-8	Copper	1.00E+00	Assumed	1.00E+00	Assumed	NA	
7439-92-1	Lead	NA		NA		NA	
7439-97-6	Mercury	NA		NA		1.00E+00	AMEC, Appendix C
83-32-9	Acenaphthene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
120-12-7	Anthracene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
50-32-8	Benzo(a)pyrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
86-74-8	Carbazole	1.00E+00	Assumed	1.00E+00	Assumed	1.00E+00	Assumed
206-44-0	Fluoranthene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
86-73-7	Fluorene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
91-57-6	2-Methylnaphthalene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
91-20-3	Naphthalene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
87-86-5	Pentachlorophenol	8.99E-01	90th percentile, Figure 5J	4.50E-02	90th percentile, Figure 5J	1.00E+00	Assumed
85-01-8	Phenanthrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
119-00-0	Pyrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
1746-01-6	2,3,7,8-TCDD	NA		NA		NA	

TABLE 8B
CHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituent	Chronic Oral RfD (mg/kg/day)	RfD Source	Test Species	Study Type & Length	Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor	Chronic Inhalation RfD (mg/kg/day)	Chronic Inhalation RfC (mg/m^3)	RfC Source	Test Species	Study Type & Length	Target Organ/ Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor
7440-36-0	Antimony	4.00E-04	IRIS	rat	chronic oral bioassay	longevity, blood glucose, and cholesterol	low	1,000	1	NA	NA							
7440-38-2	Arsenic	3.00E-04	IRIS	human	chronic oral exposure	Hyperpigmentation, keratosis, possible vascular complications	Medium	3	1	NA	NA							
16065-83-1	Chromium III	1.50E+00	IRIS	rat	chronic feeding study	none observed	low	100	10	NA	NA							
7440-50-8	Copper	3.70E-02	HEAST as cited in USEPA 2007							NA	NA							
7439-92-1	Lead	NA								NA	NA							
7439-97-6	Mercury	NA								8.57E-05	3.00E-04	IRIS	Human	occupational inhalation studies	Hand tremor; increases in memory disturbances; slight subjective and objective evidence of autonomic dysfunction	medium	30	1
83-32-9	Acenaphthene	6.00E-02	IRIS	mouse	oral subchronic study	Hepatotoxicity	low	3,000	1	6.00E-02	2.10E-01	IRIS route-extrapolation as cited in USEPA 2007	mice	oral subchronic study	Hepatotoxicity	low	3,000	1
120-12-7	Anthracene	3.00E-01	IRIS	mouse	subchronic toxicity	none observed	low	3,000	1	3.00E-01	1.05E+00	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic toxicity	none observed	low	3,000	1
50-32-8	Benzo(a)pyrene	3.00E-02	IRIS (pyrene used as a surrogate)	mouse	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3000	1	3.00E-02	1.05E-01	IRIS (pyrene used as a surrogate)	mice	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3000	1
86-74-8	Carbazole	NA								NA	NA							
206-44-0	Fluoranthene	4.00E-02	IRIS	mouse	subchronic study	Nephropathy, increased liver weights, hematological alterations, and clinical effects	low	3,000	1	4.00E-02	1.40E-01	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic stuc	Nephropathy, increased liver weights, hematological alterations, and clinical effects	low	3,000	1
86-73-7	Fluorene	4.00E-02	IRIS	mouse	subchronic study	Decreased RBC, packed cell volume and hemoglobin	low	3,000	1	4.00E-02	1.40E-01	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic stuc	Decreased RBC, packed cell volume and hemoglobin	low	3,000	1
91-57-6	2-Methylnaphthalene	4.00E-03	IRIS	mouse	81 week dietary study	Pulmonary alveolar proteinosis	low	1,000	1	NA	NA							
91-20-3	Naphthalene	2.00E-02	IRIS	rat	subchronic oral study	decreased mean terminal body weight in males	low	3,000	1	8.57E-04	3.00E-03	IRIS	mouse	chronic inhalation study	Nasal effects: hyperplasia and metaplasia in respiratory and olfactory epithelium, respectively	medium	3000	1
87-86-5	Pentachlorophenol	3.00E-02	IRIS	rat	oral chronic study	liver and kidney pathology	medium	100	1	NA	NA							

TABLE 8B
CHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

CAS #	Constituent	Chronic Oral RfD (mg/kg/day)	RfD Source	Test Species	Study Type & Length	Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor	Chronic Inhalation RfD (mg/kg/day)	Chronic Inhalation RfC (mg/m^3)	RfC Source	Test Species	Study Type & Length	Target Organ/ Critical Effect	Confidence Level	Uncertainty Factor	Modifying Factor
85-01-8	Phenanthrene	3.00E-02	IRIS (pyrene used as a surrogate)	mouse	subchronic oral bio	Kidney effects (ren	low	3.00E+03	1.00E+00	3.00E-02	1.05E-01	IRIS (pyrene used as a surrogate)	mice	subchronic oral	Kidney effects (r	low	3,000	1
119-00-0	Pyrene	3.00E-02	IRIS	mouse	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3,000	1	3.00E-02	1.05E-01	IRIS route-extrapolation as cited in USEPA 2007	mice	subchronic oral bioassay	Kidney effects (renal tubular pathology, decreased kidney weights)	low	3,000	1
1746-01-6	2,3,7,8-TCDD	NA								NA	NA							

TABLE 8B
CHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

		Absorption Factors for Evaluating Chronic Exposures					
CAS #	**Constituent**	**Soil Ingestion**		**Soil Dermal Absorption**		**Inhalation**	
		RAF (fraction)	**Source**	**RAF** (fraction)	**Source**	**RAF** (fraction)	**Source**
7440-36-0	Antimony	1.00E+00	AMEC, Appendix C	7.00E-03	AMEC, Appendix C	NA	
7440-38-2	Arsenic	2.47E-01	90th percentile, AMEC 2008c	1.00E-02	90th percentile, AMEC 2008c	1.00E+00	Assumed
16065-83-1	Chromium III	1.00E+00	AMEC, Appendix C	9.00E-02	AMEC, Appendix C	NA	
7440-50-8	Copper	1.00E+00	Assumed	1.00E+00	Assumed	NA	
7439-92-1	Lead	NA		NA		NA	
7439-97-6	Mercury	NA		NA		1.00E+00	AMEC, Appendix C
83-32-9	Acenaphthene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
120-12-7	Anthracene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
50-32-8	Benzo(a)pyrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
86-74-8	Carbazole	1.00E+00	Assumed	1.00E+00	Assumed	1.00E+00	Assumed
206-44-0	Fluoranthene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
86-73-7	Fluorene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
91-57-6	2-Methylnaphthalene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
91-20-3	Naphthalene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
87-86-5	Pentachlorophenol	8.99E-01	90th percentile, Figure 5J	4.50E-02	90th percentile, Figure 5J	1.00E+00	Assumed

TABLE 8B
CHRONIC TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

		Absorption Factors for Evaluating Chronic Exposures					
CAS #	**Constituent**	**Soil Ingestion**		**Soil Dermal Absorption**		**Inhalation**	
		RAF (fraction)	**Source**	**RAF** (fraction)	**Source**	**RAF** (fraction)	**Source**
85-01-8	Phenanthrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
119-00-0	Pyrene	7.80E-01	90th percentile, AMEC 2008c	1.70E-01	90th percentile, AMEC 2008c	1.00E+00	Assumed
1746-01-6	2,3,7,8-TCDD	NA		NA		NA	

TABLE 8C
CANCER TOXICITY VALUES AND RAFS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

													Absorption Factors for Evaluating Carcinogenicity					
CAS #	**Constituent**	**Oral Slope Factor** $(mg/kg/day)^{-1}$	**Source**	**Test Species**	**Route**	**Tumor Type**	**Inhalation Slope Factor** $(mg/kg/day)^{-1}$	**Inhalation Unit Risk** $(\mu g/m^3)^{-1}$	**Source**	**Test Species**	**Study Type & Length**	**Tumor Type**	**Soil Ingestion RAF** (fraction)	**Source**	**Soil Dermal Absorption RAF** (fraction)	**Source**	**Inhalation RAF** (fraction)	**Source**
7440-36-0	Antimony	NA					NA	NA					NA		NA		NA	
7440-38-2	Arsenic	1.50E+00	IRIS	human	Oral, Drinking water	skin cancer	1.2E-06	4.30E-03	IRIS	human, male	inhalation, occupational exposure	lung cancer	2.47E-01	90th percentile, AMEC 2008c	1.00E-02	90th percentile, AMEC 2008c	1.00E+00	Assumed
16065-83-1	Chromium III	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
7440-50-8	Copper	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
7439-92-1	Lead	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
7439-97-6	Mercury	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
83-32-9	Acenaphthene	NA					NA	NA					NA		NA		NA	
120-12-7	Anthracene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
50-32-8	Benzo(a)pyrene	7.30E+00	IRIS	CFW mice, sex unknown; SWR/J Swill mice; Sprague-Dawley rats, males and females	oral, diet	Forestomach, squamous cell papillomas and carcinomas; forestomach, larynx and esophagus, papillomas and carcinomas (combined)	3.10E+00	NA	NCEA				5.29E-01	90th percentile, AMEC 2008c	3.40E-02	90th percentile, AMEC 2008c	1.00E+00	Assumed
86-74-8	Carbazole	2.0E-02	HEAST as cited in USEPA 2007				2.0E-02	NA	HEAST route-extrapolation as cited in USEPA 2007				1.00E+00	Assumed	1.00E+00	Assumed	1.00E+00	Assumed
206-44-0	Fluoranthene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
86-73-7	Fluorene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
91-57-6	2-Methylnaphthalene	NA					NA	NA					NA		NA		NA	
91-20-3	Naphthalene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
87-86-5	Pentachlorophenol	1.20E-01	IRIS	mice	diet	hepatocellular adenoma/carcinoma, pheochromocytoma, hemangioma	NA	NA	IRIS				8.99E-01	90th percentile, Figure 5J	4.50E-02	90th percentile, Figure 5J	1.00E+00	Assumed
85-01-8	Phenanthrene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
119-00-0	Pyrene	NA	IRIS				NA	NA	IRIS				NA		NA		NA	
1746-01-6	2,3,7,8-TCDD	1.5E+05	HEAST as cited in USEPA 2007			repiratory system tumors, liver tumors	1.5E+05	NA	HEAST as cited in USEPA 2007	rat	720 days, diet	respiratory system and liver tumors	5.00E-01	90th percentile, AMEC 2008c	7.90E-02	90th percentile, AMEC 2008c	5.50E-01	AMEC, Appendix C

TABLE 9A
ADULT LEAD MODEL FOR MAXIMUM SOIL EXPOSURE POINT CONCENTRATION
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/03

Exposure Variable	PbB Equation[1]		Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
					Using Equation 1		Using Equation 2	
	1*	2**			GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	144	144	144	144
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.050	0.050
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	250	250	250	250
$AT_{S,D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**			**ug/dL**	**1.7**	**1.9**	**1.7**	**1.9**
$PbB_{fetal,0.95}$	**95th percentile PbB among fetuses of adult workers**			**ug/dL**	**5.3**	**6.9**	**5.3**	**6.9**
PbB_t	**Target PbB level of concern (e.g., 10 ug/dL)**			**ug/dL**	**10.0**	**10.0**	**10.0**	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**			**%**	**0.6%**	**1.8%**	**0.6%**	**1.8%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

PbB_{adult} =	$(PbS*BKSF*IR_{S+D}*AF_{S,D}*EF_S/AT_{S,D}) + PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

PbB_{adult} =	$PbS*BKSF*([(IR_{S+D})*AF_S*EF_S*W_S]+[K_{SD}*(IR_{S+D})*(1-W_S)*AF_D*EF_D])/365+PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

TABLE 9B
ADULT LEAD MODEL FOR SEDIMENT EXPOSURE POINT CONCENTRATION
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/03

Exposure Variable	PbB Equation[1]		Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
					Using Equation 1		Using Equation 2	
	1*	2**			GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	226	226	226	226
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.050	0.050
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	12	12	12	12
$AT_{S,D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**			**ug/dL**	**1.5**	**1.7**	**1.5**	**1.7**
$PbB_{fetal,0.95}$	**95th percentile PbB among fetuses of adult workers**			**ug/dL**	**4.6**	**6.1**	**4.6**	**6.1**
PbB_t	**Target PbB level of concern (e.g., 10 ug/dL)**			**ug/dL**	**10.0**	**10.0**	**10.0**	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**			**%**	**0.4%**	**1.3%**	**0.4%**	**1.3%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

PbB_{adult} =	$(PbS*BKSF*IR_{S+D}*AF_{S,D}*EF_S/AT_{S,D}) + PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

PbB_{adult} =	$PbS*BKSF*([(IR_{S+D})*AF_S*EF_S*W_S]+[K_{SD}*(IR_{S+D})*(1-W_S)*AF_D*EF_D])/365+PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

TABLE 10
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Receptor/Area	Potential Subchronic Non-Cancer Risk	Potential Chronic Non-Cancer Risk	Potential Excess Lifetime Cancer Risk
On-Site Worker in Southwest Wooded Area	NA	0.02	7E-06
On-Site Worker in Western Active Area	NA	0.04	1E-04
On-Site Worker in Northwest Grassed Area	NA	0.004	4E-06
On-Site Worker in Boiler Area	NA	0.1	1E-03
On-Site Worker in Process Area	NA	0.1	5E-04
On-Site Worker in Eastern Active Area	NA	0.06	2E-04
On-Site Worker in Northeast Grassed Area	NA	0.01	4E-05
On-Site Worker in the Drainage Ditch	NA	0.0004	3E-07
On-Site Trespasser in Southwest Wooded Area	NA	0.008	1E-06
On-Site Trespasser in Western Active Area	NA	0.002	2E-06
On-Site Trespasser in Northwest Grassed Area	NA	0.001	6E-07
On-Site Trespasser in Boiler Area	NA	0.004	2E-05
On-Site Trespasser in Process Area	NA	0.002	4E-06
On-Site Trespasser in Eastern Active Area	NA	0.002	2E-06
On-Site Trespasser in Northeast Grassed Area	NA	0.006	5E-06
On-Site Trespasser in the Drainage Ditch	NA	0.004	1E-06
On-Site Construction Worker	0.1	NA	1E-05
On-Site Utility Worker	NA	0.006	3E-05

NA = not applicable

TABLE 11A
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - PROCESS AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	3E-03	1E-04	NA	3E-03	NA	NA	NA	NA
Arsenic	6E-02	1E-02	NA	8E-02	1E-05	2E-06	4E-13	1E-05
Chromium	8E-05	4E-05	NA	1E-04	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	5E-05	5E-05	NA	NA	NA	NA
BaP-TE	3E-04	4E-04	6E-06	7E-04	2E-05	6E-06	2E-07	2E-05
2-Methylnaphthalene	1E-02	1E-02	NA	2E-02	NA	NA	NA	NA
Naphthalene	3E-04	4E-04	1E-04	9E-04	NA	NA	NA	NA
Pentachlorophenol	1E-03	3E-04	NA	1E-03	1E-06	3E-07	NA	2E-06
TCDD-TEQ	NA	NA	NA	NA	3E-04	2E-04	4E-06	5E-04
TOTAL	8E-02	3E-02	2E-04	1E-01	3E-04	2E-04	4E-06	5E-04

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	5E-05	2E-06	NA	5E-05	NA	NA	NA	NA
Arsenic	9E-04	3E-04	NA	1E-03	6E-08	2E-08	1E-15	7E-08
Chromium	1E-06	7E-07	NA	2E-06	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	3E-07	3E-07	NA	NA	NA	NA
BaP-TE	5E-06	7E-06	3E-08	1E-05	1E-07	5E-08	4E-10	1E-07
2-Methylnaphthalene	1E-04	2E-04	NA	4E-04	NA	NA	NA	NA
Naphthalene	5E-06	8E-06	7E-07	1E-05	NA	NA	NA	NA
Pentachlorophenol	1E-05	5E-06	NA	2E-05	7E-09	3E-09	NA	1E-08
TCDD-TEQ	NA	NA	NA	NA	2E-06	2E-06	8E-09	3E-06
TOTAL	1E-03	5E-04	1E-06	2E-03	2E-06	2E-06	9E-09	4E-06

TABLE 11B
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - SOUTHWEST WOODED AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	3E-03	2E-04	NA	3E-03	NA	NA	NA	NA
Arsenic	1E-02	5E-03	NA	2E-02	2E-06	8E-07	9E-14	3E-06
Chromium	1E-05	1E-05	NA	3E-05	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	4E-06	4E-06	NA	NA	NA	NA
BaP-TE	1E-05	2E-05	2E-07	3E-05	5E-07	3E-07	5E-09	8E-07
2-Methylnaphthalene	7E-06	1E-05	NA	2E-05	NA	NA	NA	NA
Naphthalene	4E-07	9E-07	2E-07	1E-06	NA	NA	NA	NA
Pentachlorophenol	4E-06	2E-06	NA	5E-06	4E-09	2E-09	NA	7E-09
TCDD-TEQ	NA	NA	NA	NA	1E-06	2E-06	2E-08	3E-06
TOTAL	2E-02	5E-03	4E-06	2E-02	4E-06	3E-06	2E-08	7E-06

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	1E-03	5E-05	NA	1E-03	NA	NA	NA	NA
Arsenic	5E-03	2E-03	NA	7E-03	4E-07	1E-07	6E-15	5E-07
Chromium	6E-06	4E-06	NA	1E-05	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	6E-07	6E-07	NA	NA	NA	NA
BaP-TE	4E-06	6E-06	3E-08	1E-05	8E-08	4E-08	3E-10	1E-07
2-Methylnaphthalene	3E-06	5E-06	NA	8E-06	NA	NA	NA	NA
Naphthalene	2E-07	3E-07	3E-08	5E-07	NA	NA	NA	NA
Pentachlorophenol	2E-06	5E-07	NA	2E-06	8E-10	3E-10	NA	1E-09
TCDD-TEQ	NA	NA	NA	NA	2E-07	3E-07	1E-09	5E-07
TOTAL	7E-03	2E-03	7E-07	8E-03	7E-07	4E-07	2E-09	1E-06

TABLE 11C
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - WESTERN ACTIVE AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	1E-02	7E-04	NA	1E-02	NA	NA	NA	NA
Arsenic	2E-02	8E-03	NA	3E-02	3E-06	1E-06	1E-13	4E-06
Chromium	2E-05	2E-05	NA	3E-05	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	3E-05	3E-05	NA	NA	NA	NA
BaP-TE	1E-04	3E-04	2E-06	4E-04	6E-06	4E-06	7E-08	1E-05
2-Methylnaphthalene	3E-04	7E-04	NA	1E-03	NA	NA	NA	NA
Naphthalene	2E-04	5E-04	1E-04	8E-04	NA	NA	NA	NA
Pentachlorophenol	2E-04	9E-05	NA	3E-04	2E-07	1E-07	NA	3E-07
TCDD-TEQ	NA	NA	NA	NA	5E-05	7E-05	7E-07	1E-04
TOTAL	3E-02	1E-02	1E-04	4E-02	6E-05	8E-05	8E-07	1E-04

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	4E-04	2E-05	NA	5E-04	NA	NA	NA	NA
Arsenic	8E-04	2E-04	NA	1E-03	5E-08	2E-08	9E-16	7E-08
Chromium	7E-07	5E-07	NA	1E-06	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	5E-07	5E-07	NA	NA	NA	NA
BaP-TE	5E-06	8E-06	3E-08	1E-05	1E-07	5E-08	4E-10	2E-07
2-Methylnaphthalene	1E-05	2E-05	NA	4E-05	NA	NA	NA	NA
Naphthalene	1E-05	2E-05	2E-06	3E-05	NA	NA	NA	NA
Pentachlorophenol	8E-06	3E-06	NA	1E-05	4E-09	1E-09	NA	5E-09
TCDD-TEQ	NA	NA	NA	NA	8E-07	9E-07	4E-09	2E-06
TOTAL	1E-03	3E-04	2E-06	2E-03	1E-06	1E-06	5E-09	2E-06

TABLE 11D
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - NORTHWEST GRASSED AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	1E-03	7E-05	NA	1E-03	NA	NA	NA	NA
Arsenic	2E-03	7E-04	NA	2E-03	3E-07	1E-07	1E-14	4E-07
Chromium	4E-07	4E-07	NA	8E-07	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	3E-06	3E-06	NA	NA	NA	NA
BaP-TE	4E-06	9E-06	7E-08	1E-05	2E-07	1E-07	2E-09	3E-07
2-Methylnaphthalene	7E-06	2E-05	NA	2E-05	NA	NA	NA	NA
Naphthalene	3E-07	7E-07	1E-07	1E-06	NA	NA	NA	NA
Pentachlorophenol	1E-06	7E-07	NA	2E-06	2E-09	8E-10	NA	3E-09
TCDD-TEQ	NA	NA	NA	NA	1E-06	2E-06	2E-08	3E-06
TOTAL	3E-03	8E-04	3E-06	4E-03	2E-06	2E-06	2E-08	4E-06

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	4E-04	2E-05	NA	4E-04	NA	NA	NA	NA
Arsenic	7E-04	2E-04	NA	1E-03	5E-08	1E-08	8E-16	6E-08
Chromium	2E-07	1E-07	NA	3E-07	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	4E-07	4E-07	NA	NA	NA	NA
BaP-TE	2E-06	3E-06	1E-08	4E-06	4E-08	2E-08	1E-10	5E-08
2-Methylnaphthalene	3E-06	5E-06	NA	8E-06	NA	NA	NA	NA
Naphthalene	1E-07	2E-07	2E-08	4E-07	NA	NA	NA	NA
Pentachlorophenol	6E-07	2E-07	NA	8E-07	3E-10	1E-10	NA	4E-10
TCDD-TEQ	NA	NA	NA	NA	2E-07	2E-07	1E-09	4E-07
TOTAL	1E-03	2E-04	5E-07	1E-03	3E-07	3E-07	1E-09	6E-07

TABLE 11E
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - BOILER AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	1E-03	9E-05	NA	1E-03	NA	NA	NA	NA
Arsenic	2E-02	9E-03	NA	3E-02	3E-06	1E-06	2E-13	5E-06
Chromium	2E-05	2E-05	NA	4E-05	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	5E-05	5E-05	NA	NA	NA	NA
BaP-TE	8E-03	2E-02	1E-04	3E-02	4E-04	3E-04	5E-06	7E-04
2-Methylnaphthalene	1E-02	3E-02	NA	4E-02	NA	NA	NA	NA
Naphthalene	5E-04	1E-03	2E-04	2E-03	NA	NA	NA	NA
Pentachlorophenol	9E-04	4E-04	NA	1E-03	1E-06	5E-07	NA	2E-06
TCDD-TEQ	NA	NA	NA	NA	2E-04	2E-04	2E-06	4E-04
TOTAL	5E-02	5E-02	4E-04	1E-01	6E-04	5E-04	7E-06	1E-03

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	5E-05	3E-06	NA	6E-05	NA	NA	NA	NA
Arsenic	9E-04	3E-04	NA	1E-03	6E-08	2E-08	1E-15	8E-08
Chromium	9E-07	6E-07	NA	2E-06	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	8E-07	8E-07	NA	NA	NA	NA
BaP-TE	3E-04	5E-04	2E-06	9E-04	7E-06	3E-06	3E-08	1E-05
2-Methylnaphthalene	5E-04	8E-04	NA	1E-03	NA	NA	NA	NA
Naphthalene	2E-05	3E-05	3E-06	5E-05	NA	NA	NA	NA
Pentachlorophenol	4E-05	1E-05	NA	5E-05	2E-08	7E-09	NA	3E-08
TCDD-TEQ	NA	NA	NA	NA	3E-06	3E-06	2E-08	6E-06
TOTAL	2E-03	2E-03	6E-06	4E-03	1E-05	7E-06	4E-08	2E-05

TABLE 11F
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - EASTERN ACTIVE AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	2E-03	1E-04	NA	2E-03	NA	NA	NA	NA
Arsenic	4E-02	2E-02	NA	6E-02	7E-06	3E-06	3E-13	9E-06
Chromium	5E-05	5E-05	NA	1E-04	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	3E-05	3E-05	NA	NA	NA	NA
BaP-TE	2E-04	3E-04	3E-06	5E-04	8E-06	5E-06	8E-08	1E-05
2-Methylnaphthalene	3E-04	6E-04	NA	9E-04	NA	NA	NA	NA
Naphthalene	6E-05	1E-04	3E-05	2E-04	NA	NA	NA	NA
Pentachlorophenol	6E-05	3E-05	NA	9E-05	8E-08	4E-08	NA	1E-07
TCDD-TEQ	NA	NA	NA	NA	6E-05	9E-05	8E-07	1E-04
TOTAL	4E-02	2E-02	6E-05	6E-02	7E-05	9E-05	9E-07	2E-04

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	7E-05	4E-06	NA	8E-05	NA	NA	NA	NA
Arsenic	2E-03	5E-04	NA	2E-03	1E-07	3E-08	2E-15	1E-07
Chromium	2E-06	1E-06	NA	4E-06	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	5E-07	5E-07	NA	NA	NA	NA
BaP-TE	6E-06	1E-05	4E-08	2E-05	1E-07	6E-08	5E-10	2E-07
2-Methylnaphthalene	1E-05	2E-05	NA	3E-05	NA	NA	NA	NA
Naphthalene	3E-06	4E-06	4E-07	7E-06	NA	NA	NA	NA
Pentachlorophenol	3E-06	9E-07	NA	4E-06	1E-09	5E-10	NA	2E-09
TCDD-TEQ	NA	NA	NA	NA	1E-06	1E-06	5E-09	2E-06
TOTAL	2E-03	6E-04	1E-06	2E-03	1E-06	1E-06	6E-09	2E-06

TABLE 11G
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - NORTHEAST GRASSED AREA
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site KI Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	3E-04	2E-05	NA	3E-04	NA	NA	NA	NA
Arsenic	1E-02	4E-03	NA	1E-02	2E-06	6E-07	7E-14	2E-06
Chromium	1E-05	1E-05	NA	2E-05	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	1E-05	1E-05	NA	NA	NA	NA
BaP-TE	2E-05	3E-05	3E-07	5E-05	8E-07	5E-07	9E-09	1E-06
2-Methylnaphthalene	2E-06	5E-06	NA	7E-06	NA	NA	NA	NA
Naphthalene	6E-07	1E-06	3E-07	2E-06	NA	NA	NA	NA
Pentachlorophenol	7E-06	4E-06	NA	1E-05	9E-09	4E-09	NA	1E-08
TCDD-TEQ	NA	NA	NA	NA	1E-05	2E-05	2E-07	3E-05
TOTAL	1E-02	4E-03	1E-05	1E-02	2E-05	2E-05	2E-07	4E-05

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
On-Site Trespasser	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	1E-04	6E-06	NA	1E-04	NA	NA	NA	NA
Arsenic	4E-03	1E-03	NA	5E-03	3E-07	8E-08	5E-15	4E-07
Chromium	5E-06	3E-06	NA	8E-06	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	2E-06	2E-06	NA	NA	NA	NA
BaP-TE	7E-06	1E-05	4E-08	2E-05	1E-07	7E-08	6E-10	2E-07
2-Methylnaphthalene	1E-06	2E-06	NA	3E-06	NA	NA	NA	NA
Naphthalene	3E-07	4E-07	4E-08	7E-07	NA	NA	NA	NA
Pentachlorophenol	3E-06	1E-06	NA	4E-06	2E-09	6E-10	NA	2E-09
TCDD-TEQ	NA	NA	NA	NA	2E-06	3E-06	1E-08	5E-06
TOTAL	4E-03	1E-03	2E-06	6E-03	3E-06	3E-06	1E-08	5E-06

TABLE 11H
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - DRAINAGE DITCH
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)			Potential Excess Lifetime Cancer Risk		
On-Site KI Worker	Soil Ingestion	Soil Dermal	All Pathways	Soil Ingestion	Soil Dermal	All Pathways
Arsenic	3E-04	1E-04	4E-04	5E-08	2E-08	6E-08
Chromium	4E-07	4E-07	8E-07	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
BaP-TE	5E-07	1E-06	2E-06	3E-08	2E-08	4E-08
Pentachlorophenol	6E-08	3E-08	9E-08	7E-11	3E-11	1E-10
TCDD-TEQ	NA	NA	NA	6E-08	1E-07	2E-07
TOTAL	3E-04	1E-04	4E-04	1E-07	1E-07	3E-07

	Potential Non-Cancer Risks (HI)			Potential Excess Lifetime Cancer Risk		
On-Site Trespasser	Soil Ingestion	Soil Dermal	All Pathways	Soil Ingestion	Soil Dermal	All Pathways
Arsenic	3E-03	9E-04	4E-03	2E-07	6E-08	3E-07
Chromium	5E-06	3E-06	8E-06	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
BaP-TE	5E-06	8E-06	1E-05	1E-07	5E-08	2E-07
Pentachlorophenol	6E-07	2E-07	8E-07	3E-10	1E-10	4E-10
TCDD-TEQ	NA	NA	NA	3E-07	3E-07	6E-07
TOTAL	3E-03	9E-04	4E-03	6E-07	4E-07	1E-06

TABLE 11G
SUMMARY OF ESTIMATED POTENTIAL NON-CANCER RISKS AND POTENTIAL EXCESS LIFETIME CANCER RISKS - DETERMINISTIC RISK ASSESSMENT - ENTIRE SITE
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
Construction Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	3E-03	7E-05	NA	3E-03	NA	NA	NA	NA
Arsenic	4E-02	4E-03	NA	4E-02	1E-07	1E-08	3E-15	1E-07
Chromium	4E-05	1E-05	NA	5E-05	NA	NA	NA	NA
Copper	1E-03	4E-03	NA	5E-03	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	4E-05	4E-05	NA	NA	NA	NA
Acenaphthene	1E-04	6E-05	8E-07	2E-04	NA	NA	NA	NA
Anthracene	2E-04	2E-04	2E-06	4E-04	NA	NA	NA	NA
BaP-TE	1E-04	6E-05	8E-07	2E-04	1E-06	2E-07	6E-09	1E-06
Carbazole	NA	NA	NA	NA	3E-10	1E-09	2E-12	1E-09
Fluoranthene	5E-04	3E-04	4E-06	8E-04	NA	NA	NA	NA
Fluorene	2E-04	1E-04	1E-06	3E-04	NA	NA	NA	NA
2-Methylnaphthalene	3E-02	2E-02	NA	4E-02	NA	NA	NA	NA
Naphthalene	1E-04	6E-05	2E-04	4E-04	NA	NA	NA	NA
Pentachlorophenol	2E-03	3E-04	NA	2E-03	6E-08	8E-09	NA	6E-08
Phenanthrene	6E-04	4E-04	5E-06	9E-04	NA	NA	NA	NA
Pyrene	4E-04	2E-04	3E-06	6E-04	NA	NA	NA	NA
TCDD-TEQ	NA	NA	NA	NA	8E-06	4E-06	6E-08	1E-05
TOTAL	7E-02	3E-02	2E-04	1E-01	1E-05	4E-06	7E-08	1E-05

	Potential Non-Cancer Risks (HI)				Potential Excess Lifetime Cancer Risk			
Utility Worker	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways	Soil Ingestion	Soil Dermal	Soil Inhalation	All Pathways
Antimony	2E-04	2E-06	NA	2E-04	NA	NA	NA	NA
Arsenic	2E-03	1E-04	NA	2E-03	3E-07	2E-08	2E-15	3E-07
Chromium	2E-06	3E-07	NA	2E-06	NA	NA	NA	NA
Copper	7E-05	1E-04	NA	2E-04	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	7E-07	7E-07	NA	NA	NA	NA
Acenaphthene	5E-05	2E-05	2E-07	7E-05	NA	NA	NA	NA
Anthracene	1E-04	5E-05	4E-07	2E-04	NA	NA	NA	NA
BaP-TE	5E-05	2E-05	2E-07	7E-05	3E-06	3E-07	5E-09	3E-06
Carbazole	NA	NA	NA	NA	9E-10	2E-09	2E-12	2E-09
Fluoranthene	3E-04	1E-04	8E-07	4E-04	NA	NA	NA	NA
Fluorene	9E-05	3E-05	3E-07	1E-04	NA	NA	NA	NA
2-Methylnaphthalene	1E-03	6E-04	NA	2E-03	NA	NA	NA	NA
Naphthalene	5E-05	2E-05	4E-06	8E-05	NA	NA	NA	NA
Pentachlorophenol	1E-04	1E-05	NA	1E-04	1E-07	1E-08	NA	2E-07
Phenanthrene	3E-04	1E-04	9E-07	4E-04	NA	NA	NA	NA
Pyrene	2E-04	8E-05	6E-07	3E-04	NA	NA	NA	NA
TCDD-TEQ	NA	NA	NA	NA	2E-05	6E-06	6E-08	3E-05
TOTAL	5E-03	1E-03	8E-06	6E-03	3E-05	7E-06	7E-08	3E-05

TABLE 12A
SUMMARY OF MEDIAN (50TH PERCENTILE) UNCERTAINTY MEE TOTAL POTENTIAL EXCESS LIFETIME CANCER RISKS FOR ALL AREAS AND ALL COPCS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Combined COPCs				
		50% Variability (5%, 95% Variability)			
	Deterministic Total Risk	Ingestion	Dermal Contact	Inhalation of Dust	Total
Process Area (PA)	***5.1E-04***	7.9E-08 (3.7E-09, **4.0E-06**)	3.4E-10 (1.7E-11, 1.7E-08)	3.7E-08 (1.8E-09, **1.9E-06**)	1.2E-07 (5.7E-09, **5.9E-06**)
Boiler Area (BA)	***1.1E-03***	1.0E-06 (4.7E-08, **5.2E-05**)	4.1E-08 (1.9E-09, **2.2E-06**)	3.2E-08 (1.5E-09, **1.6E-06**)	**1.1E-06** (5.3E-08, **5.8E-05**)
South Western Wooded Area (SWWA)	**6.1E-06**	7.3E-09 (3.3E-10, 3.6E-07)	2.3E-10 (1.1E-11, 1.1E-08)	5.0E-09 (2.1E-10, 2.5E-07)	1.2E-08 (5.8E-10, 6.3E-07)
Western Active Area (WAA)	***1.3E-04***	3.0E-08 (1.4E-09, **1.6E-06**)	1.2E-09 (5.9E-11, 6.2E-08)	1.2E-08 (5.8E-10, 6.0E-07)	4.3E-08 (2.1E-09, **2.3E-06**)
Eastern Active Area (EAA)	***1.6E-04***	5.1E-08 (2.5E-09, **2.6E-06**)	1.7E-09 (8.7E-11, 8.9E-08)	2.7E-08 (1.3E-09, **1.4E-06**)	8.1E-08 (4.0E-09, **4.1E-06**)
NW Grassed Area (NWGA)	**3.7E-06**	1.6E-09 (7.2E-11, 7.9E-08)	5.2E-11 (2.4E-12, 2.6E-09)	7.4E-10 (3.2E-11, 3.7E-08)	2.4E-09 (1.1E-10, 1.2E-07)
NE Grassed Area (NEGA)	**3.6E-05**	8.8E-09 (4.0E-10, 4.4E-07)	3.4E-10 (1.5E-11, 1.7E-08)	4.5E-09 (2.1E-10, 2.3E-07)	1.4E-08 (6.2E-10, 6.9E-07)

Note:

All median MEE PELCRs are within or below USEPA's range of allowable risk. PELCRs shown in bold are greater than FDEP's risk limit, and those shown in bold italics exceed USEPA's allowable risk range.

TABLE 12B
SUMMARY OF MEDIAN (50TH PERCENTILE) UNCERTAINTY MEE POTENTIAL EXCESS LIFETIME CANCER RISKS FOR ALL AREAS - TCDD-TEQ
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	TCDD-TEQ				
		50% Variability (5%, 95% Variability)			
	Deterministic Total Risk	Ingestion	Dermal Contact	Inhalation of Dust	Total
Process Area (PA)	***4.8E-04***	7.6E-09 (2.1E-10, 3.9E-07)	3.5E-11 (1.1E-12, 1.8E-09)	1.6E-10 (4.9E-12, 8.5E-09)	7.9E-09 (2.5E-10, 4.1E-07)
Boiler Area (BA)	***4.1E-04***	4.8E-09 (1.4E-10, 2.5E-07)	1.8E-10 (5.5E-12, 8.8E-09)	1.0E-10 (3.0E-12, 5.3E-09)	5.2E-09 (1.9E-10, 2.7E-07)
South Western Wooded Area (SWWA)	**3.2E-06**	4.3E-11 (1.4E-12, 2.3E-09)	2.0E-12 (7.2E-14, 1.0E-10)	8.6E-13 (2.8E-14, 4.6E-11)	4.9E-11 (1.8E-12, 2.5E-09)
Western Active Area (WAA)	***1.2E-04***	1.7E-09 (5.2E-11, 8.9E-08)	8.3E-11 (2.6E-12, 4.2E-09)	3.7E-11 (1.1E-12, 1.9E-09)	1.9E-09 (6.8E-11, 9.9E-08)
Eastern Active Area (EAA)	***1.4E-04***	1.8E-09 (5.1E-11, 9.4E-08)	7.1E-11 (2.0E-12, 3.8E-09)	3.8E-11 (1.1E-12, 2.0E-09)	2.0E-09 (6.7E-11, 1.0E-07)
NW Grassed Area (NWGA)	**3.0E-06**	4.4E-11 (1.5E-12, 2.4E-09)	2.1E-12 (7.6E-14, 1.1E-10)	9.3E-13 (3.1E-14, 4.8E-11)	5.0E-11 (1.9E-12, 2.6E-09)
NE Grassed Area (NEGA)	**3.3E-05**	7.2E-10 (2.5E-11, 3.4E-08)	3.3E-11 (1.2E-12, 1.7E-09)	1.4E-11 (5.0E-13, 7.5E-10)	8.0E-10 (3.1E-11, 4.2E-08)

Note:

All median MEE PELCRs are within or below USEPA's range of allowable risk. PELCRs shown in bold are greater than FDEP's risk limit, and those shown in bold italics exceed USEPA's allowable risk range.

TABLE 12C
SUMMARY OF MEDIAN (50TH PERCENTILE) UNCERTAINTY MEE POTENTIAL EXCESS LIFETIME CANCER RISKS FOR ALL AREAS - BAP-TE
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	BaP-TE				
		50% Variability (5%, 95% Variability)			
	Deterministic Total Risk	**Ingestion**	**Dermal Contact**	**Inhalation of Dust**	**Total**
Process Area (PA)	**2.2E-05**	3.2E-08 (1.5E-09, **1.7E-06**)	1.5E-10 (6.9E-12, 7.4E-09)	7.2E-10 (3.3E-11, 3.7E-08)	3.3E-08 (1.5E-09, **1.7E-06**)
Boiler Area (BA)	***6.4E-04***	1.0E-06 (4.6E-08, **5.1E-05**)	4.1E-08 (1.9E-09, **2.1E-06**)	2.2E-08 (1.0E-09, **1.1E-06**)	**1.1E-06** (5.1E-08, **5.7E-05**)
South Western Wooded Area (SWWA)	7.6E-07	1.4E-09 (6.1E-11, 7.0E-08)	5.4E-11 (2.6E-12, 2.8E-09)	2.6E-11 (1.2E-12, 1.3E-09)	1.5E-09 (6.5E-11, 7.4E-08)
Western Active Area (WAA)	**9.9E-06**	1.7E-08 (8.2E-10, 8.7E-07)	6.3E-10 (3.2E-11, 3.4E-08)	3.6E-10 (1.8E-11, 1.8E-08)	1.8E-08 (8.8E-10, 9.3E-07)
Eastern Active Area (EAA)	**1.2E-05**	2.0E-08 (9.9E-10, **1.0E-06**)	7.3E-10 (3.8E-11, 3.7E-08)	4.3E-10 (2.1E-11, 2.2E-08)	2.1E-08 (1.1E-09, **1.1E-06**)
NW Grassed Area (NWGA)	3.2E-07	6.6E-10 (3.0E-11, 3.3E-08)	2.4E-11 (1.1E-12, 1.2E-09)	1.3E-11 (6.0E-13, 6.6E-10)	7.2E-10 (3.2E-11, 3.6E-08)
NE Grassed Area (NEGA)	**1.3E-06**	3.0E-09 (1.3E-10, 1.5E-07)	1.3E-10 (5.7E-12, 6.1E-09)	5.7E-11 (2.7E-12, 2.9E-09)	3.2E-09 (1.5E-10, 1.6E-07)

Note:

All median MEE PELCRs are within or below USEPA's range of allowable risk. PELCRs shown in bold are greater than FDEP's risk limit, and those shown in bold italics exceed USEPA's allowable risk range.

TABLE 12D
SUMMARY OF MEDIAN (50TH PERCENTILE) UNCERTAINTY MEE POTENTIAL EXCESS LIFETIME CANCER RISKS FOR ALL AREAS - ARSENIC
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Arsenic				
		50% Variability (5%, 95% Variability)			
	Deterministic Total Risk	**Ingestion**	**Dermal Contact**	**Inhalation of Dust**	**Total**
Process Area (PA)	**8.5E-06**	3.6E-08 (1.7E-09, **1.8E-06**)	1.3E-10 (6.2E-12, 6.6E-09)	3.6E-08 (1.7E-09, **1.8E-06**)	7.1E-08 (3.5E-09, **3.6E-06**)
Boiler Area (BA)	**3.5E-06**	1.0E-08 (4.8E-10, 5.0E-07)	3.3E-10 (1.6E-11, 1.7E-08)	1.0E-08 (4.8E-10, 5.0E-07)	2.1E-08 (1.0E-09, 1.0E-06)
South Western Wooded Area (SWWA)	**2.1E-06**	5.8E-09 (2.5E-10, 2.9E-07)	1.7E-10 (7.6E-12, 8.7E-09)	4.9E-09 (2.1E-10, 2.5E-07)	1.8E-08 (5.0E-10, 5.5E-07)
Western Active Area (WAA)	**3.1E-06**	1.1E-08 (5.3E-10, 5.5E-07)	3.8E-10 (1.9E-11, 2.0E-08)	1.1E-08 (5.6E-10, 5.8E-07)	2.3E-08 (1.1E-09, **1.2E-06**)
Eastern Active Area (EAA)	**6.9E-06**	2.9E-08 (1.3E-09, **1.5E-06**)	7.9E-10 (4.1E-11, 4.2E-08)	2.7E-08 (1.3E-09, **1.4E-06**)	5.6E-08 (2.7E-09, **2.8E-06**)
NW Grassed Area (NWGA)	2.9E-07	8.6E-10 (3.7E-11, 4.4E-08)	2.4E-11 (1.1E-12, 1.2E-09)	7.2E-10 (3.1E-11, 3.6E-08)	1.6E-09 (7.2E-11, 8.0E-08)
NE Grassed Area (NEGA)	**1.6E-06**	4.8E-09 (2.1E-10, 2.5E-07)	1.7E-10 (7.4E-12, 8.5E-09)	4.4E-09 (2.0E-10, 2.2E-07)	9.5E-09 (4.3E-10, 4.8E-07)

Note:

All median MEE PELCRs are within or below USEPA's range of allowable risk. PELCRs shown in bold are greater than FDEP's risk limit, and those shown in bold italics exceed USEPA's allowable risk range.

TABLE 12E
SUMMARY OF MEDIAN (50TH PERCENTILE) UNCERTAINTY MEE POTENTIAL EXCESS ESTIMATED LIFETIME CANCER RISKS FOR ALL AREAS
PENTACHLOROPHENOL
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Pentachlorophenol				
		50% Variability (5%, 95% Variability)			
	Deterministic Total Risk	Ingestion	Dermal Contact	Inhalation of Dust	Total
Process Area (PA)	**1.7E-06**	2.5E-09 (1.0E-10, 1.3E-07)	7.7E-12 (3.6E-13, 3.8E-10)	6.2E-11 (2.7E-12, 3.1E-09)	2.6E-09 (1.1E-10, 1.3E-07)
Boiler Area (BA)	**1.5E-06**	2.7E-09 (1.2E-10, 1.3E-07)	6.8E-11 (3.0E-12, 3.4E-09)	6.1E-11 (2.8E-12, 3.1E-09)	2.8E-09 (1.2E-10, 1.4E-07)
South Western Wooded Area (SWWA)	6.5E-09	1.6E-11 (6.8E-13, 7.8E-10)	4.0E-13 (1.8E-14, 2.0E-11)	3.3E-13 (1.5E-14, 1.7E-11)	1.7E-11 (7.2E-13, 8.1E-10)
Western Active Area (WAA)	3.3E-07	4.4E-10 (1.8E-11, 2.2E-08)	1.1E-11 (4.9E-13, 5.8E-10)	1.0E-11 (4.4E-13, 5.2E-10)	4.7E-10 (2.0E-11, 2.3E-08)
Eastern Active Area (EAA)	1.1E-07	2.5E-10 (1.2E-11, 1.3E-08)	5.9E-12 (3.2E-13, 3.0E-10)	6.0E-12 (2.9E-13, 3.1E-10)	2.6E-10 (1.3E-11, 1.4E-08)
NW Grassed Area (NWGA)	2.5E-09	7.6E-12 (3.5E-13, 3.8E-10)	1.9E-13 (8.7E-15, 9.3E-12)	1.6E-13 (7.3E-15, 8.1E-12)	8.0E-12 (3.7E-13, 4.1E-10)
NE Grassed Area (NEGA)	1.3E-08	4.7E-11 (2.2E-12, 2.3E-09)	1.2E-12 (5.6E-14, 5.9E-11)	1.0E-12 (4.7E-14, 5.0E-11)	5.0E-11 (2.3E-12, 2.5E-09)

Note:

All median MEE PELCRs are within or below USEPA's range of allowable risk. PELCRs shown in bold are greater than FDEP's risk limit, and those shown in bold italics exceed USEPA's allowable risk range.

TABLE 13
UNCERTAINTY ASSESSMENT - EVALUATION OF ALTERNATE UNCERTAINTY LOOP ITERATIONS
KOPPERS, INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

		Alternate Uncert Loop Counts							
Uncertainty Loop Counts	**200**	**100**	**300**	**400**	**500**	**1000**	**Mean**	**RSD**	**%D**
Case 1 - Stability of Median Risk Estimates									
Upper Bound (Uncert-95th%)	1.1E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.1%	-5.9%
Central Tendency (Uncert-50th%)	8.8E-08	9.4E-08	9.3E-08	9.6E-08	9.4E-08	9.3E-08	9.4E-08	1.0%	-6.2%
Lower Bound (Uncert-5th%)	6.1E-08	6.3E-08	6.6E-08	6.9E-08	6.5E-08	6.5E-08	6.6E-08	3.1%	-7.0%
Case 2 - Stability of Mean Risk Estimates									
Upper Bound (Uncert-95th%)	8.2E-07	8.7E-07	8.8E-07	8.8E-07	8.8E-07	8.7E-07	8.8E-07	0.9%	-6.6%
Central Tendency (Uncert-50th%)	6.4E-07	7.0E-07	6.9E-07	7.0E-07	7.0E-07	6.9E-07	6.9E-07	0.9%	-7.3%
Lower Bound (Uncert-5th%)	4.6E-07	4.5E-07	4.9E-07	5.0E-07	4.7E-07	4.7E-07	4.8E-07	3.9%	-2.5%
Case 3 - Stability of 95th% Risk Estimates									
Upper Bound (Uncert-95th%)	5.8E-06	6.2E-06	6.1E-06	6.1E-06	6.1E-06	6.0E-06	6.1E-06	1.0%	-4.6%
Central Tendency (Uncert-50th%)	4.5E-06	4.8E-06	4.6E-06	4.7E-06	4.7E-06	4.7E-06	4.7E-06	1.5%	-5.7%
Lower Bound (Uncert-5th%)	3.1E-06	3.0E-06	3.3E-06	3.4E-06	3.1E-06	3.2E-06	3.2E-06	4.7%	-2.3%

Notes:
These MEE risks were calculated for the PA area and respresent the total potential cancer risk across all four COPCs and exposure pathways. Fixed RfD values were used, the CSFs for all COPCs except Dioxin-TEQ were based on the 3/4-scaling factor, and the Dioxin-TEQ CSF was the value derived from Maruyama and Aoki (2006).
200 iterations were used for the MEE model runs reported in the HHRA.
"RSD" represents the RSD values across all six alternate uncertainty loop counts
"%D-Avg" is the %D values calculated by comparing the 200 iteration risk result to the average of all six uncertainty loop counts

Appendix A

Summary of Site Soil and Sediment Data Used in the Risk Assessment

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	B1	B3	B-4	B5	DT	GA-Soil-001	GA-Soil-004	GA-Soil-005	GA-Soil-011	GA-Soil-033	GA-Soil-034	GA-Soil-035	GA-Soil-036	GA-Soil-037	GA-Soil-038	NL
	Sample Date	15-Aug-95	16-Aug-95	17-Aug-95	17-Aug-95	24-Aug-95	11-Aug-98	13-Aug-98	13-Aug-98	13-Aug-98	13-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	24-Aug-95
	Sample Depth (feet)	2.5-2.5	2-2	3-3	5-5	0-0.5	0-0.7	0-1	0-1	0-1	0-1	0.5-0.5	0.5-0.5	0.5-0.5	0.5-0.5	0.5-0.5	0-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane																
79-34-5	1,1,2,2-Tetrachloroethane																
79-00-5	1,1,2-Trichloroethane																
75-34-3	1,1-Dichloroethane																
75-35-4	1,1-Dichloroethylene																
120-82-1	1,2,4-Trichlorobenzene																
96-12-8	1,2-Dibromo-3-chloropropane																
106-93-4	1,2-Dibromoethane																
95-50-1	1,2-Dichlorobenzene																
107-06-2	1,2-Dichloroethane																
78-87-5	1,2-Dichloropropane																
106-46-7	1,4-Dichlorobenzene																
95-95-4	2,4,5-Trichlorophenol																
88-06-2	2,4,6-Trichlorophenol																
120-83-2	2,4-Dichlorophenol																
105-67-9	2,4-Dimethylphenol																
51-28-5	2,4-Dinitrophenol																
121-14-2	2,4-Dinitrotoluene																
606-20-2	2,6-Dinitrotoluene																
91-58-7	2-Chloronaphthalene																
95-57-8	2-Chlorophenol																
91-57-6	2-Methylnaphthalene	2.3	0.75 U	400		58 J											68 J
95-48-7	2-Methylphenol (o-cresol)																
88-74-4	2-Nitroaniline																
88-75-5	2-Nitrophenol																
91-94-1	3,3'-Dichlorobenzidine																
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one																
99-09-2	3-Nitroaniline																
534-52-1	4,6-Dinitro-2-Methylphenol																
101-55-3	4-Bromophenyl phenyl ether																
59-50-7	4-Chloro-3-methylphenol																
7005-72-3	4-Chlorophenyl phenyl ether																
106-44-5	4-Methylphenol (m/p-cresol)																
100-02-7	4-Nitrophenol																
83-32-9	Acenaphthene	0.95 U	0.2 J	450		130						2 U	20 U	0.2 U	20 U	0.2 U	430
208-96-8	Acenaphthylene	0.95 U	0.3 J	0.022 J		38.5 U						1 U	10 U	0.1 U	10 U	0.1 U	7.6 J
67-64-1	Acetone																
120-12-7	Anthracene	3.9	0.54 J	440		180						0.04 U	0.81	0.004 U	0.4 U	0.004 U	390
7440-36-0	Antimony																
7440-38-2	Arsenic	7.2	8.1	11	3.1							10 U	30.3	10 U	10 U	10 U	
7440-39-3	Barium																
71-43-2	Benzene																
56-55-3	Benzo(a)anthracene	0.95 U	1.7	220		180						0.08 U	3	0.033	2.9	0.008 U	120
50-32-8	Benzo(a)pyrene	2.8	1.6	120		77						0.05 U	4.4	0.068	7.3	0.021	33 J
205-99-2	Benzo(b)fluoranthene	7.3	2.1	220		160						0.18	6.6	0.088	9.2	0.04	74
191-24-2	Benzo(g,h,i)perylene	2.1	0.82	37		43 J						0.08 U	4.4	0.068	6.1	0.02	36 U
207-08-9	Benzo(k)fluoranthene	2.4	0.82	48		55 J						0.1	4.1	0.049	5.7	0.02	24 J
85-68-7	Benzyl butyl phthalate																
92-52-4	Biphenyl																
111-91-1	Bis(2-chlorethoxy)methane																
111-44-4	Bis(2-chloroethyl)ether																
39638-32-9	Bis(2-chloroisopropyl) ether																
117-81-7	Bis(2-ethylhexyl)phthalate																
75-27-4	Bromodichloromethane																
74-83-9	Bromomethane																
7440-43-9	Cadmium																
86-74-8	Carbazole																
75-15-0	Carbon disulfide																
56-23-5	Carbon tetrachloride																
108-90-7	Chlorobenzene																
124-48-1	Chlorodibromomethane																
75-00-3	Chloroethane																
67-66-3	Chloroform																
74-87-3	Chloromethane																
7440-47-3	Chromium	100	12	33	8.4							1.2	22.7	11.6	13.7	7	
218-01-9	Chrysene	0.95 U	2.2	210		190						0.33	3.6	0.037	3	0.01 U	120
156-59-2	cis-1,2-Dichloroethylene																
10061-01-5	cis-1,3-Dichloropropene																

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	B1	B3	B-4	B5	DT	GA-Soil-001	GA-Soil-004	GA-Soil-005	GA-Soil-011	GA-Soil-033	GA-Soil-034	GA-Soil-035	GA-Soil-036	GA-Soil-037	GA-Soil-038	NL
	Sample Date	15-Aug-95	16-Aug-95	17-Aug-95	17-Aug-95	24-Aug-95	11-Aug-98	13-Aug-98	13-Aug-98	13-Aug-98	13-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	11-Aug-98	24-Aug-95
	Sample Depth (feet)	2.5-2.5	2-2	3-3	5-5	0-0.5	0-0.7	0-1	0-1	0-1	0-1	0.5-0.5	0.5-0.5	0.5-0.5	0.5-0.5	0.5-0.5	0-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	4.5	1.25 U	47	1.25 U												
110-82-7	Cyclohexane																
53-70-3	Dibenzo(a,h)anthracene	0.95 U	0.32 J	0.025 U		18 J						0.2 U	2 U	0.02 U	2 U	0.02 U	36 U
132-64-9	Dibenzofuran																
75-09-2	Dichloromethane																
84-66-2	Diethyl phthalate																
131-11-3	Dimethyl phthalate																
84-74-2	di-n-Butyl-phthalate																
117-84-0	di-n-Octyl-phthalate																
100-41-4	Ethylbenzene																
206-44-0	Fluoranthene	0.95 U	0.54	990		780						1.8	7.6	0.053	8	0.046	620
86-73-7	Fluorene	0.95 U	0.2 J	480		170						0.2 U	2 U	0.02 U	2 U	0.02 U	450
87-68-3	Hexachloro-1,3-butadiene																
118-74-1	Hexachlorobenzene																
77-47-4	Hexachlorocyclopentadiene																
67-72-1	Hexachloroethane																
193-39-5	Indeno(1,2,3-cd)pyrene	2.4	0.77	41		42 J						0.1 U	5.5	0.073	7.1	0.023	36 U
98-82-8	Isopropylbenzene																
7439-92-1	Lead																
136777-61-2	m,p-Xylenes																
541-73-1	m-Dichlorobenzene																
7439-97-6	Mercury																
79-20-9	Methyl acetate																
78-93-3	Methyl ethyl ketone																
108-10-1	Methyl isobutyl ketone																
591-78-6	Methyl n-butyl ketone																
108-88-3	Methylbenzene																
108-87-2	Methylcylohexane																
91-20-3	Naphthalene	0.95 U	0.19 J	530		62 J						1 U	10 U	0.1 U	10 U	0.1 U	250
98-95-3	Nitrobenzene																
621-64-7	n-Nitroso-di-n-Propylamine																
86-30-6	n-Nitrosodiphenylamine																
95-47-6	o-Xylene																
106-47-8	p-Chloroaniline																
87-86-5	Pentachlorophenol	0.95 U	0.11 J	32		50 J						0.003	0.094	0.028	0.7	0.006	240
85-01-8	Phenanthrene	0.95 U	0.19	2000		620						1.1	2.9	0.018	1.8	0.02	830
108-95-2	Phenol																
100-01-6	p-Nitroaniline																
129-00-0	Pyrene	0.95 U	0.56	740		490						1.1	7.3	0.051	8.7	0.042	400
7782-49-2	Selenium																
7440-22-4	Silver																
100-42-5	Styrene (monomer)																
1634-04-4	tert-Butyl methyl ether																
127-18-4	Tetrachloroethylene																
156-60-5	trans-1,2-Dichloroethene																
10061-02-6	trans-1,2-Dichloropropene																
75-25-2	Tribromomethane																
79-01-6	Trichloroethylene																
7440-62-2	Vanadium																
75-01-4	Vinyl chloride																
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.0831				0.0324											0.0125
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin					0.272											0.142
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.0153				0.00158											0.00148
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran					0.000267 U											0.00027 U
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin					0.000772											0.000209 U
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran					0.000158 U											0.00016 U
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin					0.00511											0.0015
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran					0.000185 U											0.000187 U
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin					0.00218											0.000943
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran					0.000213 U											0.000215 U
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin					0.000229 U											0.000231 U
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran																
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran																
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran					2.73E-05 U											2.75E-05 U
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin					2.18E-05 U											0.000022 U
39001-02-0	Octachlorodibenzofuran	0.000771				0.264											0.0795
3268-87-9	Octachlorodibenzo-p-dioxin	0.418				2.92											0.933

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	PA	PL	SL	SS001AA	SS001BA	SS001CA	SS001DA	SS002AA	SS002AC	SS002BA	SS003AA	SS003BA	SS003CA	SS003CB	SS003DA	SS004AA	SS004BA	SS004BB
	Sample Date	24-Aug-95	24-Aug-95	24-Aug-95	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	0-0.5	0-0.5	0-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane				0.00007 U	0.00007 U	0.000075 U	0.000065 U	0.000075 U	0.000075 U	0.00007 U	0.000075 U	0.0001 U	0.00007 U	0.00007 U	0.000065 U	0.00012 U	0.000085 U	0.0001 U
79-34-5	1,1,2,2-Tetrachloroethane				0.000036 U	3.85E-05 U	0.000041 U	3.55E-05 U	0.00004 U	3.95E-05 U	3.85E-05 U	3.95E-05 U	0.000055 U	0.000036 U	0.000038 U	0.000035 U	0.000065 U	0.000047 U	0.000055 U
79-00-5	1,1,2-Trichloroethane				0.000075 U	0.00008 U	0.000085 U	0.00007 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00011 U	0.000075 U	0.000075 U	0.00007 U	0.000125 U	0.000095 U	0.00011 U
75-34-3	1,1-Dichloroethane				3.45E-05 U	3.65E-05 U	0.000039 U	3.35E-05 U	3.85E-05 U	3.75E-05 U	3.65E-05 U	0.000038 U	0.000055 U	3.45E-05 U	0.000036 U	3.35E-05 U	0.000065 U	4.45E-05 U	0.000055 U
75-35-4	1,1-Dichloroethylene				0.000095 U	0.0001 U	0.00011 U	0.000095 U	0.000105 U	0.000105 U	0.0001 U	0.000105 U	0.000145 U	0.000095 U	0.0001 U	0.000095 U	0.000165 U	0.000125 U	0.00014 U
120-82-1	1,2,4-Trichlorobenzene				0.000085 U	0.00009 U	0.000095 U	0.00008 U	0.000095 UJ	0.00009 UJ	0.00009 U	0.00009 U	0.000125 U	0.000085 U	0.00009 U	0.00008 U	0.000145 U	0.00011 U	0.000125 U
96-12-8	1,2-Dibromo-3-chloropropane				0.00027 U	0.000285 U	0.000305 U	0.000265 U	0.0003 UJ	0.000295 UJ	0.000285 U	0.000295 U	0.00041 U	0.00027 U	0.00028 U	0.00026 U	0.000475 U	0.00035 U	0.0004 U
106-93-4	1,2-Dibromoethane				3.05E-05 U	3.25E-05 U	0.000035 U	0.00003 U	0.000034 U	3.35E-05 U	3.25E-05 U	3.35E-05 U	0.000047 U	3.05E-05 U	0.000032 U	0.00003 U	0.000055 U	0.00004 U	0.000046 U
95-50-1	1,2-Dichlorobenzene				4.25E-05 U	4.55E-05 U	4.85E-05 U	4.15E-05 U	4.75E-05 UJ	4.65E-05 UJ	4.55E-05 U	0.000047 U	0.000065 U	4.25E-05 U	4.45E-05 U	4.15E-05 U	0.000075 U	0.00006 U	0.000065 U
107-06-2	1,2-Dichloroethane				0.000055 U	0.00006 U	0.000065 U	0.000055 U	0.000065 U	0.00006 U	0.00006 U	0.00006 U	0.000085 U	0.000055 U	0.00006 U	0.000055 U	0.0001 U	0.000075 U	0.000085 U
78-87-5	1,2-Dichloropropane				2.95E-05 U	3.15E-05 U	3.35E-05 U	0.000029 U	0.000033 U	3.25E-05 U	3.15E-05 U	3.25E-05 U	0.000045 U	2.95E-05 U	0.000031 U	0.000029 U	0.000055 U	3.85E-05 U	0.000044 U
106-46-7	1,4-Dichlorobenzene				4.75E-05 U	0.000055 U	0.000055 U	4.65E-05 U	0.000055 UJ	0.000055 UJ	0.000055 U	0.000055 U	0.000075 U	4.75E-05 U	4.95E-05 U	4.65E-05 U	0.000085 U	0.000065 U	0.000075 U
95-95-4	2,4,5-Trichlorophenol				0.0075 U	0.007 U	0.0085 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.0085 U	0.0075 U	0.007 U	0.007 U	0.0085 U	0.0085 U	0.009 U
88-06-2	2,4,6-Trichlorophenol				0.02 U	0.0195 U	0.0225 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.0215 U	0.0225 U	0.02 U	0.0195 U	0.0195 U	0.0235 U	0.023 U	0.024 U
120-83-2	2,4-Dichlorophenol				0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 U	0.011 U	0.0115 U
105-67-9	2,4-Dimethylphenol				0.0105 U	0.0105 U	0.012 U	0.0105 U	0.0105 U	0.011 U	0.0105 U	0.0115 U	0.012 U	0.0105 U	0.0105 U	0.0105 U	0.0125 U	0.0125 U	0.0125 U
51-28-5	2,4-Dinitrophenol				0.007 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0065 U	0.0065 U	0.008 U	0.008 U	0.008 U
121-14-2	2,4-Dinitrotoluene				0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0065 U
606-20-2	2,6-Dinitrotoluene				0.02 U	0.0195 U	0.0225 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.0215 U	0.0225 U	0.02 U	0.0195 U	0.0195 U	0.0235 U	0.023 U	0.024 U
91-58-7	2-Chloronaphthalene				0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.0105 U	0.0105 U
95-57-8	2-Chlorophenol				0.01 U	0.01 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.012 U	0.0115 U	0.012 U
91-57-6	2-Methylnaphthalene	120 J	10.5 U	9 U	0.0085 U	0.0085 U	0.00095 U	0.0008 U	0.042 J	0.044 J	0.052 J	0.009 U	0.085	0.038	0.049	0.0045	0.076 J	0.067 J	0.099 J
95-48-7	2-Methylphenol (o-cresol)				0.007 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0065 U	0.0065 U	0.008 U	0.008 U	0.008 U
88-74-4	2-Nitroaniline				0.012 UJ	0.012 UJ	0.014 U	0.012 U	0.0125 UJ	0.0125 UJ	0.012 U	0.0135 U	0.014 U	0.012 U	0.012 U	0.012 U	0.0145 UJ	0.014 UJ	0.0145 UJ
88-75-5	2-Nitrophenol				0.008 U	0.008 U	0.009 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.009 U	0.008 U	0.008 U	0.0075 U	0.009 U	0.009 U	0.0095 U
91-94-1	3,3'-Dichlorobenzidine				0.0185 U	0.0185 U	0.021 U	0.0185 U	0.019 UJ	0.019 UJ	0.019 U	0.0205 U	0.0215 U	0.0185 U	0.0185 U	0.0185 U	0.022 UJ	0.022 UJ	0.0225 UJ
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one				0.0075 U	0.007 U	0.0085 U	0.007 U	0.0075 UJ	0.0075 UJ	0.0075 U	0.008 U	0.0085 U	0.0075 U	0.007 U	0.007 U	0.0085 UJ	0.0085 UJ	0.009 UJ
99-09-2	3-Nitroaniline				0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 U	0.011 U	0.0115 U
534-52-1	4,6-Dinitro-2-Methylphenol				0.0055 U	0.0055 U	0.006 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.0055 U	0.005 U	0.0065 U	0.006 U	0.0065 U
101-55-3	4-Bromophenyl phenyl ether				0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0065 U
59-50-7	4-Chloro-3-methylphenol				0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.0105 U	0.0105 U
7005-72-3	4-Chlorophenyl phenyl ether				0.012 U	0.012 U	0.014 U	0.012 U	0.0125 U	0.0125 U	0.012 U	0.0135 U	0.014 U	0.012 U	0.012 U	0.012 U	0.0145 U	0.014 U	0.0145 U
106-44-5	4-Methylphenol (m/p-cresol)				0.0145 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.0155 U	0.0165 U	0.0145 U	0.014 U	0.014 U	0.017 U	0.017 U	0.0175 U
100-02-7	4-Nitrophenol				0.0095 UJ	0.0095 UJ	0.0105 U	0.0095 U	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 UJ	0.011 UJ	0.0115 UJ
83-32-9	Acenaphthene	30 J	2.05 U	1.15	0.015 U	0.015 U	0.0017 U	0.00145 U	0.03 U	0.03 U	0.0295 U	0.0165 U	0.062 J	0.015 U	0.015 U	0.0041 J	0.035 U	0.039 J	0.0355 U
208-96-8	Acenaphthylene	39 U	0.32 J	0.51 J	0.094	0.0145 U	0.00165 U	0.0014 U	0.35	0.37	0.48	0.36	0.91	0.075 J	0.051 J	0.016	0.64	0.46 J	0.72 J
67-64-1	Acetone				0.0014 U	0.00145 U	0.00155 U	0.00135 U	0.00155 U	0.0015 U	0.04 J	0.0015 U	0.0021 U	0.0014 U	0.00145 U	0.00135 U	0.00245 U	0.0018 U	0.00205 U
120-12-7	Anthracene	64 J	0.91 J	3.1 J	0.13	0.015 J	0.0011 J	0.000325 U	0.78	0.86	1.1	0.3	1.8	0.2 J	0.11 J	0.023	0.76	0.52 J	0.84 J
7440-36-0	Antimony				0.46 J	0.37 J	0.195 U	0.18 U	0.185 UJ	0.39 J	0.37 J	0.195 UJ	0.205 UJ	0.17 UJ	0.18 UJ	0.17 UJ	0.215 UJ	0.215 UJ	0.215 UJ
7440-38-2	Arsenic				20	99	100	8.6	4.1 J	5.9 J	6.9	6 J	22 J	19 J	14 J	5.4 J	5.8	4.8	5.1
7440-39-3	Barium				13	5.6	5.7	12	11 J	15 J	16	42	51	12	11	8.1	30	33	31
71-43-2	Benzene				0.000215 U	0.00023 U	0.000245 U	0.00021 U	0.00024 U	0.000235 U	0.00023 U	0.000235 U	0.000325 U	0.000215 U	0.000225 U	0.00021 U	0.000375 U	0.00028 U	0.00032 U
56-55-3	Benzo(a)anthracene	98	3.1 J	11	0.89	0.032 J	0.0031 J	0.00085 J	0.68	0.71	0.92	0.18	2.8	0.41 J	0.15 J	0.02	0.73	0.71 J	1.1 J
50-32-8	Benzo(a)pyrene	28 J	4.2	7.1	0.77	0.041	0.0033 J	0.0006 U	1	1.1	1.4	0.31	6.1	0.36 J	0.2 J	0.037	1.2	0.93 J	1.4 J
205-99-2	Benzo(b)fluoranthene	90	10	16	1	0.059	0.0055	0.0018 J	1.8	1.9	2.5	0.47	12	0.63 J	0.36 J	0.075	1.9	1.5 J	2.2 J
191-24-2	Benzo(g,h,i)perylene	16	3.7 J	5.7	0.43	0.033 J	0.003 J	0.00099 J	0.73	0.77	0.95	0.6	2.9	0.21	0.16	0.049	1.2	0.88 J	1.4 J
207-08-9	Benzo(k)fluoranthene	30 J	2.6 J	4.1	0.92	0.052	0.0047	0.0014 J	1.3	1.4	1.7	0.36	5.9	0.52 J	0.25 J	0.033	1.5	1.1 J	1.7 J
85-68-7	Benzyl butyl phthalate				0.01 U	0.01 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.012 U	0.0115 U	0.012 U
92-52-4	Biphenyl				0.085 U	0.085 U	0.095 U	0.08 U	0.085 U	0.085 U	0.085 U	0.09 U	0.095 U	0.085 U	0.085 U	0.08 U	0.1 U	0.1 U	0.1 U
111-91-1	Bis(2-chlorethoxy)methane				0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 U	0.011 U	0.0115 U
111-44-4	Bis(2-chloroethyl)ether				0.0085 U	0.0085 U	0.0095 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0095 U	0.0085 U	0.0085 U	0.008 U	0.01 U	0.01 U	0.01 U
39638-32-9	Bis(2-chloroisopropyl) ether				0.0115 UJ	0.0115 UJ	0.013 UJ	0.0115 UJ	0.012 UJ	0.012 UJ	0.0115 UJ	0.0125 U	0.0135 U	0.0115 U	0.0115 U	0.0115 U	0.0135 UJ	0.0135 UJ	0.014 UJ
117-81-7	Bis(2-ethylhexyl)phthalate				0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.02 J	0.029 J	0.01 U	0.03 J	0.009 U	0.009 U	0.009 U	0.0105 U	0.0105 U	0.0105 U
75-27-4	Bromodichloromethane				0.00016 U	0.00017 U	0.00018 U	0.000155 U	0.00018 U	0.000175 U	0.00017 U	0.000175 U	0.000245 U	0.00016 U	0.000165 U	0.000155 U	0.00028 U	0.000205 U	0.00024 U
74-83-9	Bromomethane				0.000175 U	0.000185 U	0.0002 U	0.00017 U	0.000195 UJ	0.00019 UJ	0.00019 UJ	0.000195 UJ	0.00027 UJ	0.000175 UJ	0.000185 UJ	0.00017 UJ	0.00031 UJ	0.00023 UJ	0.000265 UJ
7440-43-9	Cadmium				0.145 U	0.15 U	0.17 U	0.155 U	0.16 U	0.16 U	0.15 U	0.17 U	0.175 U	0.145 U	0.15 U	0.145 U	0.185 U	0.18 U	0.185 U
86-74-8	Carbazole				0.032 J	0.009 U	0.01 U	0.009 U	0.075 J	0.08 J	0.13 J	0.03 J	0.54	0.042 J	0.034 J	0.009 U	0.044 J	0.043 J	0.05 J
75-15-0	Carbon disulfide				0.0009 U	0.00095 U	0.001 U	0.00085 U	0.001 U	0.00095 U	0.00095 U	0.001 U	0.00135 U	0.0009 U	0.00095 U	0.00085 U	0.00155 U	0.00115 U	0.00135 U
56-23-5	Carbon tetrachloride				0.00019 U	0.000205 U	0.00022 U	0.00019 U	0.000215 U	0.00021 U	0.000205 U	0.00021 U	0.000295 U	0.000195 U	0.0002 U	0.00019 U	0.00034 U	0.00025 U	0.000285 U
108-90-7	Chlorobenzene				0.00022 U	0.000235 U	0.00025 U	0.000215 U	0.000245 U	0.00024 U	0.000235 U	0.00024 U	0.000335 U	0.00022 U	0.00023 U	0.000215 U	0.000385 U	0.000285 U	0.00033 U
124-48-1	Chlorodibromomethane				0.00014 U	0.000145 U	0.000155 U	0.000135 U	0.000155 U	0.00015 U	0.000145 U	0.00015 U	0.00021 U	0.00014 U	0.000145 U	0.000135 U	0.000245 U	0.00018 U	0.000205 U
75-00-3	Chloroethane				0.0002 U	0.00021 U	0.000225 U	0.000195 U	0.00022 U	0.000215 U	0.00021 U	0.00022 U	0.0003 U	0.0002 U	0.000205 U	0.000195 U	0.00035 U	0.000255 U	0.000295 U
67-66-3	Chloroform				0.000185 U	0.0002 U	0.000215 U	0.000185 U	0.00021 U	0.000205 U	0.0002 U	0.000205 U	0.000285 U	0.000185 U	0.000195 U	0.000185 U	0.00033 U	0.000245 U	0.00028 U
74-87-3	Chloromethane				0.000245 U	0.00026 U	0.00028 U	0.00024 U	0.000275 U	0.00027 U	0.000265 U	0.00027 U	0.000375 U	0.000245 U	0.00026 U	0.00024 U	0.000435 U	0.00032 U	0.00037 U
7440-47-3	Chromium				6.4	2.8	2.5	7.3	4.5 J	6.7 J	6.4	13 J	10 J	3.4 J	3.6 J	3.9 J	16	14	15
218-01-9	Chrysene	120	5.4	13	1.2	0.046	0.0045	0.0015 J	1	1.1	1.3	0.24	4.9	0.59 J	0.25 J	0.03	0.9	0.88 J	1.2 J
156-59-2	cis-1,2-Dichloroethylene				0.000145 U	0.000155 U	0.000165 U	0.00014 U	0.00016 U	0.000155 U	0.000155 U	0.00016 U	0.00022 U	0.000145 U	0.00015 U	0.00014 U	0.00025 U	0.000185 U	0.000215 U
10061-01-5	cis-1,3-Dichloropropene				0.00016 U	0.00017 U	0.00018 U	0.000155 U	0.00018 U	0.000175 U	0.00017 U	0.000175 U	0.000245 U	0.00016 U	0.000165 U	0.000155 U	0.00028 U	0.000205 U	0.00024 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	PA	PL	SL	SS001AA	SS001BA	SS001CA	SS001DA	SS002AA	SS002AC	SS002BA	SS003AA	SS003BA	SS003CA	SS003CB	SS003DA	SS004AA	SS004BA	SS004BB
	Sample Date	24-Aug-95	24-Aug-95	24-Aug-95	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	0-0.5	0-0.5	0-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper				6.8	1.6	0.175 U	0.38 J	5.1 J	7.3 J	7.6	9.1 J	13 J	2.1 J	2.1 J	1.1 J	11	9.1	9.8
110-82-7	Cyclohexane				0.00021 U	0.00022 U	0.000235 U	0.000205 U	0.00023 U	0.00023 U	0.00022 U	0.00023 U	0.00069 J	0.00021 U	0.00022 U	0.000205 U	0.00037 U	0.00027 U	0.00031 U
53-70-3	Dibenzo(a,h)anthracene	39 U	1.4 J	1.6 J	0.15	0.0083 J	0.00032 U	0.000275 U	0.23	0.25	0.32	0.11	1.2	0.074 J	0.043 J	0.013	0.31	0.22 J	0.35 J
132-64-9	Dibenzofuran				0.0075 U	0.007 U	0.0085 U	0.007 U	0.02 J	0.023 J	0.03 J	0.008 U	0.21 J	0.022 J	0.024 J	0.007 U	0.048 J	0.053 J	0.089 J
75-09-2	Dichloromethane				0.000215 U	0.00023 U	0.000245 U	0.00021 U	0.00024 U	0.000235 U	0.00023 U	0.000235 U	0.000325 U	0.000215 U	0.000225 U	0.00021 U	0.000375 U	0.00028 U	0.00032 U
84-66-2	Diethyl phthalate				0.007 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0065 U	0.0065 U	0.008 U	0.008 U	0.008 U
131-11-3	Dimethyl phthalate				0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0065 U
84-74-2	di-n-Butyl-phthalate				0.0335 U	0.033 U	0.038 U	0.0325 U	0.034 U	0.034 U	0.0335 U	0.0365 U	0.0385 U	0.0335 U	0.033 U	0.0325 U	0.0395 U	0.039 U	0.04 U
117-84-0	di-n-Octyl-phthalate				0.0085 U	0.0085 U	0.0095 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0095 U	0.0085 U	0.0085 U	0.008 U	0.01 U	0.01 U	0.01 U
100-41-4	Ethylbenzene				0.00023 U	0.000245 U	0.00026 U	0.000225 U	0.000255 U	0.00025 U	0.000245 U	0.000255 U	0.00035 U	0.00023 U	0.00024 U	0.000225 U	0.000405 U	0.0003 U	0.000345 U
206-44-0	Fluoranthene	600	6.4	28	1.1	0.06	0.0059	0.000315 U	0.7	0.73	0.91	0.22	6.5	0.94 J	0.34 J	0.036	1.1	0.94 J	1.7 J
86-73-7	Fluorene	34 J	2.05 U	1.05	0.0085 U	0.0085 U	0.00095 U	0.0008 U	0.0165 U	0.017 U	0.038 J	0.022 J	0.089	0.023 J	0.0085 U	0.0065	0.055 J	0.029 J	0.066 J
87-68-3	Hexachloro-1,3-butadiene				0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 U	0.011 U	0.0115 U
118-74-1	Hexachlorobenzene				0.00455 U	0.0045 U	0.0055 U	0.00445 U	0.0046 U	0.00465 U	0.00455 U	0.00495 U	0.0055 U	0.00455 U	0.0045 U	0.00445 U	0.0055 U	0.0055 U	0.0055 U
77-47-4	Hexachlorocyclopentadiene				0.006 U	0.006 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.006 U	0.007 U	0.007 U	0.006 U	0.006 U	0.006 U	0.0075 U	0.007 U	0.0075 U
67-72-1	Hexachloroethane				0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.011 U	0.011 U	0.0115 U
193-39-5	Indeno(1,2,3-cd)pyrene	17 J	3.5 J	4.8	0.53	0.035 J	0.0034 J	0.0011 J	0.96	1	1.3	0.43	5.2	0.25 J	0.18 J	0.039	1.4	0.99 J	1.6 J
98-82-8	Isopropylbenzene				0.00025 U	0.00027 U	0.000285 U	0.000245 U	0.00028 UJ	0.000275 UJ	0.00027 U	0.00028 U	0.000385 U	0.000255 U	0.000265 U	0.000245 U	0.000445 U	0.000325 U	0.000375 U
7439-92-1	Lead				35 J	12 J	2.6 J	6.8 J	18 J	25 J	27	6.9 J	13 J	6.3 J	5.1 J	3.1 J	14	13	14
136777-61-2	m,p-Xylenes				0.000475 U	0.00055 U	0.00055 U	0.000465 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00075 U	0.000475 U	0.000495 U	0.000465 U	0.00085 U	0.00065 U	0.00075 U
541-73-1	m-Dichlorobenzene				2.75E-05 U	0.000029 U	0.000031 U	0.000027 U	3.05E-05 UJ	0.00003 UJ	0.000029 U	0.00003 U	0.000042 U	2.75E-05 U	2.85E-05 U	2.65E-05 U	4.85E-05 U	3.55E-05 U	0.000041 U
7439-97-6	Mercury				0.12	0.029	0.026 J	0.027	0.41	0.32	0.46	0.039 J	0.25 J	0.024 J	0.022 J	0.015 J	0.2	0.2	0.27
79-20-9	Methyl acetate				0.000105 U	0.00011 U	0.00012 U	0.000105 U	0.0021 J	0.000115 U	0.00011 U	0.000115 U	0.00016 U	0.000105 U	0.00011 U	0.000105 U	0.000185 U	0.000135 U	0.000155 U
78-93-3	Methyl ethyl ketone				0.0006 U	0.00065 U	0.0007 U	0.0006 U	0.0007 U	0.0007 U	0.0022 J	0.0007 U	0.0024 J	0.0006 U	0.00065 U	0.0006 U	0.0011 U	0.0008 U	0.0009 U
108-10-1	Methyl isobutyl ketone				0.000385 U	0.000415 U	0.00044 U	0.00038 U	0.00043 U	0.000425 U	0.000415 U	0.000425 U	0.0006 U	0.00039 U	0.000405 U	0.00038 U	0.0007 U	0.00055 U	0.0006 U
591-78-6	Methyl n-butyl ketone				0.00055 U	0.0006 U	0.00065 U	0.00055 U	0.00065 U	0.0006 U	0.0006 U	0.0006 UJ	0.00085 UJ	0.00055 UJ	0.0006 UJ	0.00055 UJ	0.001 U	0.00075 U	0.00085 U
108-88-3	Methylbenzene				0.00023 U	0.000245 U	0.00026 U	0.000225 U	0.000255 U	0.00025 U	0.00062 J	0.000255 U	0.0029 J	0.00023 U	0.00024 U	0.000225 U	0.000405 U	0.0003 U	0.000345 U
108-87-2	Methylcylohexane				0.00024 U	0.000255 U	0.000275 U	0.000235 U	0.00027 U	0.000265 U	0.000255 UJ	0.000265 U	0.0015 J	0.00024 U	0.000255 U	0.000235 U	0.000425 U	0.000315 U	0.00036 UJ
91-20-3	Naphthalene	39 U	2.05 U	0.35 J	0.0028 U	0.0028 U	0.00032 U	0.000275 U	0.07 J	0.075 J	0.092	0.018 J	0.15	0.038	0.042	0.0061	0.079 J	0.07 J	0.1 J
98-95-3	Nitrobenzene				0.011 UJ	0.011 UJ	0.0125 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.012 U	0.0125 U	0.011 U	0.011 U	0.011 U	0.013 U	0.013 U	0.0135 U
621-64-7	n-Nitroso-di-n-Propylamine				0.01 U	0.01 U	0.0115 U	0.01 U	0.01 UJ	0.01 UJ	0.01 U	0.011 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.012 UJ	0.0115 UJ	0.012 UJ
86-30-6	n-Nitrosodiphenylamine				0.006 U	0.006 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.006 U	0.007 U	0.007 U	0.006 U	0.006 U	0.006 U	0.0075 U	0.007 U	0.0075 U
95-47-6	o-Xylene				0.00022 U	0.000235 U	0.00025 U	0.000215 U	0.000245 U	0.00024 U	0.000235 U	0.00024 U	0.000335 U	0.00022 U	0.00023 U	0.000215 U	0.000385 U	0.000285 U	0.00033 U
106-47-8	p-Chloroaniline				0.0145 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.0155 UJ	0.0165 U	0.0145 UJ	0.014 UJ	0.014 UJ	0.017 U	0.017 U	0.0175 U
87-86-5	Pentachlorophenol	39 U	2.05 U	1.75 U	0.12 J	0.11 J	0.000435 U	0.000375 U	0.15	0.17 J	0.21 J	0.15 J	0.0044 UJ	0.00385 UJ	0.0038 UJ	0.0025 J	0.056 J	0.051 J	0.054 J
85-01-8	Phenanthrene	550	0.59 J	6.6	0.2	0.018 U	0.00205 U	0.0018 U	0.14 J	0.15 J	0.19	0.059 J	0.83	0.2 J	0.095 J	0.028	0.23	0.17 J	0.26 J
108-95-2	Phenol				0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.0105 U	0.0105 U
100-01-6	p-Nitroaniline				0.007 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 UJ	0.007 U	0.0065 U	0.0065 U	0.008 U	0.008 U	0.008 U
129-00-0	Pyrene	370	8.7	27	1	0.056	0.0054	0.0021 J	1.1	1.1	1.4	0.28	7.1	1.1 J	0.37 J	0.04	1.1	1.1 J	1.6 J
7782-49-2	Selenium				0.425 U	0.435 U	0.485 U	0.445 U	0.46 U	0.46 U	0.425 U	0.485 U	0.5 U	0.42 U	0.44 U	0.415 U	0.55 U	0.55 U	0.55 U
7440-22-4	Silver				0.195 U	0.195 U	0.22 U	0.2 U	0.205 U	0.21 U	0.195 U	0.22 U	0.23 U	0.19 U	0.2 U	0.19 U	0.24 U	0.24 U	0.24 U
100-42-5	Styrene (monomer)				0.000235 U	0.00025 U	0.00027 U	0.00023 U	0.00026 U	0.000255 U	0.00025 U	0.00026 U	0.00036 U	0.000235 U	0.000245 U	0.00023 U	0.000415 U	0.000305 U	0.000355 U
1634-04-4	tert-Butyl methyl ether				0.000175 U	0.000185 U	0.0002 U	0.00017 U	0.000195 U	0.00019 U	0.00019 U	0.000195 U	0.00027 U	0.000175 U	0.000185 U	0.00017 U	0.00031 U	0.00023 U	0.000265 U
127-18-4	Tetrachloroethylene				0.00022 U	0.000235 U	0.00025 U	0.000215 U	0.000245 U	0.00024 U	0.000235 U	0.00024 U	0.000335 U	0.00022 U	0.00023 U	0.000215 U	0.000385 U	0.000285 U	0.00033 U
156-60-5	trans-1,2-Dichloroethene				0.00021 U	0.00022 U	0.000235 U	0.000205 U	0.00023 U	0.00023 U	0.00022 U	0.00023 U	0.00032 U	0.00021 U	0.00022 U	0.000205 U	0.00037 U	0.00027 U	0.00031 U
10061-02-6	trans-1,2-Dichloropropene				0.000165 U	0.000175 U	0.00019 U	0.00016 U	0.000185 U	0.00018 U	0.000175 U	0.00018 U	0.00025 U	0.000165 U	0.000175 U	0.00016 U	0.00029 U	0.000215 U	0.000245 U
75-25-2	Tribromomethane				0.000215 U	0.00023 U	0.000245 U	0.00021 U	0.00024 U	0.000235 U	0.00023 U	0.000235 U	0.000325 U	0.000215 U	0.000225 U	0.00021 U	0.000375 U	0.00028 U	0.00032 U
79-01-6	Trichloroethylene				0.00022 U	0.000235 U	0.00025 U	0.000215 U	0.000245 U	0.00024 U	0.000235 U	0.00024 U	0.000335 U	0.00022 U	0.00023 U	0.000215 U	0.000385 U	0.000285 U	0.00033 U
7440-62-2	Vanadium				4.2	1.7	0.5 UJ	4	1.6 J	2.3 J	2.5	18	9.6	2.4 J	3.3 J	1.7	7.5	7.8	9
75-01-4	Vinyl chloride				0.000135 U	0.00014 U	0.00015 U	0.00013 U	0.000145 U	0.000145 U	0.00014 U	0.000145 U	0.0002 U	0.000135 U	0.00014 U	0.00013 U	0.000235 U	0.00017 U	0.0002 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.0661	3.7E-05 U	0.000756	9.58E-05	1.75E-05	3.27E-06 J	4.17E-06 J	0.000552	0.000516	0.000252	0.000866	0.000674	2.27E-05	1.43E-07 U	2.91E-05			
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.45	0.0115	0.0123	0.000747	0.000192	2.61E-05	2.89E-05	0.00555	0.00533	0.002877 J	0.010367	0.00558	0.000223	0.000147	0.000213			
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.00285	0.00008 U	7.15E-05 U	6.07E-06	1.28E-06 J	2.05E-07 J	2.45E-07 J	3.33E-05	0.000032	1.81E-05	5.14E-05	0.000054	2.92E-06 J	1.22E-06 J	1.03E-06 J			
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.00014 U	0.000281 U	0.00025 U	2.74E-06 J	1.43E-06 J	5.8E-08 U	3.15E-08 U	1.12E-05	1.05E-05	5.38E-06 J	1.37E-05	1.85E-05	5.38E-07 J	1.43E-06 J	5.41E-07 J			
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00146	0.000218 U	0.000194 U	6.18E-06	1.06E-06 J	2.02E-07 J	5.1E-08 U	0.000026	2.55E-05	1E-05	3.73E-05	2.63E-05	1.07E-06 J	6.59E-07 J	1.01E-06 J			
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.00011 U	0.000166 U	0.000148 U	2.38E-06 J	7.5E-07 J	3.3E-08 U	3.6E-08 U	6.97E-06	5.93E-06	2.67E-06 J	6.57E-06	0.00001	1.62E-07 U	7.43E-07 J	3.77E-07 J			
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.011	0.00028	0.000118 U	1.67E-05	4.78E-06 J	6.84E-07 J	1.06E-06 J	9.47E-05	9.62E-05	5.12E-05	0.000164	0.000118	4.1E-06 J	2.88E-06 J	3.75E-06 J			
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	0.000141 U	0.000195 U	0.000174 U	5.15E-08 U	9.5E-08 U	4.25E-08 U	4.55E-08 U	2.59E-06	2.33E-06 J	1.61E-07 U	2.15E-07 U	3.56E-06	1.74E-07 U	7.49E-07 J	6.85E-08 U			
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.00892	0.000377	0.000112 U	1.6E-05	3.76E-06 J	6.48E-07 J	5.17E-07 J	4.43E-05	4.19E-05	1.23E-05	0.000159	4.36E-05	4.31E-06 J	1.83E-06 J	2.3E-06 J			
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	0.000046 U	0.000223 U	0.000199 U	3.12E-07 J	3.7E-07 J	1.75E-08 U	1.25E-08 U	9.25E-07 J	8.2E-07 J	5.45E-07 J	2.63E-07 U	2.35E-06 J	2.55E-08 U	5.98E-07 J	2.4E-07 J			
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	6.55E-05 U	0.00024 U	0.000214 U	2.01E-06 J	5.48E-07 J	2E-08 U	2.2E-08 U	8.01E-06	7.92E-06	4.29E-06 J	5.99E-06 J	6.25E-06	1.52E-07 U	4.5E-08 U	3.31E-07 J			
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran				1.69E-06 J	7.54E-07 J	3.25E-08 U	3.65E-08 U	1.16E-05	1.08E-05	2.36E-06 J	8.11E-06 J	2.03E-05	6.7E-08 U	2.86E-07 U	4.22E-07 J			
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran				6.8E-07 J	7.1E-07 J	1.85E-08 U	1.4E-08 U	2.76E-06	2.65E-06	8.12E-07 J	7.13E-07 J	6.08E-06	1.6E-07 J	4.66E-07 J	2.29E-07 J			
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	3.62E-05 U	2.86E-05 U	2.55E-05 U	4.33E-07 U	5.94E-07 U	1.9E-08 U	2.65E-08 U	1.3E-06	1.35E-06	5.35E-07 U	2.75E-07 U	1.65E-06	2.2E-08 U	5.09E-07 J	1.5E-08 U			
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.000044 U	2.29E-05 U	2.04E-05 U	9.9E-08 U	3.4E-08 U	1.15E-08 U	1.3E-08 U	1.08E-06	1.11E-06	3.2E-07 U	3.94E-07 J	U	2.2E-08 U	2.25E-08 U	1.4E-08 U			
39001-02-0	Octachlorodibenzofuran	0.000281 U	0.00551	0.00632	0.000459	8.22E-05	1.4E-05	2.32E-05	0.00321	0.00307	0.001969	0.005568	0.00373	0.00012	7.93E-05	0.000113			
3268-87-9	Octachlorodibenzo-p-dioxin	8.2	0.108	0.118	0.006957 J	0.001731	0.00024	0.000317	0.053	0.0519	0.028365 J	0.087059 J	0.0564	0.002062	0.001403	0.00193 J			

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS005AA	SS005BA	SS005CA	SS005DA	SS006AA	SS006BA	SS007AA	SS007BA	SS007BC	SS007CA	SS007DA	SS007DB	SS008AA	SS008BA	SS009AA	SS009BA	SS010AA	SS010AB
	Sample Date	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	05-Dec-06	05-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.00007 U	0.00007 U	0.00008 U	0.000075 U	0.000065 U	0.00007 U	0.00014 U	0.00012 U	0.00012 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U	0.000085 U	0.000085 U
79-34-5	1,1,2,2-Tetrachloroethane	3.65E-05 U	0.000037 U	4.35E-05 U	0.000039 U	3.55E-05 U	0.000037 U	0.000075 U	0.000065 U	0.000065 U	3.45E-05 U	0.000034 U	0.000034 U	0.000035 U	0.000035 U	0.000036 U	3.55E-05 U	0.000045 UJ	4.65E-05 U
79-00-5	1,1,2-Trichloroethane	0.000075 U	0.000075 U	0.00009 U	0.00008 U	0.00007 U	0.000075 U	0.00015 U	0.00013 U	0.000125 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.00007 U	0.00009 UJ	0.000095 U
75-34-3	1,1-Dichloroethane	3.45E-05 U	3.55E-05 U	4.15E-05 U	3.75E-05 U	0.000034 U	3.55E-05 U	0.000075 U	0.000065 U	0.000065 U	0.000033 U	3.25E-05 U	3.25E-05 U	3.35E-05 U	3.35E-05 U	3.45E-05 U	0.000034 U	0.000043 U	4.45E-05 U
75-35-4	1,1-Dichloroethylene	0.000095 U	0.000095 U	0.000115 U	0.000105 U	0.000095 U	0.0001 U	0.000195 U	0.00017 U	0.000165 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.000095 U	0.000095 U	0.00012 U	0.00012 U
120-82-1	1,2,4-Trichlorobenzene	0.000085 U	0.000085 U	0.0001 U	0.00009 U	0.000085 U	0.000085 U	0.00017 U	0.00015 U	0.000145 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.000085 U	0.000085 U	0.000105 UJ	0.00011 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.00027 U	0.000275 U	0.000325 U	0.00029 U	0.000265 U	0.000275 U	0.0006 U	0.000485 U	0.000475 U	0.000255 UJ	0.000255 UJ	0.000255 UJ	0.00026 U	0.00026 U	0.00027 U	0.000265 U	0.000335 UJ	0.000345 UJ
106-93-4	1,2-Dibromoethane	0.000031 U	3.15E-05 U	0.000037 U	0.000033 U	3.05E-05 U	3.15E-05 U	0.000065 U	0.000055 U	0.000055 U	2.95E-05 U	0.000029 U	0.000029 U	2.95E-05 U	2.95E-05 U	0.000031 U	3.05E-05 U	0.000038 UJ	3.95E-05 U
95-50-1	1,2-Dichlorobenzene	0.000043 U	4.35E-05 U	0.000055 U	0.000046 U	0.000042 U	0.000044 U	0.00009 U	0.00008 U	0.000075 U	0.000041 U	4.05E-05 U	0.00004 U	0.000041 U	0.000041 U	4.25E-05 U	0.000042 U	0.000055 UJ	0.000055 UJ
107-06-2	1,2-Dichloroethane	0.000055 U	0.00006 U	0.00007 U	0.00006 U	0.000055 U	0.00006 U	0.000115 U	0.0001 U	0.0001 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00007 U	0.000075 U
78-87-5	1,2-Dichloropropane	0.00003 U	3.05E-05 U	3.55E-05 U	0.000032 U	2.95E-05 U	3.05E-05 U	0.000065 U	0.000055 U	0.000055 U	2.85E-05 U	0.000028 U	0.000028 U	2.85E-05 U	2.85E-05 U	2.95E-05 U	0.000029 U	0.000037 U	0.000038 U
106-46-7	1,4-Dichlorobenzene	0.000048 U	4.85E-05 U	0.00006 U	0.000055 U	0.000047 U	0.000049 U	0.0001 U	0.00009 U	0.000085 U	4.55E-05 U	0.000045 U	0.000045 U	0.000046 U	0.000046 U	4.75E-05 U	0.000047 U	0.00006 UJ	0.000065 UJ
95-95-4	2,4,5-Trichlorophenol	0.0075 U	0.0075 U	0.007 U	0.008 U	0.007 U	0.007 U	0.009 U	0.0085 U	0.0085 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.0075 U
88-06-2	2,4,6-Trichlorophenol	0.02 U	0.02 U	0.0195 U	0.0215 U	0.0195 U	0.0195 U	0.0245 U	0.0225 U	0.0235 U	0.019 U	0.019 U	0.0185 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.0205 U	0.0205 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.009 U	0.0115 U	0.011 U	0.0115 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.01 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.032 J	0.0105 U	0.0115 U	0.0105 U	0.0105 U	0.013 U	0.012 U	0.0125 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.011 U	0.011 U
51-28-5	2,4-Dinitrophenol	0.007 U	0.007 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.007 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.02 U	0.02 U	0.0195 U	0.0215 U	0.0195 U	0.0195 U	0.0245 U	0.0225 U	0.0235 U	0.019 U	0.019 U	0.0185 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.0205 U	0.0205 U
91-58-7	2-Chloronaphthalene	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.011 U	0.01 U	0.0105 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.0125 U	0.0115 U	0.012 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0105 U	0.0105 U
91-57-6	2-Methylnaphthalene	0.03 J	0.66	0.11	0.013	0.099	0.15	0.0105 U	0.044 J	0.052 J	0.0008 U	0.0008 U	0.0008 U	0.016 U	0.008 U	0.0085 U	0.0085 U	0.18	0.17
95-48-7	2-Methylphenol (o-cresol)	0.007 U	0.007 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U
88-74-4	2-Nitroaniline	0.0125 U	0.0125 U	0.012 U	0.013 U	0.012 UJ	0.012 UJ	0.015 UJ	0.014 UJ	0.0145 UJ	0.0115 U	0.0115 U	0.0115 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.0125 U	0.0125 U
88-75-5	2-Nitrophenol	0.008 U	0.008 U	0.008 U	0.0085 U	0.0075 U	0.0075 U	0.0095 U	0.009 U	0.0095 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.019 U	0.019 U	0.0185 U	0.02 U	0.0185 UJ	0.018 UJ	0.023 U	0.0215 U	0.0225 U	0.018 U	0.018 U	0.0175 U	0.018 UJ	0.018 UJ	0.019 UJ	0.0185 UJ	0.0195 U	0.019 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.0075 U	0.0075 U	0.007 U	0.008 U	0.007 UJ	0.007 UJ	0.009 U	0.0085 U	0.0085 U	0.007 U	0.007 U	0.007 U	0.007 UJ	0.007 UJ	0.0075 UJ	0.007 UJ	0.0075 U	0.0075 U
99-09-2	3-Nitroaniline	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.009 U	0.0115 U	0.011 U	0.0115 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.01 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.005 U	0.0065 U	0.006 U	0.0065 U	0.0049 U	0.00485 U	0.0048 U	0.00495 U	0.00495 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.007 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.011 U	0.01 U	0.0105 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0125 U	0.0125 U	0.012 U	0.013 U	0.012 U	0.012 U	0.015 U	0.014 U	0.0145 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.0125 U
106-44-5	4-Methylphenol (m/p-cresol)	0.0145 U	0.0145 U	0.014 U	0.0155 U	0.014 U	0.014 U	0.0175 U	0.0165 U	0.017 U	0.014 U	0.0135 U	0.0135 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.015 U	0.0145 U
100-02-7	4-Nitrophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 UJ	0.009 UJ	0.0115 UJ	0.011 UJ	0.0115 UJ	0.009 U	0.009 U	0.009 U	0.009 UJ	0.009 UJ	0.0095 UJ	0.0095 UJ	0.01 UJ	0.0095 UJ
83-32-9	Acenaphthene	0.015 U	0.58	0.14	0.01	0.064 J	0.12 J	0.0185 U	0.034 U	0.0355 U	0.0057 J	0.0014 U	0.0014 U	0.0285 U	0.0145 U	0.015 U	0.0145 U	0.0305 U	0.0305 U
208-96-8	Acenaphthylene	0.33	1.9	0.34	0.06	0.9	1.2	0.058 J	0.55	0.64	0.022	0.0032 J	0.0045 J	0.88	0.37	0.045 J	0.041 J	0.23	0.24
67-64-1	Acetone	0.0014 U	0.0014 U	0.00165 U	0.0015 U	0.00135 U	0.31	0.089 J	0.059 J	0.034 J	0.0076 J	0.0075 J	0.004 J	0.055 J	0.00135 U	0.0014 U	0.00135 U	0.0017 U	0.0018 U
120-12-7	Anthracene	0.37	6.4	0.34	0.13	1.8	2.5	0.12 J	1.1	1.3	0.033	0.0062 J	0.0074 J	1.2	0.4	0.17	0.15	0.41	0.41
7440-36-0	Antimony	0.17 U	0.185 U	0.175 UJ	0.185 UJ	0.18 UJ	0.17 UJ	0.225 UJ	0.21 UJ	0.215 UJ	0.175 UJ	0.17 UJ	0.17 UJ	0.175 UJ	0.175 UJ	0.18 UJ	0.17 UJ	3.4	3.3
7440-38-2	Arsenic	5 J	12 J	4.3 J	14 J	17	18	4.2	4.3	5.5	1.4	0.21 U	0.44 J	4.8	4.7	1.3	1	16	12
7440-39-3	Barium	16	32	23	12	18	22	6.5 E	8.1 E	10 E	11	8	8.9	6.3	5.7	16	13	60	47
71-43-2	Benzene	0.000215 U	0.00022 U	0.00026 U	0.00023 U	0.00021 U	0.00022 U	0.000445 U	0.000385 U	0.000375 U	0.000205 U	0.000205 U	0.0002 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.000265 U	0.000275 U
56-55-3	Benzo(a)anthracene	0.71	5.6	0.57	0.088	1	1.4	0.084 J	0.68	0.81	0.045	0.0058	0.0071	2.1	0.82	0.11 J	0.094 J	0.58	0.62
50-32-8	Benzo(a)pyrene	0.69	6.5	0.66	0.13	1.3	1.7	0.098 J	1	1.3	0.059	0.0071 J	0.01 J	2.6	1.2	0.12 J	0.11 J	0.62	0.65
205-99-2	Benzo(b)fluoranthene	1.4	13	0.84	0.26	2.5	3	0.19 J	1.8	2.1	0.11	0.014	0.019	4.7	1.7	0.28 J	0.22 J	1.1	1.2
191-24-2	Benzo(g,h,i)perylene	0.75	5.5	0.39	0.11	1.8	2.4	0.092 J	1.1	1.3	0.043	0.0065 J	0.0089 J	2.1	0.92	0.11 J	0.095 J	0.47	0.48
207-08-9	Benzo(k)fluoranthene	0.81	6.5	0.68	0.12	1.6	2.3	0.16 J	1.3	1.7	0.052	0.0086	0.01	3.5	1.4	0.18 J	0.16 J	0.81	0.84
85-68-7	Benzyl butyl phthalate	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.0125 U	0.0115 U	0.012 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0105 U	0.0105 U
92-52-4	Biphenyl	0.085 U	0.085 U	0.085 U	0.09 U	0.085 U	0.08 U	0.105 U	0.095 U	0.1 U	0.08 UJ	0.08 U	0.08 U	0.08 U	0.08 U	0.085 U	0.085 U	0.085 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.009 U	0.0115 U	0.011 U	0.0115 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.01 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.0085 U	0.0085 UJ	0.0085 U	0.009 U	0.0085 U	0.008 U	0.0105 UJ	0.0095 UJ	0.01 UJ	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.012 U	0.012 U	0.0115 U	0.0125 U	0.0115 UJ	0.0115 UJ	0.0145 U	0.0135 U	0.014 U	0.011 U	0.011 U	0.011 U	0.0115 UJ	0.0115 UJ	0.0115 UJ	0.0115 UJ	0.012 UJ	0.012 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.24	0.094 J	0.05 J	0.0095 U	0.021 J	0.0085 U	0.011 U	0.01 U	0.0105 U	0.0085 U	0.0085 U	0.0085 U	0.04 J	0.0085 U	0.009 U	0.009 U	0.009 U	0.02 J
75-27-4	Bromodichloromethane	0.00016 U	0.000165 U	0.00019 U	0.000175 U	0.00016 U	0.000165 U	0.00033 U	0.000285 U	0.00028 U	0.000155 U	0.00015 U	0.00015 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.0002 U	0.000205 U
74-83-9	Bromomethane	0.00018 UJ	0.00018 UJ	0.00021 UJ	0.00019 UJ	0.000175 UJ	0.00018 UJ	0.000365 UJ	0.000315 UJ	0.00031 UJ	0.00017 UJ	0.000165 UJ	0.000165 UJ	0.00017 UJ	0.00017 UJ	0.000175 UJ	0.000175 UJ	0.00022 UJ	0.000225 UJ
7440-43-9	Cadmium	0.145 U	0.16 U	0.15 U	0.155 U	0.155 U	0.145 U	0.195 U	0.18 U	0.185 U	0.15 U	0.145 U	0.145 U	0.15 U	0.15 U	0.15 U	0.145 U	0.155 U	0.16 U
86-74-8	Carbazole	0.06 J	0.57	0.047 J	0.0095 U	0.22	0.28	0.034 J	0.12 J	0.14 J	0.0085 U	0.0085 U	0.0085 U	0.28	0.082 J	0.009 U	0.009 U	0.072 J	0.074 J
75-15-0	Carbon disulfide	0.0009 U	0.0009 U	0.00105 U	0.00095 U	0.0009 U	0.0009 U	0.00185 U	0.0016 U	0.00155 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.0011 U	0.00115 U
56-23-5	Carbon tetrachloride	0.000195 U	0.000195 U	0.00023 U	0.00021 U	0.00019 U	0.0002 U	0.0004 U	0.000345 U	0.00034 U	0.000185 U	0.00018 U	0.00018 U	0.000185 U	0.000185 U	0.000195 U	0.00019 U	0.00024 U	0.00025 U
108-90-7	Chlorobenzene	0.00022 U	0.000225 U	0.000265 U	0.00024 U	0.000215 U	0.000225 U	0.000455 U	0.000395 U	0.000385 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.000275 UJ	0.000285 U
124-48-1	Chlorodibromomethane	0.00014 U	0.00014 U	0.000165 U	0.00015 U	0.000135 U	0.00014 U	0.000285 U	0.000245 U	0.000245 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.000135 U	0.00014 U	0.000135 U	0.00017 UJ	0.00018 U
75-00-3	Chloroethane	0.0002 U	0.000205 U	0.00024 U	0.000215 U	0.000195 U	0.000205 U	0.00041 U	0.000355 U	0.00035 U	0.00019 UJ	0.000185 UJ	0.000185 UJ	0.00019 U	0.00019 U	0.0002 U	0.000195 U	0.000245 U	0.000255 U
67-66-3	Chloroform	0.00019 U	0.00019 U	0.000225 U	0.000205 U	0.000185 U	0.000195 U	0.000385 U	0.000335 U	0.00033 U	0.00018 U	0.000175 U	0.000175 U	0.002 J	0.00018 U	0.00019 U	0.00057 J	0.000235 U	0.00024 U
74-87-3	Chloromethane	0.00025 U	0.000255 U	0.000295 U	0.00027 U	0.000245 U	0.000255 U	0.00055 U	0.000445 U	0.000435 U	0.000235 U	0.000235 U	0.000235 U	0.00024 U	0.00024 U	0.00025 U	0.000245 U	0.000305 U	0.00032 U
7440-47-3	Chromium	11 J	12 J	9.8 J	5.6 J	20	11	8.1	6.5	7.1	3.2	3.1	3.4	5.8	3.8	6.2	5.4	21	16
218-01-9	Chrysene	0.9	7.2	0.7	0.11	1.3	1.6	0.14 J	0.94	1.2	0.059	0.0078	0.0097	3.1	1.1	0.18 J	0.15 J	0.96	0.97
156-59-2	cis-1,2-Dichloroethylene	0.000145 U	0.000145 U	0.000175 U	0.000155 U	0.00014 U	0.00015 U	0.000295 U	0.000255 U	0.00025 U	0.00014 U	0.000135 U	0.000135 U	0.00014 U	0.00014 U	0.000145 U	0.00014 U	0.00018 U	0.000185 U
10061-01-5	cis-1,3-Dichloropropene	0.00016 U	0.000165 U	0.00019 U	0.000175 U	0.00016 U	0.000165 U	0.00033 U	0.000285 U	0.00028 U	0.000155 U	0.00015 U	0.00015 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.0002 UJ	0.000205 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS005AA	SS005BA	SS005CA	SS005DA	SS006AA	SS006BA	SS007AA	SS007BA	SS007BC	SS007CA	SS007DA	SS007DB	SS008AA	SS008BA	SS009AA	SS009BA	SS010AA	SS010AB
	Sample Date	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	05-Dec-06	05-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	6.7 J	14 J	5.8 J	1.6 J	18	12	5	4.7	6.1	0.81 J	0.39 J	0.47 J	5.6	3.4	2.8	2.3	43	35
110-82-7	Cyclohexane	0.00021 U	0.000215 U	0.00025 U	0.000225 U	0.000205 U	0.000215 U	0.00043 U	0.000375 U	0.00037 U	0.0002 U	0.0002 U	0.000195 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.00026 U	0.00027 U
53-70-3	Dibenzo(a,h)anthracene	0.21	1.2	0.24	0.037	0.49	0.74	0.023 J	0.31	0.37	0.016	0.0021 J	0.0028 J	0.73	0.31	0.033 J	0.027 J	0.16	0.19
132-64-9	Dibenzofuran	0.032 J	0.88	0.029 J	0.008 U	0.11 J	0.22	0.009 U	0.019 J	0.02 J	0.007 U	0.007 U	0.007 U	0.1 J	0.02 J	0.0075 U	0.007 U	0.09 J	0.1 J
75-09-2	Dichloromethane	0.000215 U	0.00022 U	0.00026 U	0.00023 U	0.00021 U	0.00022 U	0.000445 U	0.000385 U	0.000375 U	0.000205 U	0.000205 U	0.0002 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.000265 U	0.000275 U
84-66-2	Diethyl phthalate	0.007 U	0.007 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.007 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.034 U	0.034 U	0.033 U	0.036 U	0.033 U	0.0325 U	0.0415 U	0.0385 U	0.04 U	0.032 U	0.0315 U	0.0315 U	0.032 U	0.0325 U	0.0335 U	0.033 U	0.0345 U	0.034 U
117-84-0	di-n-Octyl-phthalate	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.008 U	0.0105 U	0.0095 U	0.01 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U
100-41-4	Ethylbenzene	0.00023 U	0.000235 U	0.00028 U	0.00025 U	0.00023 U	0.000235 U	0.000475 U	0.000415 U	0.000405 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000225 U	0.00023 U	0.00023 U	0.000285 UJ	0.0003 U
206-44-0	Fluoranthene	1	12	1.1	0.15	1.7	2.4	0.14 J	0.86	1	0.051	0.0092	0.0091	3.3	0.97	0.19 J	0.17	1.2	1.1
86-73-7	Fluorene	0.027 J	0.56	0.17	0.01	0.074	0.1	0.0105 U	0.019 U	0.042 J	0.0033 J	0.0008 U	0.0008 U	0.016 U	0.008 U	0.0085 U	0.0085 U	0.017 U	0.017 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.009 U	0.0115 U	0.011 U	0.0115 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.01 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0046 U	0.00465 U	0.0045 U	0.0049 U	0.00445 U	0.0044 U	0.006 U	0.0055 U	0.0055 U	0.00435 UJ	0.0043 U	0.00425 U	0.0044 U	0.0044 U	0.00455 U	0.0045 U	0.0047 U	0.00465 U
77-47-4	Hexachlorocyclopentadiene	0.0065 U	0.0065 UJ	0.006 U	0.0065 U	0.006 U	0.006 U	0.0075 U	0.007 U	0.0075 U	0.006 U	0.006 U	0.006 U	0.006 UJ	0.006 U	0.006 U	0.006 U	0.0065 U	0.0065 U
67-72-1	Hexachloroethane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.009 U	0.0115 U	0.011 U	0.0115 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.01 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.55	5.5	0.49	0.11	2.1	2.7	0.1 J	1.3	1.5	0.046	0.0065 J	0.0089 J	2.7	1.1	0.14 J	0.12 J	0.59	0.61
98-82-8	Isopropylbenzene	0.000255 U	0.00026 U	0.000305 U	0.000275 U	0.00025 U	0.00026 U	0.00055 U	0.000455 U	0.000445 U	0.00024 U	0.00024 U	0.00024 U	0.000245 U	0.000245 U	0.000255 U	0.00025 U	0.000315 UJ	0.000325 UJ
7439-92-1	Lead	14 J	37 J	13 J	5.5 J	16	17	3.7	5.4	6.2	5.4	4	4	6.3	5.5	14	12	170	140
136777-61-2	m,p-Xylenes	0.00048 U	0.000485 U	0.0006 U	0.00055 U	0.00047 U	0.00049 U	0.001 U	0.0009 U	0.00085 U	0.000455 U	0.00045 U	0.00045 U	0.00046 U	0.00046 U	0.000475 U	0.00047 U	0.0006 UJ	0.00065 U
541-73-1	m-Dichlorobenzene	2.75E-05 U	0.000028 U	0.000033 U	2.95E-05 U	0.000027 U	0.000028 U	0.00006 U	0.000049 U	4.85E-05 U	0.000026 U	0.000026 U	0.000026 U	2.65E-05 U	2.65E-05 U	2.75E-05 U	0.000027 U	0.000034 UJ	3.55E-05 UJ
7439-97-6	Mercury	0.066 J	0.32 J	0.069 J	0.049 J	0.095	0.12	0.043	0.072	0.08	0.026	0.016 J	0.018 J	0.097	0.065	0.11	0.067	0.36	0.31
79-20-9	Methyl acetate	0.000105 U	0.00011 U	0.000125 U	0.000115 U	0.000105 U	0.00011 U	0.000215 U	0.00019 U	0.000185 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.000105 U	0.000105 U	0.00013 U	0.000135 U
78-93-3	Methyl ethyl ketone	0.00065 U	0.00065 U	0.00075 U	0.00065 U	0.0006 U	0.00065 U	0.00125 U	0.0011 U	0.0011 U	0.0006 U	0.0006 U	0.0006 U	0.0019 J	0.0006 U	0.0006 U	0.0006 U	0.00075 U	0.0008 U
108-10-1	Methyl isobutyl ketone	0.00039 U	0.0004 U	0.00047 U	0.00042 U	0.000385 U	0.0004 U	0.00085 U	0.0007 U	0.0007 U	0.00037 U	0.000365 U	0.000365 U	0.000375 U	0.000375 U	0.00039 U	0.000385 U	0.000485 UJ	0.0005 U
591-78-6	Methyl n-butyl ketone	0.00055 UJ	0.0006 UJ	0.0007 UJ	0.0006 UJ	0.00055 U	0.0006 U	0.00115 U	0.001 U	0.001 U	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0007 UJ	0.00075 U
108-88-3	Methylbenzene	0.00023 U	0.000235 U	0.00028 U	0.00025 U	0.00023 U	0.000235 U	0.000475 U	0.000415 U	0.000405 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000225 U	0.00023 U	0.00023 U	0.000285 UJ	0.0003 U
108-87-2	Methylcylohexane	0.000245 U	0.000245 U	0.00029 U	0.00026 U	0.00024 U	0.00025 U	0.0005 U	0.000435 U	0.000425 U	0.00023 U	0.00023 U	0.00023 U	0.000235 U	0.000235 U	0.00024 U	0.00024 U	0.0003 UJ	0.00031 U
91-20-3	Naphthalene	0.049	0.92	0.11	0.02	0.11	0.16	0.03 J	0.056 J	0.065 J	0.00027 U	0.000265 U	0.000265 U	0.049 J	0.014 J	0.0028 U	0.00275 U	0.33	0.29
98-95-3	Nitrobenzene	0.011 U	0.0115 U	0.011 U	0.012 U	0.011 U	0.011 U	0.0135 U	0.0125 U	0.013 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.011 U	0.0115 U	0.0115 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.01 U	0.01 U	0.011 U	0.01 UJ	0.01 UJ	0.0125 U	0.0115 U	0.012 U	0.0095 U	0.0095 U	0.0095 U	0.0095 UJ	0.0095 UJ	0.01 UJ	0.01 UJ	0.0105 U	0.0105 U
86-30-6	n-Nitrosodiphenylamine	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.0075 U	0.007 U	0.0075 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.0065 U
95-47-6	o-Xylene	0.00022 U	0.000225 U	0.000265 U	0.00024 U	0.000215 U	0.000225 U	0.000455 U	0.000395 U	0.000385 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.000275 UJ	0.000285 U
106-47-8	p-Chloroaniline	0.0145 UJ	0.0145 U	0.014 UJ	0.0155 UJ	0.014 U	0.014 U	0.0175 U	0.0165 U	0.017 U	0.014 U	0.0135 UJ	0.0135 UJ	0.014 U	0.014 U	0.0145 U	0.014 U	0.015 U	0.0145 U
87-86-5	Pentachlorophenol	0.19 J	0.43 J	0.28 J	0.012 J	0.48 J	0.56 J	0.15 J	0.48 J	0.65 J	0.0098 J	0.00036 U	0.00036 U	0.87 J	0.19 J	0.18 J	0.2 J	0.076 J	0.079 J
85-01-8	Phenanthrene	0.19	2.8	0.3	0.051	0.56	0.87	0.051 J	0.14 J	0.18	0.00175 U	0.0017 U	0.0017 U	0.43	0.071 J	0.05 J	0.04 J	0.81	0.7
108-95-2	Phenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.011 U	0.01 U	0.0105 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.007 U	0.007 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U
129-00-0	Pyrene	1.5	12	1.3	0.17	1.6	2.1	0.16 J	1.1	1.3	0.082	0.012	0.013	5.4	2.5	0.24 J	0.2 J	1	1
7782-49-2	Selenium	0.425 U	0.455 U	0.44 U	0.455 U	0.445 U	0.425 U	0.55 U	0.5 U	0.55 U	0.43 U	0.425 U	0.425 U	0.44 U	0.43 U	0.44 U	0.42 U	0.45 U	0.46 U
7440-22-4	Silver	0.19 U	0.205 U	0.2 U	0.205 U	0.2 U	0.195 U	0.255 U	0.235 U	0.24 U	0.195 U	0.195 U	0.19 U	0.2 U	0.195 U	0.2 U	0.19 U	0.205 U	0.21 U
100-42-5	Styrene (monomer)	0.00024 U	0.00024 U	0.000285 U	0.000255 U	0.000235 U	0.000245 U	0.00049 U	0.000425 U	0.000415 U	0.000225 U	0.000225 U	0.000225 U	0.00023 U	0.00023 U	0.000235 U	0.000235 U	0.000295 UJ	0.000305 U
1634-04-4	tert-Butyl methyl ether	0.00018 U	0.00018 U	0.00021 U	0.00019 U	0.000175 U	0.00018 U	0.000365 U	0.000315 U	0.00031 U	0.00017 U	0.000165 U	0.000165 U	0.00017 U	0.00017 U	0.000175 U	0.000175 U	0.00022 U	0.000225 U
127-18-4	Tetrachloroethylene	0.00022 U	0.000225 U	0.000265 U	0.00024 U	0.000215 U	0.000225 U	0.000455 U	0.000395 U	0.000385 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.000275 UJ	0.000285 U
156-60-5	trans-1,2-Dichloroethene	0.00021 U	0.000215 U	0.00025 U	0.000225 U	0.000205 U	0.000215 U	0.00043 U	0.000375 U	0.00037 U	0.0002 U	0.0002 U	0.000195 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.00026 U	0.00027 U
10061-02-6	trans-1,2-Dichloropropene	0.000165 U	0.00017 U	0.0002 U	0.00018 U	0.000165 U	0.00017 U	0.00034 U	0.000295 U	0.00029 U	0.00016 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.000165 U	0.000165 U	0.000205 UJ	0.000215 U
75-25-2	Tribromomethane	0.000215 U	0.00022 U	0.00026 U	0.00023 U	0.00021 U	0.00022 U	0.000445 U	0.000385 U	0.000375 U	0.000205 U	0.000205 U	0.0002 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.000265 UJ	0.000275 U
79-01-6	Trichloroethylene	0.00022 U	0.000225 U	0.000265 U	0.00024 U	0.000215 U	0.000225 U	0.000455 U	0.000395 U	0.000385 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.000275 U	0.000285 U
7440-62-2	Vanadium	5.6	7.6	6.2	2.6	3.9	4.4	1.5	0.55 UJ	1.6	2.1	1.3	2.2	0.97 J	1.2	3.4	2.6	7.9	6.1
75-01-4	Vinyl chloride	0.000135 U	0.000135 U	0.00016 U	0.000145 U	0.00013 U	0.000135 U	0.000275 U	0.00024 U	0.000235 U	0.000125 U	0.000125 U	0.000125 U	0.00013 U	0.00013 U	0.000135 U	0.00013 U	0.000165 U	0.00017 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.001008	0.00311 J	0.000615	0.000124	0.00494	0.0041	0.001382	0.001898	0.002704	5.35E-05	1.04E-05	9.01E-06						
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.007383	0.0425	0.005481	0.001229	0.0371	0.0345	0.011911	0.014276	0.016846	0.000454	8.32E-05	6.64E-05						
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	6.7E-05	0.000225	4.34E-05	6.62E-06 U	0.000295	0.000251	8.45E-05	0.000115	0.000176	3.05E-06 J	2.62E-07 U	2.59E-07 U						
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	2.89E-05	6.52E-05	1.67E-05	3.13E-06 J	0.000122	8.92E-05	6.77E-05	9.3E-05	0.000139	6.68E-07 U	5.2E-07 J	5.09E-07 J						
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	7.45E-05	0.000181	4.24E-05	7.06E-06	0.000366	0.000242	8.12E-05	0.000109	0.000121	1.12E-06 J	3.97E-07 J	4.7E-07 J						
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	2.75E-05	3.47E-05	1.29E-05	2.28E-06 J	0.000103	7.07E-05	3.4E-05	4.61E-05	7.73E-05	9.9E-08 U	1.8E-07 J	2.4E-07 J						
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000197	0.000756	0.00012	2.41E-05	0.000911	0.000722	0.000254	0.000337	0.000463	6.51E-06	1.56E-06 J	1.23E-06 J						
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	1.99E-07 U	1.17E-05	1.36E-07 U	1.17E-07 U	2.71E-05	2.12E-05	1.25E-06 J	1.73E-06 J	1.1E-06 U	1.06E-07 U	6.75E-08 U	9.6E-08 J						
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000144 J	0.000347	8.18E-05 J	1.33E-05 J	0.000634	0.00044	0.000247	0.000339	0.000357	7.15E-06	1.45E-06 J	1.36E-06 J						
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	2.26E-06 J	4.01E-06	1.31E-06 J	3.24E-07 J	9.44E-06	5.99E-06	3.92E-06 J	5.26E-06 J	9.52E-06 J	7.2E-08 U	1.95E-08 U	3.45E-08 U						
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	2.38E-05	4.83E-05	1.16E-05	2.15E-06 J	0.000119	7.24E-05	2.91E-05	3.96E-05	4.05E-05	6.2E-08 U	1.57E-07 J	1.68E-07 J						
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	2.32E-05	6.43E-05	9.6E-06 J	1.92E-06 J	0.000194	0.00014	1.95E-05	2.76E-05	7.16E-05	9.5E-08 U	2.95E-07 J	3.37E-07 J						
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	3.29E-06 J	1.43E-05	1.77E-06 J	2.99E-07 J	3.74E-05	2.85E-05	7.6E-06	1.02E-05	1.48E-05	2.8E-08 U	2.2E-08 U	1.35E-07 J						
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	6.72E-07 J	1.86E-06	2.79E-07 U	1.76E-07 U	2.23E-06	1.5E-06	7.63E-07 J	1.08E-06 J	1.62E-06 J	4.25E-08 U	3.55E-08 U	6E-09 U						
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1.1E-06 J	5.84E-06	5.99E-07 J	1.2E-08 U	6.43E-06	3.4E-06	2.09E-06	2.61E-06	2.26E-06 J	3.25E-08 U	3.15E-08 U	4.5E-09 U						
39001-02-0	Octachlorodibenzofuran	0.004225	0.0175	0.00339	0.000705	0.0198	0.0182	0.006975	0.009426	0.011902	0.000398	5.62E-05	4.45E-05						
3268-87-9	Octachlorodibenzo-p-dioxin	0.05434 J	0.412	0.047246 J	0.011327 J	0.35	0.323	0.093948 J	0.114044 J	0.144857	0.004574 J	0.000804	0.000657						

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS010BA	SS011AA	SS011BA	SS012AA	SS012AC	SS012BA	SS013AA	SS013BA	SS014AA	SS014BA	SS015AA	SS015BA	SS016AA	SS016BA	SS017AA	SS017BA	SS018AA	SS018BA
	Sample Date	05-Dec-06	05-Dec-06	05-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06
	Sample Depth (feet)	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000125 U	0.000095 U	0.000095 U	0.000095 U	0.000027 U	0.00012 U	0.00009 U	0.000065 U	0.00007 U	0.00007 U	0.000075 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	3.55E-05 U	0.00007 U	0.00005 U	0.00005 U	0.000055 U	0.000027 U	0.000065 U	0.000048 U	3.55E-05 U	0.000037 U	3.65E-05 U	4.05E-05 U	3.55E-05 U	3.55E-05 U	3.55E-05 U	0.000036 U	0.000037 U	0.000035 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.000135 U	0.0001 U	0.0001 U	0.000105 U	0.00002 U	0.00013 U	0.000095 U	0.00007 U	0.000075 U	0.000075 U	0.00008 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.00007 U
75-34-3	1,1-Dichloroethane	0.000034 U	0.000065 U	0.000048 U	0.000048 U	0.00005 U	0.000028 U	0.000065 U	0.000046 U	0.000034 U	3.55E-05 U	0.000035 U	0.000039 U	0.000034 U	0.000034 U	0.000034 U	0.000034 U	3.55E-05 U	3.35E-05 U
75-35-4	1,1-Dichloroethylene	0.000095 U	0.000175 U	0.00013 U	0.00013 U	0.000135 U	2.65E-05 U	0.00017 U	0.000125 U	0.000095 U	0.0001 U	0.000095 U	0.000105 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.0001 U	0.00009 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 UJ	0.000155 U	0.000115 U	0.000115 UJ	0.00012 UJ	0.000047 U	0.00015 U	0.00011 UJ	0.00008 UJ	0.000085 UJ	0.000085 U	0.000095 UJ	0.000085 U	0.00008 U	0.000085 U	0.000085 U	0.000085 U	0.00008 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.000265 UJ	0.0005 U	0.000375 U	0.000375 UJ	0.00039 UJ	4.05E-05 U	0.000485 U	0.000355 UJ	0.000265 UJ	0.000275 UJ	0.00027 U	0.000305 UJ	0.000265 U	0.000265 U	0.000265 U	0.000265 U	0.000275 U	0.00026 UJ
106-93-4	1,2-Dibromoethane	0.00003 U	0.00006 U	4.25E-05 U	4.25E-05 U	4.45E-05 U	2.45E-05 U	0.00006 U	4.05E-05 U	0.00003 U	3.15E-05 U	0.000031 U	3.45E-05 U	3.05E-05 U	0.00003 U	3.05E-05 U	3.05E-05 U	3.15E-05 U	0.00003 U
95-50-1	1,2-Dichlorobenzene	0.000042 UJ	0.00008 U	0.00006 U	0.00006 UJ	0.000065 UJ	0.000019 U	0.00008 U	0.00006 UJ	0.000042 UJ	0.000044 UJ	0.000043 U	0.000048 UJ	0.000042 U	4.15E-05 U	0.000042 U	4.25E-05 U	0.000044 U	4.15E-05 UJ
107-06-2	1,2-Dichloroethane	0.000055 U	0.000105 U	0.00008 U	0.00008 U	0.00008 U	2.15E-05 U	0.0001 U	0.000075 U	0.000055 U	0.00006 U	0.00006 U	0.000065 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.000029 U	0.000055 U	0.000041 U	0.000041 U	0.000043 U	1.15E-05 U	0.000055 U	3.95E-05 U	0.000029 U	3.05E-05 U	0.00003 U	3.35E-05 U	2.95E-05 U	0.000029 U	0.000029 U	2.95E-05 U	3.05E-05 U	0.000029 U
106-46-7	1,4-Dichlorobenzene	4.65E-05 UJ	0.00009 U	0.00007 U	0.00007 UJ	0.00007 UJ	0.000019 U	0.00009 U	0.000065 UJ	4.65E-05 UJ	0.000049 UJ	0.000048 U	0.000055 UJ	0.000047 U	4.65E-05 U	0.000047 U	0.000047 U	0.000049 U	0.000046 UJ
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.0095 U	0.008 U	0.009 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.0195 U	0.0255 U	0.022 U	0.024 U	0.0235 U	0.0225 U	0.024 U	0.0215 U	0.0195 U	0.0195 U	0.0195 U	0.0205 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.012 U	0.0105 U	0.0115 U	0.0115 U	0.0105 U	0.0115 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.0135 U	0.0115 U	0.0125 U	0.0125 U	0.012 U	0.0125 U	0.0115 U	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.0195 U	0.0255 U	0.022 U	0.024 U	0.0235 U	0.0225 U	0.024 U	0.0215 U	0.0195 U	0.0195 U	0.0195 U	0.0205 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U
91-58-7	2-Chloronaphthalene	0.009 U	0.0115 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U
95-57-8	2-Chlorophenol	0.01 U	0.013 U	0.011 U	0.012 U	0.012 U	0.0115 U	0.012 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.14	0.14 J	0.22 J	0.026 J	0.03 J	0.036 J	0.03 J	0.034 J	0.13	0.14	0.094	0.13	0.084	0.022 J	0.029 J	0.044 J	0.018 J	0.008 U
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.012 U	0.0155 U	0.0135 U	0.0145 UJ	0.0145 UJ	0.0135 UJ	0.0145 UJ	0.013 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.0125 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
88-75-5	2-Nitrophenol	0.0075 U	0.01 U	0.0085 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0085 U	0.0075 U	0.008 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.0185 U	0.024 U	0.021 U	0.0225 U	0.0225 U	0.021 U	0.0225 U	0.02 U	0.0185 U	0.0185 U	0.0185 U	0.0195 U	0.0185 U	0.0185 U	0.0185 U	0.0185 U	0.0185 U	0.018 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.0095 U	0.008 U	0.009 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U
99-09-2	3-Nitroaniline	0.0095 U	0.012 U	0.0105 U	0.0115 U	0.0115 U	0.0105 U	0.0115 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.005 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.0115 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 U	0.0155 U	0.0135 U	0.0145 U	0.0145 U	0.0135 U	0.0145 U	0.013 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.0185 U	0.016 U	0.0175 U	0.017 U	0.016 U	0.017 U	0.0155 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.014 U
100-02-7	4-Nitrophenol	0.0095 UJ	0.012 UJ	0.0105 UJ	0.0115 UJ	0.0115 UJ	0.0105 UJ	0.0115 UJ	0.01 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.01 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.009 UJ
83-32-9	Acenaphthene	0.029 U	0.044 J	0.052 J	0.018 U	0.0175 U	0.035 J	0.018 U	0.016 U	0.0145 U	0.015 U	0.033 J	0.0155 U	0.1 J	0.0145 U	0.031 J	0.079 J	0.015 U	0.0145 U
208-96-8	Acenaphthylene	0.19	0.18 J	0.23 J	0.45	0.46	0.63	0.54	0.53	0.66	0.62	0.45	0.45	1.1	0.44	0.64	0.78	0.91	0.59
67-64-1	Acetone	0.00135 U	0.00255 U	0.046 J	0.0019 U	0.002 U	0.00013 U	0.0025 U	0.00185 U	0.00135 U	0.0042 J	0.0014 U	0.00155 U	0.00135 U	0.00135 U	0.00135 U	0.00135 U	0.0014 U	0.0052 J
120-12-7	Anthracene	0.35	0.35	0.34	0.83	0.87	1.2	0.79	0.7	1.3	1.3	0.76	0.71	1.5	0.55	1.2	1.7	2.1	2.1
7440-36-0	Antimony	1.7	1.6 J	0.96 J	1.3 J	0.96 J	0.86 J	0.61 J	0.76 J	0.58 J	0.77 J	0.4 J	0.46 J	0.18 UJ	0.18 UJ	0.18 UJ	0.175 UJ	0.185 UJ	0.175 UJ
7440-38-2	Arsenic	5.3	11	8	49 J	33 J	33 J	48 J	56 J	94 J	140 J	61	51	21	13	10 J	6.4	3.1 J	2.3 J
7440-39-3	Barium	21	170	180	60 J	40 J	34	32	26	38	65	19 E	40 E	9.8 E	8.3 E	11	13 E	16	15
71-43-2	Benzene	0.00021 U	0.000395 U	0.000295 U	0.0003 U	0.00031 U	0.00002 U	0.000385 U	0.000285 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.00022 U	0.00021 U
56-55-3	Benzo(a)anthracene	0.41	0.64 J	0.71 J	0.75	0.76	1.1	1.7	0.84	1.1	1.5	0.75	0.64	2.5	0.94	0.91	1.5	3.3	1.3
50-32-8	Benzo(a)pyrene	0.46	0.7 J	0.61 J	1.1	1.1	1.6	1.1	0.9	1.7	3.9	0.74	0.62	3.3	1.1	0.92	1.8	2.3	1.4
205-99-2	Benzo(b)fluoranthene	0.87	1.3 J	1 J	1.6	1.7	2.5	2.2	1.7	3.2	7.1	1.4	1.2	5.8	1.8	1.8	3.2	4.4	2.4
191-24-2	Benzo(g,h,i)perylene	0.36	0.55 J	0.48 J	0.71	0.73	0.98	0.77	0.81	1.9	5.5	0.83	0.72	2.7	0.82	0.73	1.5	1.2	0.78
207-08-9	Benzo(k)fluoranthene	0.58	0.86 J	0.66 J	1.4	1.3	2	1.9	1.3	2.1	5	1.2	0.86	4.5	1.5	1.5	2.6	3.9	2
85-68-7	Benzyl butyl phthalate	0.01 U	0.013 U	0.011 U	0.012 U	0.012 U	0.0115 U	0.012 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
92-52-4	Biphenyl	0.08 U	0.11 U	0.095 U	0.1 U	0.1 U	0.095 U	0.1 U	0.09 U	0.08 U	0.085 U	0.08 U	0.085 U	0.085 U	0.08 U	0.085 U	0.085 U	0.085 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.012 U	0.0105 U	0.0115 U	0.0115 U	0.0105 U	0.0115 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.008 U	0.0085 U	0.008 UJ	0.0085 UJ	0.0085 U	0.008 U	0.0085 U	0.0085 UJ	0.0085 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 UJ	0.015 UJ	0.013 UJ	0.014 U	0.014 U	0.013 U	0.014 U	0.0125 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.009 U	0.029 J	0.01 U	0.025 J	0.0105 U	0.01 U	0.045 J	0.03 J	0.009 U	0.022 J	0.032 J	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.03 J	0.0085 U
75-27-4	Bromodichloromethane	0.000155 U	0.000295 U	0.00022 U	0.00022 U	0.00023 U	0.000019 U	0.00029 U	0.00021 U	0.000155 U	0.000165 U	0.00016 U	0.00018 U	0.00016 U	0.000155 U	0.00016 U	0.00016 U	0.000165 U	0.000155 U
74-83-9	Bromomethane	0.000175 UJ	0.000325 UJ	0.000245 UJ	0.000245 U	0.000255 U	0.000037 U	0.000315 U	0.000235 U	0.000175 U	0.00018 UJ	0.00018 UJ	0.0002 UJ	0.000175 UJ	0.000175 UJ	0.000175 UJ	0.000175 UJ	0.00018 UJ	0.00017 UJ
7440-43-9	Cadmium	0.15 U	0.205 U	0.17 U	0.18 U	0.175 U	0.165 U	0.18 U	0.16 U	0.145 U	0.145 U	0.15 U	0.33 J	0.155 U	0.155 U	0.155 U	0.15 U	0.155 U	0.15 U
86-74-8	Carbazole	0.04 J	0.1 J	0.12 J	0.23	0.22 J	0.21	0.28	0.28	0.25	0.26	0.15 J	0.15 J	0.15 J	0.11 J	0.21	0.18 J	0.47	0.22
75-15-0	Carbon disulfide	0.0009 U	0.00165 U	0.00125 U	0.00125 U	0.0013 U	0.000215 U	0.0016 U	0.0012 U	0.0009 U	0.0009 U	0.0009 U	0.001 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.00085 U
56-23-5	Carbon tetrachloride	0.00019 U	0.000355 U	0.000265 U	0.00027 U	0.00028 U	3.25E-05 U	0.000345 U	0.000255 U	0.00019 U	0.0002 U	0.000195 U	0.000215 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0002 U	0.000185 U
108-90-7	Chlorobenzene	0.000215 U	0.000405 U	0.000305 U	0.000305 U	0.00032 U	0.000012 U	0.000395 U	0.00029 U	0.000215 U	0.000225 U	0.000225 U	0.00025 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U
124-48-1	Chlorodibromomethane	0.000135 U	0.000255 U	0.00019 U	0.00019 U	0.0002 U	1.55E-05 U	0.00025 U	0.000185 U	0.000135 U	0.00014 U	0.00014 U	0.000155 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.000135 U
75-00-3	Chloroethane	0.000195 U	0.000365 U	0.000275 U	0.000275 U	0.000285 U	3.95E-05 U	0.000355 U	0.000265 U	0.000195 U	0.000205 U	0.0002 U	0.000225 U	0.000195 U	0.000195 U	0.000195 U	0.000195 U	0.000205 U	0.000195 U
67-66-3	Chloroform	0.000185 U	0.000345 U	0.00026 U	0.00026 U	0.00027 U	0.000024 U	0.000335 U	0.00025 U	0.000185 U	0.000195 U	0.00019 U	0.00021 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000195 U	0.00018 U
74-87-3	Chloromethane	0.00024 U	0.00046 U	0.000345 U	0.000345 U	0.000355 U	0.000038 U	0.000445 U	0.00033 U	0.00024 U	0.000255 U	0.00025 U	0.00028 U	0.000245 U	0.00024 U	0.000245 U	0.000245 U	0.000255 U	0.00024 U
7440-47-3	Chromium	5.6	24	14	44 J	29 J	23 J	63 J	74 J	70 J	45 J	81	64	24	13	13 J	4.3	5.8 J	4.8 J
218-01-9	Chrysene	0.69	0.99 J	0.96 J	1.1	1.1	1.6	4.4	1.5	1.6	2.5	1	0.82	3.6	1.3	1.3	2	4.2	2
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.000265 U	0.0002 U	0.0002 U	0.000205 U	2.35E-05 U	0.00026 U	0.00019 U	0.00014 U	0.00015 U	0.000145 U	0.00016 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.00015 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.000295 U	0.00022 U	0.00022 U	0.00023 U	0.000011 U	0.00029 U	0.00021 U	0.000155 U	0.000165 U	0.00016 U	0.00018 U	0.00016 U	0.000155 U	0.00016 U	0.00016 U	0.000165 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS010BA	SS011AA	SS011BA	SS012AA	SS012AC	SS012BA	SS013AA	SS013BA	SS014AA	SS014BA	SS015AA	SS015BA	SS016AA	SS016BA	SS017AA	SS017BA	SS018AA	SS018BA
	Sample Date	05-Dec-06	05-Dec-06	05-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06
	Sample Depth (feet)	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	21	33	25	47 J	31 J	24	48	66	66	52	58	40	19	11	18	5.5	5.8	4.4
110-82-7	Cyclohexane	0.000205 U	0.000385 U	0.00029 U	0.00029 U	0.0003 U	0.000027 U	0.000375 U	0.000275 U	0.000205 U	0.000215 U	0.00021 U	0.000235 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000215 U	0.000205 U
53-70-3	Dibenzo(a,h)anthracene	0.13	0.19 J	0.19 J	0.23	0.23	0.38	0.27	0.26	0.61	1.3	0.25	0.2	0.86	0.26	0.25	0.55	0.51	0.31
132-64-9	Dibenzofuran	0.043 J	0.091 J	0.12 J	0.047 J	0.05 J	0.05 J	0.038 J	0.049 J	0.13 J	0.12 J	0.071 J	0.09 J	0.039 J	0.025 J	0.043 J	0.015 J	0.023 J	0.026 J
75-09-2	Dichloromethane	0.00021 U	0.000395 U	0.000295 U	0.0003 U	0.00031 U	0.00003 U	0.000385 U	0.000285 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.00022 U	0.00021 U
84-66-2	Diethyl phthalate	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.033 U	0.043 U	0.037 U	0.04 U	0.04 U	0.0375 U	0.04 U	0.036 U	0.0325 U	0.033 U	0.0325 U	0.0345 U	0.033 U	0.0325 U	0.033 U	0.033 U	0.0335 U	0.0325 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.008 U
100-41-4	Ethylbenzene	0.000225 U	0.000425 U	0.00032 U	0.00032 U	0.000335 U	0.000015 U	0.000415 U	0.000305 U	0.000225 U	0.000235 U	0.000235 U	0.00026 U	0.00023 U	0.000225 U	0.00023 U	0.00023 U	0.000235 U	0.000225 U
206-44-0	Fluoranthene	0.73	0.85	0.86	0.84	0.83	1.1	9.6	2.3	1.5	1.2	1.5	1	2.6	0.98	1.6	1.7	5.7	1.9
86-73-7	Fluorene	0.016 U	0.036 J	0.038 J	0.029 J	0.032 J	0.04 J	0.035 J	0.032 J	0.035 J	0.029 J	0.04	0.034 J	0.071 J	0.008 U	0.033 J	0.058 J	0.038	0.03 J
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.012 U	0.0105 U	0.0115 U	0.0115 U	0.0105 U	0.0115 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U
118-74-1	Hexachlorobenzene	0.00445 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.00485 U	0.00445 U	0.0045 U	0.00445 U	0.0047 U	0.0045 U	0.00445 U	0.0045 U	0.0045 U	0.0045 U	0.0044 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.008 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.0095 U	0.012 U	0.0105 U	0.0115 U	0.0115 U	0.0105 U	0.0115 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.45	0.69 J	0.57 J	0.85	0.86	1.2	0.92	0.89	1.9	4.9	0.97	0.84	3.2	0.91	0.85	1.9	1.6	1
98-82-8	Isopropylbenzene	0.00025 UJ	0.00047 U	0.00035 U	0.00035 UJ	0.000365 UJ	0.000015 U	0.000455 U	0.000335 UJ	0.000245 UJ	0.00026 UJ	0.000255 U	0.000285 UJ	0.00025 U	0.000245 U	0.00025 U	0.00025 U	0.00026 U	0.000245 UJ
7439-92-1	Lead	73	100	54	46 J	31 J	30	20	19	27	45	15	56	6	4.4	7.7	5.8	9.4	8
136777-61-2	m,p-Xylenes	0.000465 U	0.0009 U	0.0007 U	0.0007 U	0.0007 U	0.000037 U	0.0009 U	0.00065 U	0.000465 U	0.00049 U	0.00048 U	0.00055 U	0.00047 U	0.000465 U	0.00047 U	0.00047 U	0.00049 U	0.00046 U
541-73-1	m-Dichlorobenzene	0.000027 UJ	0.000055 U	0.000038 U	0.000038 UJ	3.95E-05 UJ	0.000016 U	4.95E-05 U	3.65E-05 UJ	0.000027 UJ	0.000028 UJ	0.000028 U	0.000031 UJ	0.000027 U	0.000027 U	0.000027 U	0.000027 U	0.000028 U	2.65E-05 UJ
7439-97-6	Mercury	0.12	0.31	0.16	0.13	0.14	0.1	0.16	0.2	0.088	0.11	0.096	0.2	0.24	0.15	0.29	0.35	0.31	0.22
79-20-9	Methyl acetate	0.000105 U	0.000195 U	0.000145 U	0.000145 U	0.00015 U	0.000055 U	0.00019 U	0.00014 U	0.000105 U	0.00011 U	0.000105 U	0.00012 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.00011 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.00115 U	0.00085 U	0.00085 U	0.0009 U	0.000155 U	0.0011 U	0.0008 U	0.0006 U	0.00065 U	0.00065 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00038 U	0.00075 U	0.00055 U	0.00055 U	0.0006 U	0.0002 U	0.0007 U	0.00055 U	0.00038 U	0.0004 U	0.000395 U	0.000435 U	0.000385 U	0.00038 U	0.000385 U	0.000385 U	0.0004 U	0.00038 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00105 U	0.0008 U	0.0008 U	0.0008 U	0.000245 U	0.001 U	0.00075 U	0.00055 U	0.0006 U	0.0006 U	0.00065 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U
108-88-3	Methylbenzene	0.000225 U	0.000425 U	0.00032 U	0.00032 U	0.000335 U	1.55E-05 U	0.000415 U	0.000305 U	0.000225 U	0.000235 U	0.000235 U	0.00026 U	0.00023 U	0.000225 U	0.00023 U	0.00023 U	0.000235 U	0.000225 U
108-87-2	Methylcylohexane	0.000235 U	0.00045 UJ	0.000335 UJ	0.000335 U	0.00035 U	0.000085 J	0.000435 U	0.00032 U	0.000235 U	0.00025 U	0.000245 U	0.00027 U	0.00024 U	0.000235 U	0.00024 U	0.00024 U	0.00025 U	0.000235 U
91-20-3	Naphthalene	0.25	0.18 J	0.22 J	0.046	0.051	0.058	0.038 J	0.049	0.11	0.13	0.098	0.16	0.1	0.028 J	0.039	0.058 J	0.034 J	0.029 J
98-95-3	Nitrobenzene	0.011 U	0.0145 U	0.0125 U	0.0135 U	0.013 U	0.0125 U	0.0135 U	0.012 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.013 U	0.011 U	0.012 U	0.012 U	0.0115 U	0.012 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.008 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.000215 U	0.000405 U	0.000305 U	0.000305 U	0.00032 U	1.45E-05 U	0.000395 U	0.00029 U	0.000215 U	0.000225 U	0.000225 U	0.00025 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U
106-47-8	p-Chloroaniline	0.014 U	0.0185 U	0.016 U	0.0175 U	0.017 U	0.016 U	0.017 U	0.0155 U	0.014 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.014 U
87-86-5	Pentachlorophenol	0.036 J	0.061 J	0.032 J	0.53	0.55	0.69	0.49	0.51	0.33 J	0.26 J	0.31 J	0.15 J	0.95 J	0.42 J	1.3	0.82 J	0.56	0.42
85-01-8	Phenanthrene	0.58	0.48	0.68	0.13	0.14	0.16	0.33	0.31	0.3	0.36	0.28	0.31	0.38	0.12	0.32	0.23	0.26	0.17
108-95-2	Phenol	0.009 U	0.0115 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U
100-01-6	p-Nitroaniline	0.0065 U	0.0085 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
129-00-0	Pyrene	0.65	0.88 J	0.82 J	1.2	1.2	1.7	8.2	2.2	1.6	1.6	1.4	0.98	6.5	2	1.8	2.3	6.6	3.1
7782-49-2	Selenium	0.435 U	0.6 U	1 J	0.5 U	0.5 U	0.475 U	0.55 U	0.47 U	0.42 U	0.425 U	0.44 U	0.455 U	0.445 U	0.445 U	0.445 U	0.43 U	0.455 U	0.43 U
7440-22-4	Silver	0.195 U	0.265 U	0.225 U	0.235 U	0.235 U	0.215 U	0.24 U	0.215 U	0.19 U	0.19 U	0.2 U	0.205 U	0.2 U	0.2 U	0.2 U	0.195 U	0.205 U	0.195 U
100-42-5	Styrene (monomer)	0.00023 U	0.00044 U	0.000325 U	0.00033 U	0.00034 U	1.35E-05 U	0.000425 U	0.000315 U	0.00023 U	0.000245 U	0.00024 U	0.000265 U	0.000235 U	0.00023 U	0.000235 U	0.000235 U	0.000245 U	0.00023 U
1634-04-4	tert-Butyl methyl ether	0.000175 U	0.000325 U	0.000245 U	0.000245 U	0.000255 U	2.15E-05 U	0.000315 U	0.000235 U	0.000175 U	0.00018 U	0.00018 U	0.0002 U	0.000175 U	0.000175 U	0.000175 U	0.000175 U	0.00018 U	0.00017 U
127-18-4	Tetrachloroethylene	0.000215 U	0.000405 U	0.000305 U	0.000305 U	0.00032 U	0.00002 U	0.000395 U	0.00029 U	0.000215 U	0.000225 U	0.000225 U	0.00025 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U
156-60-5	trans-1,2-Dichloroethene	0.000205 U	0.000385 U	0.00029 U	0.00029 U	0.0003 U	0.000029 U	0.000375 U	0.000275 U	0.000205 U	0.000215 U	0.00021 U	0.000235 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000215 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.000305 U	0.00023 U	0.00023 U	0.00024 U	0.000014 U	0.0003 U	0.00022 U	0.00016 U	0.00017 U	0.00017 U	0.000185 U	0.000165 U	0.00016 U	0.000165 U	0.000165 U	0.00017 U	0.00016 U
75-25-2	Tribromomethane	0.00021 U	0.000395 U	0.000295 U	0.0003 U	0.00031 U	0.000022 U	0.000385 U	0.000285 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.00022 U	0.00021 U
79-01-6	Trichloroethylene	0.000215 U	0.000405 U	0.000305 U	0.000305 U	0.00032 U	0.000026 U	0.000395 U	0.00029 U	0.000215 U	0.000225 U	0.000225 U	0.00025 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U
7440-62-2	Vanadium	3.7	13	11	8 J	5.5 J	4.9	6.1	4.9	3.9	5.7	2.2	3.2	1.8	1.8	1.3	1.3	2.4	2.6
75-01-4	Vinyl chloride	0.00013 U	0.000245 U	0.000185 U	0.000185 U	0.00019 U	0.000035 U	0.00024 U	0.000175 U	0.00013 U	0.000135 U	0.000135 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran																		
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin																		
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran																		
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran																		
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin																		
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran																		
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin																		
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran																		
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin																		
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran																		
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin																		
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran																		
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran																		
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran																		
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin																		
39001-02-0	Octachlorodibenzofuran																		
3268-87-9	Octachlorodibenzo-p-dioxin																		

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS019AA	SS019BA	SS019BB	SS020AA	SS020BA	SS020CA	SS020CC	SS020DA	SS021AA	SS021BA	SS022AA	SS022AB	SS022BA	SS022CA	SS022DA	SS023AA	SS023BA	SS023BB
	Sample Date	01-Dec-06	01-Dec-06	01-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	06-Dec-06	06-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000085 U	0.00007 U	0.00007 U	0.000075 U	0.00008 U	0.00007 U	0.00007 U	0.000075 U	0.00009 U	0.00008 U	0.00008 U	0.00007 U	0.000065 U	0.000065 U	0.000095 U	0.00007 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	4.45E-05 U	3.75E-05 U	0.000038 U	3.95E-05 U	0.000043 U	3.65E-05 U	0.000037 U	4.05E-05 U	4.95E-05 U	4.15E-05 U	0.000042 U	0.000038 U	3.45E-05 U	3.45E-05 U	0.000055 U	0.000038 U	3.55E-05 U	0.000036 U
79-00-5	1,1,2-Trichloroethane	0.00009 U	0.000075 U	0.000075 U	0.00008 U	0.000085 U	0.000075 U	0.000075 U	0.00008 U	0.0001 U	0.000085 U	0.000085 U	0.000075 U	0.00007 U	0.00007 U	0.000105 U	0.000075 U	0.00007 U	0.00007 U
75-34-3	1,1-Dichloroethane	4.25E-05 U	3.55E-05 U	0.000036 U	3.75E-05 U	4.15E-05 U	0.000035 U	3.55E-05 U	0.000039 U	0.000047 U	3.95E-05 U	0.00004 U	3.65E-05 U	0.000033 U	0.000033 U	0.000049 U	3.65E-05 U	0.000034 U	0.000034 U
75-35-4	1,1-Dichloroethylene	0.000115 U	0.0001 U	0.0001 U	0.000105 U	0.000115 U	0.000095 U	0.000095 U	0.000105 U	0.00013 U	0.00011 U	0.00011 U	0.0001 U	0.00009 U	0.00009 U	0.000135 U	0.0001 U	0.000095 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.000105 U	0.000085 U	0.00009 U	0.00009 U	0.0001 U	0.000085 U	0.000085 U	0.000095 U	0.000115 UJ	0.000095 UJ	0.000095 U	0.00009 UJ	0.00008 U	0.00008 U	0.00012 U	0.00009 U	0.000085 U	0.000085 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00033 U	0.00028 U	0.00028 U	0.000295 UJ	0.00032 UJ	0.00027 UJ	0.000275 UJ	0.000305 UJ	0.000365 UJ	0.00031 UJ	0.00031 UJ	0.000285 UJ	0.000255 UJ	0.000255 UJ	0.00038 UJ	0.000285 U	0.000265 U	0.000265 U
106-93-4	1,2-Dibromoethane	0.000038 U	3.15E-05 U	0.000032 U	3.35E-05 U	3.65E-05 U	0.000031 U	3.15E-05 U	3.45E-05 U	0.000042 U	3.55E-05 U	3.55E-05 U	3.25E-05 U	2.95E-05 U	2.95E-05 U	4.35E-05 U	3.25E-05 U	3.05E-05 U	3.05E-05 U
95-50-1	1,2-Dichlorobenzene	0.000055 U	0.000044 U	4.45E-05 U	4.65E-05 U	0.000055 U	0.000043 U	4.35E-05 U	0.000048 U	0.00006 UJ	0.000049 UJ	4.95E-05 U	0.000045 UJ	4.05E-05 U	4.05E-05 U	0.000065 U	0.000045 U	0.000042 U	0.000042 U
107-06-2	1,2-Dichloroethane	0.00007 U	0.00006 U	0.00006 U	0.00006 U	0.00007 U	0.000055 U	0.00006 U	0.000065 U	0.000075 U	0.000065 U	0.000065 U	0.00006 U	0.000055 U	0.000055 U	0.00008 U	0.00006 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	3.65E-05 U	3.05E-05 U	0.000031 U	3.25E-05 U	3.55E-05 U	0.00003 U	3.05E-05 U	3.35E-05 U	4.05E-05 U	0.000034 U	3.45E-05 U	0.000031 U	2.85E-05 U	0.000028 U	0.000042 U	3.15E-05 U	2.95E-05 U	2.95E-05 U
106-46-7	1,4-Dichlorobenzene	0.00006 U	0.000049 U	0.00005 U	0.000055 U	0.00006 U	0.000048 U	4.85E-05 U	0.000055 U	0.000065 UJ	0.000055 UJ	0.000055 U	0.00005 UJ	4.55E-05 U	4.55E-05 U	0.00007 U	0.00005 U	0.000047 U	0.000047 U
95-95-4	2,4,5-Trichlorophenol	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.009 U	0.008 U	0.0075 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.02 U	0.02 U	0.02 U	0.0205 U	0.021 U	0.02 U	0.02 U	0.0205 U	0.024 U	0.0215 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.0195 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 U	0.0105 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.0115 U	0.0105 U	0.011 U	0.011 U	0.043 J	0.0115 U	0.0105 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 UJ	0.0065 UJ	0.0065 UJ
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.0055 U	0.006 U	0.007 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.02 U	0.02 U	0.02 U	0.0205 U	0.021 U	0.02 U	0.02 U	0.0205 U	0.024 U	0.0215 U	0.02 U	0.02 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.0195 U
91-58-7	2-Chloronaphthalene	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.011 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.01 U	0.0105 U	0.012 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.024 J	0.019 J	0.0085 U	0.009 U	0.0009 U	0.0037 J	0.0034 J	0.003 J	0.56	0.5	0.00085 U	0.00085 U	0.0008 U	0.0008 U	0.0036 J	0.11 J	0.0085 U	0.0085 U
95-48-7	2-Methylphenol (o-cresol)	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.0125 UJ	0.0125 UJ	0.0125 UJ	0.0125 U	0.013 U	0.0125 U	0.0125 U	0.0125 U	0.015 U	0.013 U	0.012 U	0.0125 U	0.0115 U	0.0115 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ
88-75-5	2-Nitrophenol	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.0095 U	0.0085 U	0.008 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.019 U	0.019 U	0.019 U	0.0195 U	0.02 U	0.019 U	0.019 U	0.0195 U	0.023 U	0.0205 U	0.0185 U	0.019 U	0.018 U	0.018 U	0.018 U	0.019 U	0.0185 U	0.0185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.0075 UJ	0.0075 UJ	0.0075 UJ	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.009 U	0.008 U	0.0075 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 U	0.0105 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0049 U	0.00485 U	0.00495 U	0.0055 U	0.0055 U	0.0055 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.0055 U	0.006 U	0.007 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.011 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.013 U	0.0125 U	0.0125 U	0.0125 U	0.015 U	0.013 U	0.012 U	0.0125 U	0.0115 U	0.0115 U	0.012 U	0.012 U	0.012 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.0145 U	0.0145 U	0.0145 U	0.015 U	0.0155 U	0.0145 U	0.0145 U	0.015 U	0.0175 U	0.0155 U	0.0145 U	0.0145 U	0.014 U	0.0135 U	0.014 U	0.0145 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 UJ	0.0105 UJ	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 UJ	0.0095 UJ	0.0095 UJ
83-32-9	Acenaphthene	0.015 U	0.015 U	0.015 U	0.0155 U	0.0016 U	0.0015 UJ	0.00155 UJ	0.00155 UJ	0.36 J	0.33 J	0.0045 J	0.0049 J	0.00145 U	0.0014 U	0.00145 UJ	0.075 U	0.015 UJ	0.015 U
208-96-8	Acenaphthylene	0.076	0.059 J	0.052 J	0.26	0.066	0.019	0.018	0.019	5.5	4.3	0.048	0.043	0.0066 J	0.00135 U	0.0014 U	1.1	0.087 J	0.069 J
67-64-1	Acetone	0.0017 U	0.00145 U	0.00145 U	0.091 J	0.3	0.017 J	0.024 J	0.048 J	0.0019 U	0.0016 U	0.1 J	0.11 J	0.029 J	0.0091 J	0.03 J	0.00145 U	0.00135 U	0.00135 U
120-12-7	Anthracene	0.15	0.16 J	0.099 J	0.39	0.11	0.032	0.028	0.024	9.7	7.8	0.11	0.11	0.018	0.0029 J	0.0038	1.7	0.14 J	0.1 J
7440-36-0	Antimony	0.175 U	0.175 U	0.185 U	1.2 J	0.78 J	0.56 J	0.18 UJ	0.19 UJ	31	11	0.18 UJ	0.37 J	0.175 UJ	0.17 UJ	0.17 UJ	0.18 U	0.175 U	0.18 U
7440-38-2	Arsenic	5.6 J	3.9 J	4.4 J	35	85	9.2	9.9	3.8	1500	600	4.2	4.2	1.2	0.96	0.205 U	16	13 J	18 J
7440-39-3	Barium	8.9	6.2	7	12	12	12	12	12	68	57	8.1	7.9	2.9	2.9	3.3	10	7.6	9.9
71-43-2	Benzene	0.000265 U	0.00022 U	0.000225 U	0.000235 U	0.000255 U	0.000215 U	0.00022 U	0.00024 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000205 U	0.000205 U	0.000305 U	0.000225 U	0.00021 U	0.00021 U
56-55-3	Benzo(a)anthracene	0.41	0.54 J	0.22 J	0.44	0.097	0.024	0.025	0.023	11	8.7	0.059	0.052	0.0084	0.00026 U	0.0014 J	2.3	0.15 J	0.14 J
50-32-8	Benzo(a)pyrene	0.52	0.58 J	0.27 J	0.62	0.14	0.032	0.033	0.031	14	10	0.076	0.072	0.01	0.0006 U	0.0006 U	1.9	0.14 J	0.12 J
205-99-2	Benzo(b)fluoranthene	0.68	0.73 J	0.4 J	1.4	0.33	0.07	0.079	0.071	23	18	0.21	0.2	0.029	0.000415 U	0.0031 J	5	0.37 J	0.31 J
191-24-2	Benzo(g,h,i)perylene	0.48	0.46 J	0.26 J	0.47	0.098	0.026	0.026	0.024	13	8.7	0.065	0.057	0.0098	0.00034 U	0.00099 J	1.4	0.12 J	0.12 J
207-08-9	Benzo(k)fluoranthene	0.59	0.55 J	0.29 J	0.66	0.15	0.034	0.035	0.034	16	12	0.083	0.072	0.012	0.00034 U	0.0014 J	3.4	0.26 J	0.24 J
85-68-7	Benzyl butyl phthalate	0.045 J	0.023 J	0.028 J	0.0105 U	0.0105 U	0.01 U	0.01 U	0.0105 U	0.012 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.01 U
92-52-4	Biphenyl	0.085 U	0.085 U	0.085 U	0.09 U	0.09 U	0.085 U	0.085 U	0.09 U	0.1 U	0.09 U	0.085 UJ	0.085 U	0.08 U	0.08 U	0.08 U	0.085 U	0.085 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 U	0.0105 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.0085 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.012 UJ	0.0115 UJ	0.0115 UJ	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.014 UJ	0.0125 UJ	0.0115 U	0.012 U	0.011 U	0.011 U	0.0115 U	0.0115 UJ	0.0115 UJ	0.0115 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.06 J	0.032 J	0.027 J	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.011 U	0.033 J	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U
75-27-4	Bromodichloromethane	0.0002 U	0.000165 U	0.00017 U	0.000175 U	0.00019 U	0.00016 U	0.000165 U	0.00018 U	0.00022 U	0.000185 U	0.000185 U	0.00017 U	0.000155 U	0.000155 U	0.000225 U	0.00017 U	0.00016 U	0.00016 U
74-83-9	Bromomethane	0.00022 U	0.00018 U	0.000185 U	0.000195 UJ	0.00021 UJ	0.00018 UJ	0.00018 UJ	0.0002 UJ	0.00024 UJ	0.000205 UJ	0.000205 UJ	0.000185 UJ	0.00017 UJ	0.00017 UJ	0.00025 UJ	0.000185 U	0.000175 U	0.000175 U
7440-43-9	Cadmium	0.15 U	0.145 U	0.155 U	0.165 U	0.165 U	0.155 U	0.15 U	0.165 U	1.5	0.52 J	0.155 U	0.155 U	0.15 U	0.145 U	0.145 U	0.155 U	0.15 U	0.155 U
86-74-8	Carbazole	0.051 J	0.029 J	0.024 J	0.084 J	0.019 J	0.009 U	0.009 U	0.0095 U	1.4	0.81	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.06 J	0.038 J	0.023 J
75-15-0	Carbon disulfide	0.0011 U	0.0009 U	0.00095 U	0.001 U	0.00105 U	0.0009 U	0.0009 U	0.001 U	0.0012 U	0.00105 U	0.00105 U	0.00095 U	0.00085 U	0.00085 U	0.00125 U	0.00095 U	0.0009 U	0.0009 U
56-23-5	Carbon tetrachloride	0.00024 U	0.0002 U	0.0002 U	0.00021 U	0.00023 U	0.000195 U	0.000195 U	0.000215 U	0.000265 U	0.00022 U	0.000225 U	0.000205 U	0.000185 U	0.000185 U	0.000275 U	0.000205 U	0.00019 U	0.00019 U
108-90-7	Chlorobenzene	0.00027 U	0.000225 U	0.00023 U	0.00024 U	0.000265 U	0.00022 U	0.000225 U	0.00025 U	0.0003 U	0.000255 U	0.000255 U	0.00023 U	0.00021 U	0.00021 U	0.000315 U	0.00023 U	0.00022 U	0.00022 U
124-48-1	Chlorodibromomethane	0.00017 U	0.000145 U	0.000145 U	0.00015 U	0.000165 U	0.00014 U	0.00014 U	0.000155 U	0.00019 U	0.00016 U	0.00016 U	0.000145 U	0.00013 U	0.00013 U	0.000195 U	0.000145 U	0.000135 U	0.000135 U
75-00-3	Chloroethane	0.000245 U	0.000205 U	0.00021 U	0.000215 UJ	0.000235 UJ	0.0002 UJ	0.000205 UJ	0.000225 UJ	0.00027 U	0.00023 U	0.00023 UJ	0.00021 UJ	0.00019 UJ	0.00019 UJ	0.00028 UJ	0.00021 U	0.000195 U	0.000195 U
67-66-3	Chloroform	0.00023 U	0.000195 U	0.000195 U	0.000205 U	0.000225 U	0.00019 U	0.00019 U	0.00021 U	0.000255 U	0.000215 U	0.000215 U	0.000195 U	0.00018 U	0.00018 U	0.000265 U	0.0002 U	0.000185 U	0.000185 U
74-87-3	Chloromethane	0.000305 U	0.000255 U	0.00026 U	0.00027 U	0.000295 U	0.00025 U	0.000255 U	0.00028 U	0.000335 U	0.000285 U	0.000285 U	0.00026 U	0.000235 U	0.000235 U	0.00035 U	0.00026 U	0.000245 U	0.000245 U
7440-47-3	Chromium	12 J	6.9 J	8.3 J	210	62	15	34	23	2600	1000	10	9.6	2.5	0.96 J	0.95 J	27	9.6 J	14 J
218-01-9	Chrysene	0.6	0.67 J	0.32 J	0.64	0.14	0.035	0.037	0.033	15	11	0.1	0.088	0.016	0.00025 U	0.0019 J	4.6	0.34 J	0.29 J
156-59-2	cis-1,2-Dichloroethylene	0.000175 U	0.00015 U	0.00015 U	0.000155 U	0.00017 U	0.000145 U	0.000145 U	0.00016 U	0.000195 U	0.000165 U	0.000165 U	0.00015 U	0.000135 U	0.000135 U	0.000205 U	0.00015 U	0.00014 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.0002 U	0.000165 U	0.00017 U	0.000175 U	0.00019 U	0.00016 U	0.000165 U	0.00018 U	0.00022 U	0.000185 U	0.000185 U	0.00017 U	0.000155 U	0.000155 U	0.000225 U	0.00017 U	0.00016 U	0.00016 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS019AA	SS019BA	SS019BB	SS020AA	SS020BA	SS020CA	SS020CC	SS020DA	SS021AA	SS021BA	SS022AA	SS022AB	SS022BA	SS022CA	SS022DA	SS023AA	SS023BA	SS023BB
	Sample Date	01-Dec-06	01-Dec-06	01-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	06-Dec-06	06-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	7.8	5	5.5	44	11	1.7	5.6	3.3	1100	440	6	5.6	1.1	0.15 U	0.15 U	22	12	14
110-82-7	Cyclohexane	0.00026 U	0.000215 U	0.00022 U	0.00023 U	0.00025 U	0.00021 U	0.000215 U	0.000235 U	0.000285 U	0.00024 U	0.00024 U	0.00022 U	0.0002 U	0.0002 U	0.000295 U	0.00022 U	0.000205 U	0.000205 U
53-70-3	Dibenzo(a,h)anthracene	0.12	0.13 J	0.066 J	0.17	0.038	0.0097	0.0098	0.0091	4.1	3	0.024	0.021	0.0033 J	0.000265 U	0.00027 U	0.46	0.033 J	0.033 J
132-64-9	Dibenzofuran	0.03 J	0.016 J	0.0075 U	0.075 J	0.025 J	0.066 J	0.0075 U	0.0075 U	0.3	0.48	0.083 J	0.089 J	0.087 J	0.059 J	0.007 U	0.0075 U	0.007 U	0.007 U
75-09-2	Dichloromethane	0.000265 U	0.00022 U	0.000225 U	0.000235 U	0.0085 J	0.0062 J	0.0077 J	0.00024 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000205 U	0.000205 U	0.000305 U	0.000225 U	0.00021 U	0.00021 U
84-66-2	Diethyl phthalate	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.0055 U	0.006 U	0.007 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.034 U	0.0335 U	0.0335 U	0.035 U	0.0355 U	0.034 U	0.034 U	0.035 U	0.041 U	0.036 U	0.0335 U	0.034 U	0.032 U	0.0315 U	0.0325 U	0.0335 U	0.033 U	0.033 U
117-84-0	di-n-Octyl-phthalate	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.0085 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U
100-41-4	Ethylbenzene	0.000285 U	0.00024 U	0.00024 U	0.00025 U	0.000275 U	0.000235 U	0.000235 U	0.00026 U	0.000315 U	0.000265 U	0.000265 U	0.000245 U	0.00022 U	0.00022 U	0.00033 U	0.000245 U	0.00023 U	0.00023 U
206-44-0	Fluoranthene	0.89	0.98 J	0.46 J	0.63	0.13	0.035	0.036	0.034	16	12	0.095	0.083	0.015	0.0021 J	0.0044	4.3	0.46 J	0.42 J
86-73-7	Fluorene	0.0085 U	0.023 J	0.0085 U	0.009 U	0.0009 U	0.00085 UJ	0.00085 UJ	0.0009 UJ	0.43	0.36	0.0044 J	0.0043 J	0.0008 U	0.0008 U	0.0008 UJ	0.041 U	0.0085 UJ	0.0085 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 U	0.0105 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0046 U	0.00455 U	0.00455 U	0.00475 U	0.00485 U	0.0046 U	0.00465 U	0.00475 U	0.006 U	0.0049 U	0.00455 UJ	0.0046 U	0.00435 U	0.0043 U	0.0044 U	0.00455 U	0.0045 U	0.0045 U
77-47-4	Hexachlorocyclopentadiene	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 UJ	0.006 UJ	0.006 UJ
67-72-1	Hexachloroethane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.0115 U	0.0105 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.55	0.55 J	0.3 J	0.51	0.1	0.029	0.029	0.026	15	11	0.067	0.059	0.01	0.000455 U	0.001 J	1.9	0.15 J	0.15 J
98-82-8	Isopropylbenzene	0.00031 U	0.00026 U	0.000265 U	0.000275 U	0.0003 U	0.000255 U	0.00026 U	0.000285 U	0.000345 UJ	0.00029 UJ	0.00029 U	0.000265 UJ	0.00024 U	0.00024 U	0.00036 U	0.000265 U	0.00025 U	0.00025 U
7439-92-1	Lead	54	33	40	23	10	4.8 J	6.6	5.3	110	52	18	18	5	1.1	0.88	9.1	7.5	9.1
136777-61-2	m,p-Xylenes	0.0006 U	0.00049 U	0.0005 U	0.00055 U	0.0006 U	0.00048 U	0.000485 U	0.00055 U	0.00065 U	0.00055 U	0.00055 U	0.0005 U	0.000455 U	0.000455 U	0.0007 U	0.0005 U	0.00047 U	0.00047 U
541-73-1	m-Dichlorobenzene	0.000034 U	2.85E-05 U	0.000029 U	0.00003 U	0.000033 U	2.75E-05 U	0.000028 U	0.000031 U	3.75E-05 UJ	3.15E-05 UJ	0.000032 U	0.000029 UJ	0.000026 U	0.000026 U	0.000039 U	0.000029 U	0.000027 U	0.000027 U
7439-97-6	Mercury	0.054 J	0.047 J	0.045	0.13	0.042	0.042	0.028	0.033	1.7	2.1	0.054	0.054	0.016 J	0.0072 J	0.0046 J	0.028	0.02 J	0.02 J
79-20-9	Methyl acetate	0.00013 U	0.00011 U	0.00011 U	0.000115 U	0.000125 U	0.000105 U	0.00011 U	0.00012 U	0.000145 U	0.00012 U	0.00012 U	0.00011 U	0.0001 U	0.0001 U	0.00015 U	0.00011 U	0.000105 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.00075 U	0.00065 U	0.00065 U	0.0029 J	0.00075 U	0.00065 U	0.00065 U	0.0007 U	0.00085 U	0.0007 U	0.0022 J	0.0032 J	0.0006 U	0.0006 U	0.0009 U	0.00065 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00048 U	0.0004 U	0.000405 U	0.000425 U	0.000465 U	0.00039 U	0.0004 U	0.00044 U	0.00055 U	0.000445 U	0.00045 U	0.00041 U	0.00037 U	0.00037 U	0.0006 U	0.00041 U	0.000385 U	0.000385 U
591-78-6	Methyl n-butyl ketone	0.0007 U	0.0006 U	0.0006 U	0.0006 UJ	0.0007 UJ	0.00055 UJ	0.0006 UJ	0.00065 UJ	0.00075 U	0.00065 U	0.00065 UJ	0.0006 UJ	0.00055 UJ	0.00055 UJ	0.0008 UJ	0.0006 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.000285 U	0.00024 U	0.00024 U	0.00025 U	0.000275 U	0.000235 U	0.000235 U	0.00056 J	0.000315 U	0.000265 U	0.000265 U	0.0006 J	0.00022 U	0.00022 U	0.00033 U	0.000245 U	0.00023 U	0.00023 U
108-87-2	Methylcylohexane	0.0003 U	0.00025 U	0.000255 U	0.000265 U	0.00029 U	0.000245 U	0.000245 U	0.00027 U	0.00033 U	0.00028 U	0.00028 U	0.000255 U	0.00023 U	0.00023 U	0.000345 U	0.000255 U	0.00024 U	0.00024 U
91-20-3	Naphthalene	0.029 J	0.023 J	0.02 J	0.00295 U	0.0003 U	0.0094 J	0.0087 J	0.0066 J	0.76	0.77	0.00028 U	0.00028 U	0.000265 U	0.000265 U	0.0083 J	0.13 J	0.022 J	0.016 J
98-95-3	Nitrobenzene	0.0115 U	0.011 U	0.011 U	0.0115 U	0.012 U	0.011 U	0.0115 U	0.0115 U	0.0135 U	0.012 U	0.011 U	0.011 U	0.0105 U	0.0105 U	0.011 U	0.011 U	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 UJ	0.01 UJ	0.01 UJ	0.0105 U	0.0105 U	0.01 U	0.01 U	0.0105 U	0.012 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.00027 U	0.000225 U	0.00023 U	0.00024 U	0.000265 U	0.00022 U	0.000225 U	0.00025 U	0.0003 U	0.000255 U	0.000255 U	0.00023 U	0.00021 U	0.00021 U	0.000315 U	0.00023 U	0.00022 U	0.00022 U
106-47-8	p-Chloroaniline	0.0145 U	0.0145 U	0.0145 U	0.015 U	0.0155 U	0.0145 U	0.0145 U	0.015 U	0.0175 U	0.0155 U	0.0145 U	0.0145 U	0.014 U	0.0135 U	0.014 U	0.0145 U	0.014 U	0.014 U
87-86-5	Pentachlorophenol	0.16 J	0.085 J	0.067 J	0.73	0.2	0.046	0.046	0.036 J	15 J	7.9 J	0.031 J	0.028 J	0.0042 J	0.000365 U	0.000375 U	1.6 J	0.13 J	0.14 J
85-01-8	Phenanthrene	0.35	0.41 J	0.15 J	0.12	0.00195 U	0.01 J	0.0089 J	0.0098 J	4.1	2.4	0.00185 U	0.00185 U	0.00175 U	0.00175 U	0.0066 J	0.62	0.074 J	0.061 J
108-95-2	Phenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.011 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.007 U	0.007 U	0.007 U	0.007 UJ	0.007 UJ	0.007 UJ	0.007 U	0.007 U	0.008 U	0.0075 U	0.007 UJ	0.007 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.007 U	0.0065 U	0.0065 U
129-00-0	Pyrene	0.75	0.83 J	0.39 J	0.91	0.19	0.049	0.052	0.048	17	13	0.11	0.1	0.018	0.0017 J	0.0038	4.3	0.41 J	0.36 J
7782-49-2	Selenium	0.43 U	0.425 U	0.455 U	0.475 U	0.48 U	0.96 J	0.44 U	0.47 U	1.6	0.495 U	0.45 U	0.455 U	0.435 U	0.42 U	0.425 U	0.445 U	0.43 U	0.45 U
7440-22-4	Silver	0.195 U	0.195 U	0.205 U	0.215 U	0.215 U	0.2 U	0.2 U	0.21 U	0.245 U	0.225 U	0.205 U	0.205 U	0.195 U	0.19 U	0.19 U	0.2 U	0.195 U	0.205 U
100-42-5	Styrene (monomer)	0.00029 U	0.000245 U	0.00025 U	0.00026 U	0.00028 U	0.00024 U	0.00024 U	0.000265 U	0.00032 U	0.00027 U	0.000275 U	0.00025 U	0.000225 U	0.000225 U	0.000335 U	0.00025 U	0.000235 U	0.000235 U
1634-04-4	tert-Butyl methyl ether	0.00022 U	0.00018 U	0.000185 U	0.000195 U	0.00021 U	0.00018 U	0.00018 U	0.0002 U	0.00024 U	0.000205 U	0.000205 U	0.000185 U	0.00017 U	0.00017 U	0.00025 U	0.000185 U	0.000175 U	0.000175 U
127-18-4	Tetrachloroethylene	0.00027 U	0.000225 U	0.00023 U	0.00024 U	0.000265 U	0.00022 U	0.000225 U	0.00025 U	0.0003 U	0.000255 U	0.000255 U	0.00023 U	0.00021 U	0.00021 U	0.000315 U	0.00023 U	0.00022 U	0.00022 U
156-60-5	trans-1,2-Dichloroethene	0.00026 U	0.000215 U	0.00022 U	0.00023 U	0.00025 U	0.00021 U	0.000215 U	0.000235 U	0.000285 U	0.00024 U	0.00024 U	0.00022 U	0.0002 U	0.0002 U	0.000295 U	0.00022 U	0.000205 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.000205 U	0.00017 U	0.000175 U	0.00018 U	0.0002 U	0.000165 U	0.00017 U	0.000185 U	0.000225 U	0.00019 U	0.00019 U	0.000175 U	0.00016 U	0.00016 U	0.000235 U	0.000175 U	0.000165 U	0.000165 U
75-25-2	Tribromomethane	0.000265 U	0.00022 U	0.000225 U	0.000235 U	0.000255 U	0.000215 U	0.00022 U	0.00024 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000205 U	0.000205 U	0.000305 U	0.000225 U	0.00021 U	0.00021 U
79-01-6	Trichloroethylene	0.00027 U	0.000225 U	0.00023 U	0.00024 U	0.000265 U	0.00022 U	0.000225 U	0.00025 U	0.0003 U	0.000255 U	0.000255 U	0.00023 U	0.00021 U	0.00021 U	0.000315 U	0.00023 U	0.00022 U	0.00022 U
7440-62-2	Vanadium	2.1	1.6	1.8	0.5 U	3.6	4.1 J	3.4	5.6	0.6 U	0.55 U	1.4	1.1 J	0.465 U	0.45 U	0.455 U	1.2 J	1.3 J	1.5 J
75-01-4	Vinyl chloride	0.000165 U	0.000135 U	0.00014 U	0.000145 U	0.00016 U	0.000135 U	0.000135 U	0.00015 U	0.00018 U	0.000155 U	0.000155 U	0.00014 U	0.000125 U	0.000125 U	0.00019 U	0.00014 U	0.00013 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran				0.00518	0.001095	0.000405	0.000345	0.000576			0.000379	0.000302	5.29E-05	8.98E-06	5.16E-06 J			
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin				0.0371	0.010099	0.003906	0.003491	0.005138			0.002623	0.002673	0.000405	9.74E-05	5.98E-05			
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran				0.000289	7.19E-05	2.64E-05	2.19E-05	3.77E-05			2.08E-05	1.57E-05	2.75E-06 J	5.19E-07 J	4.12E-07 J			
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran				0.000104	2.31E-05	7.44E-06	6.37E-06	1.25E-05			1.54E-05	1.22E-05	8.58E-07 U	2.15E-07 U	5.29E-07 J			
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin				0.000223	4.87E-05	1.77E-05	1.52E-05	2.66E-05			2.45E-05	1.92E-05	2.96E-06 J	2.69E-07 U	5.85E-07 J			
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran				5.31E-05 J	1.03E-05	3.55E-06 J	3.21E-06 J	5.69E-06			9.81E-06	7.95E-06	9.98E-07 J	1.36E-07 U	1.92E-07 U			
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin				0.00104	0.000227	8.3E-05	7.2E-05	0.00011			6.81E-05	5.47E-05	9.17E-06	5.02E-06 J	1.49E-06 J			
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran				1.55E-05	4.05E-08 U	3.32E-07 J	2.45E-08 U	2.37E-07 U			4.01E-07 U	1.16E-07 U	1.83E-07 U	1.35E-07 U	2.25E-08 U			
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin				0.000403	0.000106	4.02E-05	3.21E-05	5.52E-05			6.9E-05	5.71E-05	9.48E-06	1.23E-06 U	1.16E-06 J			
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran				3.43E-06	1.35E-06 J	5.28E-07 J	4.18E-07 J	8.07E-07 J			1.44E-06 J	1.11E-06 J	2.32E-07 J	1.19E-07 J	2.75E-07 J			
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin				5.51E-05	1.19E-05	4.6E-06 J	3.62E-06 J	6.3E-06			8.03E-06	6.35E-06	9.86E-07 J	4.37E-07 J	3.88E-07 J			
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran				0.000111	9.65E-06	3.58E-06 J	2.79E-06 J	4.88E-06 J			1.59E-05	1.27E-05	1.85E-06 J	2.07E-07 U	4.32E-07 J			
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran				1.15E-05	1.31E-06 J	4.11E-07 J	4.05E-07 J	8.05E-07 J			2.48E-06 J	1.97E-06 J	4.36E-07 J	1.67E-07 J	4.57E-07 J			
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran				4.88E-07 U	1.64E-07 U	2.6E-08 U	2E-08 U	1.81E-07 U			8.79E-07 J	2.97E-07 U	3.45E-08 U	3.35E-08 U	1.45E-07 U			
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin				2.32E-06	2.38E-07 U	2.25E-08 U	1.4E-08 U	1.85E-08 U			1.26E-07 U	1.55E-07 U	2.75E-08 U	3.2E-08 U	9E-09 U			
39001-02-0	Octachlorodibenzofuran				0.0275	0.009484	0.002802	0.002387	0.00394			0.001977	0.001587	0.000261	3.54E-05	2.27E-05			
3268-87-9	Octachlorodibenzo-p-dioxin				0.351	0.079284 J	0.02708	0.03125	0.045545 J			0.026076	0.026724	0.003752	0.000733	0.000449			

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS024AA	SS024BA	SS024CA	SS024DA	SS025AA	SS025BA	SS026AA	SS026BA	SS026CA	SS026CC	SS026DA	SS027AA	SS027BA	SS028AA	SS028AB	SS028BA	SS028CA	SS028DA
	Sample Date	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	04-Dec-06	04-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	04-Dec-06	04-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.0001 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00013 U	0.0001 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	0.000035 U	3.55E-05 U	0.000034 U	3.55E-05 U	0.000055 U	0.000037 U	0.000035 U	0.000035 U	0.000035 U	0.000035 U	3.55E-05 U	0.000075 U	0.000055 U	3.45E-05 U	3.45E-05 U	0.000034 U	3.55E-05 U	3.55E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000105 U	0.000075 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000145 U	0.00011 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U
75-34-3	1,1-Dichloroethane	3.35E-05 U	0.000034 U	3.25E-05 U	0.000034 U	0.00005 U	0.000035 U	3.35E-05 U	3.35E-05 U	0.000033 U	0.000033 U	0.000034 U	0.00007 U	0.000055 U	0.000033 U	0.000033 U	3.25E-05 U	3.35E-05 U	0.000034 U
75-35-4	1,1-Dichloroethylene	0.000095 U	0.000095 U	0.00009 U	0.000095 U	0.000135 U	0.000095 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.000095 U	0.000185 U	0.000145 U	0.00009 U	0.00009 U	0.00009 U	0.000095 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.000085 U	0.00008 U	0.000085 U	0.00012 U	0.000085 UJ	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.000085 U	0.000165 UJ	0.000125 UJ	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00026 U	0.000265 U	0.000255 U	0.000265 U	0.00039 U	0.000275 UJ	0.00026 UJ	0.00026 UJ	0.00026 UJ	0.00026 UJ	0.000265 UJ	0.00055 UJ	0.00041 UJ	0.00026 U	0.00026 U	0.000255 U	0.000265 U	0.000265 U
106-93-4	1,2-Dibromoethane	0.00003 U	0.00003 U	0.000029 U	3.05E-05 U	4.45E-05 U	3.15E-05 U	0.00003 U	0.00003 U	2.95E-05 U	2.95E-05 U	0.00003 U	0.000065 U	4.65E-05 U	2.95E-05 U	2.95E-05 U	0.000029 U	0.00003 U	0.00003 U
95-50-1	1,2-Dichlorobenzene	4.15E-05 U	0.000042 U	4.05E-05 U	0.000042 U	0.000065 U	4.35E-05 UJ	4.15E-05 U	4.15E-05 U	0.000041 U	0.000041 U	0.000042 U	0.000085 UJ	0.000065 UJ	0.000041 U	0.000041 U	4.05E-05 U	4.15E-05 U	0.000042 U
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00008 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00011 U	0.000085 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.000029 U	0.000029 U	0.000028 U	2.95E-05 U	0.000043 U	0.00003 U	0.000029 U	0.000029 U	2.85E-05 U	2.85E-05 U	0.000029 U	0.00006 U	0.000045 U	2.85E-05 U	2.85E-05 U	0.000028 U	0.000029 U	0.000029 U
106-46-7	1,4-Dichlorobenzene	4.65E-05 U	0.000047 U	0.000045 U	0.000047 U	0.00007 U	4.85E-05 UJ	0.000046 U	0.000046 U	0.000046 U	0.000046 U	4.65E-05 U	0.000095 UJ	0.000075 UJ	4.55E-05 U	4.55E-05 U	0.000045 U	4.65E-05 U	4.65E-05 U
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.07 U	0.007 U	0.007 U	0.007 U	0.007 U	0.01 U	0.01 U	0.07 U	0.07 U	0.007 U	0.007 U	0.007 UJ
88-06-2	2,4,6-Trichlorophenol	0.0195 U	0.0195 U	0.019 U	0.0195 U	0.022 U	0.02 U	0.19 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.028 U	0.027 U	0.19 U	0.19 U	0.0185 U	0.0195 U	0.0195 UJ
120-83-2	2,4-Dichlorophenol	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 U	0.0095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 U	0.09 U	0.09 U	0.009 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0115 U	0.011 U	0.1 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.015 U	0.014 U	0.1 U	0.1 U	0.01 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0095 U	0.009 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 UJ
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.008 U	0.0075 U	0.055 U	0.055 U	0.005 U	0.0055 U	0.0055 UJ
606-20-2	2,6-Dinitrotoluene	0.0195 U	0.0195 U	0.019 U	0.0195 U	0.022 U	0.02 U	0.19 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.028 U	0.027 U	0.19 U	0.19 U	0.0185 U	0.0195 U	0.0195 UJ
91-58-7	2-Chloronaphthalene	0.009 U	0.009 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0125 U	0.012 U	0.085 U	0.085 U	0.0085 U	0.009 U	0.009 UJ
95-57-8	2-Chlorophenol	0.01 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.01 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.014 U	0.0135 U	0.095 U	0.095 U	0.0095 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.04	0.027	0.0008 UJ	0.036 J	0.03 J	0.028 J	0.08 U	0.027 J	0.0008 U	0.0008 U	0.00085 U	0.035 J	0.0115 U	0.08 U	0.08 U	0.0155 U	0.016 U	0.008 U
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0095 U	0.009 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.012 U	0.012 U	0.0115 U	0.012 U	0.0135 UJ	0.0125 UJ	0.12 U	0.012 U	0.0115 U	0.0115 U	0.012 U	0.017 UJ	0.0165 UJ	0.115 U	0.115 U	0.0115 U	0.012 U	0.012 UJ
88-75-5	2-Nitrophenol	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.0085 U	0.008 U	0.075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.011 U	0.0105 U	0.075 U	0.075 U	0.0075 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.0185 U	0.0185 U	0.018 U	0.0185 U	0.0205 U	0.019 U	0.18 U	0.018 U	0.018 U	0.018 U	0.0185 U	0.0265 U	0.0255 U	0.18 U	0.18 U	0.0175 U	0.0185 U	0.0185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.007 U	0.007 U	0.007 U	0.008 UJ	0.0075 UJ	0.07 U	0.007 U	0.007 U	0.007 U	0.007 U	0.01 UJ	0.01 U	0.07 U	0.07 U	0.007 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 U	0.0095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 U	0.09 U	0.09 U	0.009 U	0.0095 U	0.0095 UJ
534-52-1	4,6-Dinitro-2-Methylphenol	0.005 U	0.005 U	0.00485 U	0.0055 U	0.006 U	0.0055 U	0.0495 U	0.00495 U	0.0049 U	0.0049 U	0.005 U	0.0075 U	0.007 U	0.049 U	0.049 U	0.0048 U	0.005 UJ	0.005 UJ
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.008 U	0.0075 U	0.055 U	0.055 U	0.005 U	0.0055 UJ	0.0055 UJ
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.009 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0125 U	0.012 U	0.085 U	0.085 U	0.0085 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 U	0.012 U	0.0115 U	0.012 U	0.0135 U	0.0125 U	0.12 U	0.012 U	0.0115 U	0.0115 U	0.012 U	0.017 U	0.0165 U	0.115 U	0.115 U	0.0115 U	0.012 U	0.012 UJ
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.014 U	0.0135 U	0.014 U	0.016 U	0.0145 U	0.14 U	0.014 U	0.014 U	0.014 U	0.014 U	0.02 U	0.0195 U	0.14 U	0.14 U	0.0135 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 UJ	0.0095 UJ	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 UJ	0.09 UJ	0.09 UJ	0.009 UJ	0.0095 UJ	0.0095 UJ
83-32-9	Acenaphthene	0.01	0.01	0.0014 UJ	0.015 UJ	0.044 J	0.03 J	0.145 U	0.041 J	0.00145 U	0.00145 U	0.00145 U	0.047 J	0.02 U	0.145 U	0.145 U	0.028 U	0.029 U	0.0145 U
208-96-8	Acenaphthylene	0.1	0.079	0.0075	0.22	0.5	0.74	2.1	0.12	0.0076	0.0088	0.008	0.91	0.92	3.4	3.4	0.41	0.14 J	0.014 U
67-64-1	Acetone	0.0057 J	0.66	0.005 J	0.01 J	0.002 U	0.0014 U	0.012 J	0.0077 J	0.011 J	0.006 J	0.017 J	0.00275 U	0.0021 U	0.00135 U	0.00135 U	0.0013 U	0.00135 U	0.00135 U
120-12-7	Anthracene	0.18	0.15	0.0092 J	0.41	0.82	1.1	3.7	0.24	0.016	0.018	0.017	1.8	2	4.7	4.9	0.61	0.22	0.0033 U
7440-36-0	Antimony	0.18 UJ	0.18 UJ	0.175 UJ	0.175 UJ	0.69 J	0.18 UJ	0.175 UJ	0.18 UJ	0.165 UJ	0.175 UJ	0.175 UJ	0.255 UJ	0.245 UJ	0.175 U	0.175 U	0.17 U	0.18 U	0.17 U
7440-38-2	Arsenic	25	23	0.21 UJ	18	79 J	59 J	77	180	26	35	0.44 J	17 J	10 J	5	4.3	1.1	0.66	0.97
7440-39-3	Barium	8.1	8.5	5.3	14	16	16	23	16	8.9	10	9.8	14	15	7.8	6.1	1.6	2.6	19
71-43-2	Benzene	0.00021 U	0.00021 U	0.000205 U	0.00021 U	0.00031 U	0.00022 U	0.00021 U	0.00021 U	0.000205 U	0.000205 U	0.00021 U	0.000425 U	0.000325 U	0.000205 U	0.000205 U	0.000205 U	0.00021 U	0.00021 U
56-55-3	Benzo(a)anthracene	0.23	0.2	0.028	0.4	0.7 J	1.2	3.9	0.25	0.014	0.017	0.015	1.8	1.3	15	17	1.9	0.68	0.19
50-32-8	Benzo(a)pyrene	0.23	0.19	0.02	0.56	0.77 J	1.9	6.8	0.48	0.021	0.027	0.023	1.8	1.8	16	17	1.9	0.68	0.069
205-99-2	Benzo(b)fluoranthene	0.67 J	0.61 J	0.044	1.2	1.6 J	3	13	0.86	0.046	0.053	0.048	3.1	3.2	22	24	2.8	1	0.17
191-24-2	Benzo(g,h,i)perylene	0.19	0.15	0.016	0.56	0.59 J	1.1	7.6	0.41	0.026	0.032	0.029	1.3	1.4	6.5	6.3	0.76	0.26	0.047
207-08-9	Benzo(k)fluoranthene	0.24	0.22	0.024	0.59	1.2 J	2.3	6.1	0.45	0.023	0.029	0.025	2.4	2.3	20	19	2.3	0.87	0.13
85-68-7	Benzyl butyl phthalate	0.01 U	0.01 U	0.0095 U	0.01 U	0.011 U	0.01 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.014 U	0.0135 U	0.095 U	0.095 U	0.0095 U	0.01 U	0.01 U
92-52-4	Biphenyl	0.08 UJ	0.08 UJ	0.08 U	0.085 U	0.095 U	0.085 U	0.8 UJ	0.08 UJ	0.08 U	0.08 U	0.08 UJ	0.115 U	0.115 U	0.8 U	0.8 U	0.08 U	0.08 U	0.08 UJ
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 U	0.0095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 U	0.09 U	0.09 U	0.009 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.008 U	0.008 U	0.0085 U	0.0095 U	0.0085 U	0.08 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0115 U	0.0115 U	0.08 U	0.08 U	0.008 U	0.008 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 U	0.0115 U	0.011 U	0.0115 U	0.013 UJ	0.012 UJ	0.115 U	0.0115 U	0.011 U	0.011 U	0.0115 U	0.0165 UJ	0.0155 U	0.11 UJ	0.11 UJ	0.011 UJ	0.0115 UJ	0.0115 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.009 U	0.009 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.085 U	0.026 J	0.0085 U	0.0085 U	0.009 U	0.028 J	0.012 U	0.085 U	0.085 U	0.0085 U	0.009 U	0.009 U
75-27-4	Bromodichloromethane	0.000155 U	0.00016 U	0.00015 U	0.00016 U	0.00023 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000315 U	0.00024 U	0.000155 U	0.000155 U	0.00015 U	0.000155 U	0.000155 U
74-83-9	Bromomethane	0.00017 UJ	0.000175 UJ	0.000165 UJ	0.000175 UJ	0.000255 U	0.00018 U	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.000175 UJ	0.00035 U	0.000265 U	0.00017 U	0.00017 U	0.000165 U	0.000175 U	0.000175 U
7440-43-9	Cadmium	0.15 U	0.32 J	0.15 U	0.15 U	0.175 U	0.155 U	0.15 U	0.15 U	0.145 U	0.15 U	0.15 U	0.215 U	0.21 U	0.15 U	0.15 U	0.145 U	0.155 U	0.145 U
86-74-8	Carbazole	0.038 J	0.034 J	0.0085 U	0.061 J	0.16 J	0.15 J	0.9 J	0.052 J	0.0085 U	0.0085 U	0.009 U	0.41	0.86	0.7 J	0.6 J	0.11 J	0.009 UJ	0.009 UJ
75-15-0	Carbon disulfide	0.00085 U	0.0009 U	0.00085 U	0.0009 U	0.0013 U	0.0009 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.00175 U	0.00135 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U
56-23-5	Carbon tetrachloride	0.00019 U	0.00019 U	0.00018 U	0.00019 U	0.00028 U	0.000195 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.00019 U	0.00038 U	0.00029 U	0.000185 U	0.000185 U	0.000185 U	0.00019 U	0.00019 U
108-90-7	Chlorobenzene	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.00032 U	0.000225 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000215 U	0.000435 U	0.000335 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U
124-48-1	Chlorodibromomethane	0.000135 U	0.000135 U	0.00013 U	0.000135 U	0.0002 U	0.00014 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.000275 U	0.00021 U	0.000135 U	0.000135 U	0.00013 U	0.000135 U	0.000135 U
75-00-3	Chloroethane	0.000195 U	0.000195 U	0.000185 UJ	0.000195 UJ	0.00029 U	0.0002 U	0.000195 UJ	0.000195 UJ	0.00019 UJ	0.00019 UJ	0.000195 UJ	0.00039 U	0.0003 U	0.00019 U	0.00019 U	0.00019 U	0.000195 U	0.000195 U
67-66-3	Chloroform	0.000185 U	0.000185 U	0.000175 U	0.000185 U	0.00027 U	0.00019 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.000185 U	0.00037 U	0.000285 U	0.00018 U	0.00018 U	0.00018 U	0.000185 U	0.000185 U
74-87-3	Chloromethane	0.00024 U	0.000245 U	0.000235 U	0.000245 U	0.00036 U	0.00025 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.000245 U	0.00049 U	0.000375 U	0.000235 U	0.000235 U	0.000235 U	0.00024 U	0.00024 U
7440-47-3	Chromium	34	31	1.9	14	87 J	44 J	15	4	3.1	3.4	7	26 J	17 J	8.2 J	7.7 J	1.7	2.9	8
218-01-9	Chrysene	0.47	0.33	0.031	0.54	1.1 J	1.9	5.2	0.34	0.02	0.023	0.021	2.7	1.9	20	20	2.4	0.95	0.31
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.00014 U	0.000135 U	0.00014 U	0.00021 U	0.000145 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.000285 U	0.00022 U	0.00014 U	0.00014 U	0.000135 U	0.00014 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.00016 U	0.00015 U	0.00016 U	0.00023 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000315 U	0.00024 U	0.000155 U	0.000155 U	0.00015 U	0.000155 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS024AA	SS024BA	SS024CA	SS024DA	SS025AA	SS025BA	SS026AA	SS026BA	SS026CA	SS026CC	SS026DA	SS027AA	SS027BA	SS028AA	SS028AB	SS028BA	SS028CA	SS028DA
	Sample Date	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	04-Dec-06	04-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	04-Dec-06	04-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	19	17	0.8 J	6.1	74	36	22	2.1	0.49 J	0.52 J	0.58 J	27	21	5 J	4.9 J	0.9 J	0.33 J	0.41 J
110-82-7	Cyclohexane	0.000205 U	0.000205 U	0.0002 U	0.000205 U	0.000305 U	0.000215 U	0.000205 U	0.000205 U	0.0002 U	0.0002 U	0.000205 U	0.000415 U	0.000315 U	0.0002 U	0.0002 U	0.0002 U	0.000205 U	0.000205 U
53-70-3	Dibenzo(a,h)anthracene	0.073 J	0.057 J	0.0051	0.18	0.19 J	0.41	2.1	0.13	0.007	0.0087	0.0076	0.48	0.53	2.6	3.1	0.3	0.098	0.015 J
132-64-9	Dibenzofuran	0.019 J	0.016 J	0.007 U	0.017 J	0.045 J	0.03 J	0.07 U	0.007 U	0.007 U	0.007 U	0.007 U	0.036 J	0.061 J	0.07 U	0.07 U	0.014 J	0.007 U	0.007 UJ
75-09-2	Dichloromethane	0.00021 U	0.00021 U	0.0079 J	0.00021 U	0.00031 U	0.00022 U	0.0053 J	0.00021 U	0.000205 U	0.000205 U	0.00021 U	0.000425 U	0.000325 U	0.000205 U	0.000205 U	0.000205 U	0.00021 U	0.00021 U
84-66-2	Diethyl phthalate	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0095 U	0.009 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 UJ
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.008 U	0.0075 U	0.055 U	0.055 U	0.005 U	0.0055 U	0.0055 UJ
84-74-2	di-n-Butyl-phthalate	0.0325 U	0.0325 U	0.0315 U	0.033 U	0.037 U	0.034 U	0.325 U	0.0325 U	0.032 U	0.032 U	0.0325 U	0.047 U	0.045 U	0.32 U	0.32 U	0.0315 U	0.0325 UJ	0.0325 UJ
117-84-0	di-n-Octyl-phthalate	0.008 U	0.008 U	0.008 U	0.0085 U	0.0095 U	0.0085 U	0.08 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0115 U	0.0115 U	0.08 U	0.08 U	0.008 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.000225 U	0.000225 U	0.00022 U	0.00023 U	0.000335 U	0.000235 U	0.000225 U	0.000225 U	0.00022 U	0.00022 U	0.000225 U	0.000455 U	0.00035 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000225 U
206-44-0	Fluoranthene	0.68	0.61	0.024	0.48	1.4	1.6	3.9	0.23	0.018	0.02	0.018	2.9	1.6	18	21	2	0.83	0.53
86-73-7	Fluorene	0.01	0.011	0.0008 UJ	0.021 J	0.041	0.035 J	0.08 U	0.027 J	0.0008 U	0.0008 U	0.00085 U	0.055	0.048 J	0.17 J	0.19 J	0.0155 U	0.016 U	0.008 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 U	0.0095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 U	0.09 U	0.09 U	0.009 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.00445 UJ	0.00445 UJ	0.0043 U	0.0045 U	0.005 U	0.00465 U	0.044 UJ	0.0044 UJ	0.00435 U	0.00435 U	0.00445 UJ	0.0065 U	0.0065 U	0.0435 U	0.0435 U	0.00425 U	0.00445 UJ	0.00445 UJ
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.006 U	0.006 U	0.007 U	0.0065 U	0.06 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0085 U	0.0085 U	0.06 U	0.06 U	0.006 U	0.006 U	0.006 UJ
67-72-1	Hexachloroethane	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0105 U	0.0095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0135 U	0.013 U	0.09 U	0.09 U	0.009 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.19	0.16	0.017	0.54	0.67 J	1.3	6	0.36	0.021	0.025	0.023	1.6	1.8	8.9	8.9	1.1	0.37	0.051
98-82-8	Isopropylbenzene	0.000245 U	0.00025 U	0.00024 U	0.00025 U	0.000365 U	0.00026 UJ	0.000245 U	0.000245 U	0.000245 U	0.000245 U	0.00025 U	0.0005 UJ	0.000385 UJ	0.00024 U	0.00024 U	0.00024 U	0.000245 U	0.00025 U
7439-92-1	Lead	5.5	5.4	2	6.6	12	12	14	5.4	4.3	5	15	9.6	9.2	10	9.6	1.9	2.7	4.9
136777-61-2	m,p-Xylenes	0.000465 U	0.00047 U	0.00045 U	0.00047 U	0.0007 U	0.000485 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.000465 U	0.00095 U	0.00075 U	0.000455 U	0.000455 U	0.00045 U	0.000465 U	0.000465 U
541-73-1	m-Dichlorobenzene	2.65E-05 U	0.000027 U	0.000026 U	0.000027 U	0.00004 U	0.000028 UJ	2.65E-05 U	2.65E-05 U	2.65E-05 U	2.65E-05 U	0.000027 U	0.000055 UJ	4.15E-05 UJ	2.65E-05 U	2.65E-05 U	0.000026 U	0.000027 U	0.000027 U
7439-97-6	Mercury	0.035	0.029	0.012 J	0.11	0.65	0.32	0.11	0.022 J	0.03	0.038	0.042	0.44	0.38	0.14 J	0.16	0.026	0.035	0.036
79-20-9	Methyl acetate	0.000105 U	0.000105 U	0.0001 U	0.000105 U	0.000155 U	0.00011 U	0.000105 U	0.000105 U	0.0001 U	0.0001 U	0.000105 U	0.00021 U	0.00016 U	0.0001 U	0.0001 U	0.0001 U	0.000105 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0009 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0012 U	0.00095 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00038 U	0.00038 U	0.000365 U	0.000385 U	0.0006 U	0.000395 U	0.00038 U	0.00038 U	0.000375 U	0.000375 U	0.00038 U	0.0008 U	0.0006 U	0.000375 U	0.00037 U	0.00037 U	0.00038 U	0.00038 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0008 U	0.0006 U	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.0011 U	0.00085 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.000225 U	0.000225 U	0.00072 J	0.00097 J	0.000335 U	0.000235 U	0.000225 U	0.00056 J	0.00022 U	0.00052 J	0.000225 U	0.000455 U	0.00035 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000225 U
108-87-2	Methylcylohexane	0.000235 U	0.00024 U	0.00023 U	0.00024 U	0.00035 U	0.000245 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.00024 U	0.00048 U	0.000365 U	0.00023 U	0.00023 U	0.00023 U	0.000235 U	0.000235 U
91-20-3	Naphthalene	0.041	0.027	0.002 J	0.047 J	0.039 J	0.039	0.027 U	0.025 J	0.00027 U	0.00027 U	0.000275 U	0.058	0.034 J	0.027 U	0.22 J	0.0055 U	0.0055 U	0.00275 U
98-95-3	Nitrobenzene	0.011 U	0.011 U	0.0105 U	0.011 U	0.0125 U	0.0115 U	0.11 U	0.011 U	0.0105 U	0.0105 U	0.011 U	0.0155 U	0.015 U	0.105 U	0.105 U	0.0105 U	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.01 U	0.0095 U	0.01 U	0.011 UJ	0.01 UJ	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.014 UJ	0.0135 U	0.095 U	0.095 U	0.0095 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.006 U	0.006 U	0.007 U	0.0065 U	0.06 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0085 U	0.0085 U	0.06 U	0.06 U	0.006 U	0.006 UJ	0.006 UJ
95-47-6	o-Xylene	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.00032 U	0.000225 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000215 U	0.000435 U	0.000335 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U
106-47-8	p-Chloroaniline	0.014 U	0.014 U	0.0135 U	0.014 U	0.016 U	0.0145 U	0.14 U	0.014 U	0.014 UJ	0.014 UJ	0.014 U	0.02 U	0.0195 U	0.14 U	0.14 U	0.0135 U	0.014 U	0.014 U
87-86-5	Pentachlorophenol	0.000375 U	0.000375 U	0.0022 J	0.1 J	0.8	8.4	2.9 J	0.15 J	0.013 J	0.014 J	0.0087 J	1.1	1.2	2.6 J	3.2 J	0.57 J	66	360
85-01-8	Phenanthrene	0.1	0.079	0.025	0.096	0.31	0.22	0.39 J	0.043 J	0.00175 U	0.00175 U	0.0018 U	0.31	0.22	0.97	0.88	0.12 J	0.0355 U	0.018 U
108-95-2	Phenol	0.009 U	0.009 U	0.0085 U	0.009 U	0.01 U	0.009 U	0.085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0125 U	0.012 U	0.085 U	0.085 U	0.0085 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.034 J	0.007 U	0.065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0095 U	0.009 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 UJ
129-00-0	Pyrene	0.68	0.69	0.048	0.77	1.6 J	5.3	6.4	0.45	0.027	0.03	0.028	3.1	1.9	32	36	3.4	1.9	1.5
7782-49-2	Selenium	0.44 UJ	0.445 UJ	0.43 U	0.435 U	0.5 U	0.445 U	0.43 U	0.44 U	0.415 U	0.43 U	0.44 U	0.65 U	0.6 U	0.435 U	0.435 U	0.425 U	0.445 U	0.425 U
7440-22-4	Silver	0.2 U	0.2 U	0.195 U	0.195 U	0.225 U	0.2 U	0.195 U	0.2 U	0.185 U	0.195 U	0.2 U	0.285 U	0.275 U	0.195 U	0.195 U	0.195 U	0.2 U	0.19 U
100-42-5	Styrene (monomer)	0.00023 U	0.00023 U	0.000225 U	0.000235 U	0.000345 U	0.00024 U	0.00023 U	0.00023 U	0.00023 U	0.000225 U	0.00023 U	0.00047 U	0.00036 U	0.000225 U	0.000225 U	0.000225 U	0.00023 U	0.00023 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.000175 U	0.000165 U	0.000175 U	0.000255 U	0.00018 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.000175 U	0.00035 U	0.000265 U	0.00017 U	0.00017 U	0.000165 U	0.000175 U	0.000175 U
127-18-4	Tetrachloroethylene	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.00032 U	0.000225 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000215 U	0.000435 U	0.000335 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U
156-60-5	trans-1,2-Dichloroethene	0.000205 U	0.000205 U	0.0002 U	0.000205 U	0.000305 U	0.000215 U	0.000205 U	0.000205 U	0.0002 U	0.0002 U	0.000205 U	0.000415 U	0.000315 U	0.0002 U	0.0002 U	0.0002 U	0.000205 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.000165 U	0.000155 U	0.000165 U	0.00024 U	0.00017 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.000165 U	0.000325 U	0.00025 U	0.00016 U	0.00016 U	0.000155 U	0.00016 U	0.00016 U
75-25-2	Tribromomethane	0.00021 U	0.00021 U	0.000205 U	0.00021 U	0.00031 U	0.00022 U	0.00021 U	0.00021 U	0.000205 U	0.000205 U	0.00021 U	0.000425 U	0.000325 U	0.000205 U	0.000205 U	0.000205 U	0.00021 U	0.00021 U
79-01-6	Trichloroethylene	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.00032 U	0.000225 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000215 U	0.000435 U	0.000335 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U
7440-62-2	Vanadium	4 J	6.4 J	0.465 U	7.4	1.6	2.4	5	2	1.7	2	2.3	2.3	2.2	1.6	0.465 UJ	0.455 U	0.475 U	6.5
75-01-4	Vinyl chloride	0.00013 U	0.00013 U	0.000125 U	0.00013 U	0.000195 U	0.000135 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00026 U	0.0002 U	0.00013 U	0.000125 U	0.000125 U	0.00013 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000933	0.001047	2.28E-05	5.65E-05			0.0136 J	0.000479	3.12E-05	3.61E-05	7.24E-05							
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.006801 J	0.008073	0.000185	0.000431			0.133	0.00385	0.00024	0.000318	0.000596							
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	4.91E-05 J	5.84E-05	1.38E-06 J	3.42E-06 J			0.000789 J	3.08E-05	1.68E-06 J	5.57E-07 U	2.66E-06 J							
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	2.97E-05	3.45E-05	7.64E-07 J	1.53E-06 J			0.000423	1.46E-05	9.46E-07 J	1.24E-07 U	4.78E-07 U							
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.000107	0.000111	1.57E-06 J	3.33E-06 J			0.000346	1.09E-05	6.74E-07 J	1.35E-06 J	3.01E-07 U							
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	3.32E-05	4.64E-05	5.39E-07 J	4.11E-07 U			0.000121 J	5.02E-06	2.79E-07 J	1.43E-07 U	2E-07 U							
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000195	0.000213	4.17E-06	9.74E-06			0.00217	6.72E-05	4.37E-06 J	6.9E-06	3.48E-07 U							
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	7.24E-07 J	3.8E-07 U	1.55E-07 U	4.8E-08 U			0.00008	3.23E-06	9.5E-09 U	1.64E-07 U	2.17E-07 U							
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000222	0.000254	2.88E-06	1.04E-05			0.000422	1.55E-05	2.01E-06 J	1.13E-06 U	3.26E-07 U							
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	2.94E-06 J	3.21E-06 J	7E-08 U	1.9E-08 U			1.28E-05	4.57E-07 J	7.5E-09 U	3.95E-08 U	1.78E-07 J							
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	4.38E-05	4.24E-05	4.52E-07 J	1.08E-06 J			0.000059	2.28E-06 J	1.77E-07 J	8.9E-08 U	8.1E-07 J							
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	3.75E-05	6.84E-05	9.07E-07 J	2.37E-06 J			0.000272	0.000012	6.74E-07 J	1.42E-07 U	2.03E-07 U							
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	3.96E-06 J	4.58E-06 J	2.39E-07 J	8.7E-08 U			7.88E-05	4.23E-06	9.5E-09 U	4.45E-08 U	5.1E-08 U							
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	6.81E-07 J	9.25E-07 J	6.45E-08 U	2.3E-08 U			1.44E-06	1.01E-07 U	6E-09 U	4.25E-08 U	5.35E-08 U							
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	3.62E-06	3.54E-06	6.9E-08 U	2.6E-08 U			3.38E-06	1.09E-07 U	4.5E-09 U	5E-08 U	4.25E-08 U							
39001-02-0	Octachlorodibenzofuran	0.003762	0.005635	9.02E-05	0.000261			0.0945	0.00283	0.000189	0.000232	0.00048							
3268-87-9	Octachlorodibenzo-p-dioxin	0.058364 J	0.095491 J	0.00182	0.00416 J			1.77	0.058	0.003536	0.004692 J	0.008236 J							

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS028DC	SS029AA	SS029BA	SS029CA	SS029DA	SS030AA	SS030BA	SS030CA	SS030DA	SS031AA	SS031BA	SS031CA	SS031DA	SS031DB	SS032AA	SS032BA	SS033AA	SS033BA
	Sample Date	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.00007 U	0.000065 U	0.000065 U	0.00007 U	0.00009 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	3.55E-05 U	0.000036 U	3.55E-05 U	3.55E-05 U	0.000037 U	4.95E-05 U	0.000035 U	3.45E-05 U	0.000034 U	3.75E-05 U	0.000035 U	0.000035 U	0.000035 U	0.000035 U	3.65E-05 U	0.000036 U	0.000035 U	3.55E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.000075 U	0.00007 U	0.00007 U	0.000075 U	0.0001 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.00007 U	0.00007 U	0.00007 U
75-34-3	1,1-Dichloroethane	0.000034 U	3.45E-05 U	0.000034 U	0.000034 U	3.55E-05 U	4.75E-05 U	3.35E-05 U	0.000033 U	3.25E-05 U	3.55E-05 U	3.35E-05 U	3.35E-05 U	3.35E-05 U	3.35E-05 U	0.000035 U	0.000034 U	0.000033 U	3.35E-05 U
75-35-4	1,1-Dichloroethylene	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.00013 U	0.00009 U	0.00009 U	0.00009 U	0.0001 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.000095 U	0.000095 U	0.00009 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.000085 U	0.000085 U	0.000085 U	0.00008 U	0.000085 U	0.000115 U	0.00008 U	0.00008 U	0.00008 U	0.000085 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.000085 UJ	0.000085 U	0.00008 U	0.00008 U
96-12-8	1,2-Dibromo-3-chloropropane	0.000265 U	0.00027 U	0.000265 U	0.000265 U	0.000275 U	0.00037 U	0.00026 U	0.000255 U	0.000255 U	0.00028 U	0.00026 U	0.00026 U	0.00026 UJ	0.00026 UJ	0.000275 UJ	0.000265 U	0.00026 U	0.000265 U
106-93-4	1,2-Dibromoethane	3.05E-05 U	3.05E-05 U	0.00003 U	0.00003 U	3.15E-05 U	0.000042 U	2.95E-05 U	0.000029 U	0.000029 U	3.15E-05 U	0.00003 U	2.95E-05 U	2.95E-05 U	2.95E-05 U	0.000031 U	3.05E-05 U	2.95E-05 U	0.00003 U
95-50-1	1,2-Dichlorobenzene	0.000042 U	4.25E-05 U	0.000042 U	0.000042 U	4.35E-05 U	0.00006 U	0.00052 J	4.05E-05 U	4.05E-05 U	0.000044 U	4.15E-05 U	0.000041 U	4.15E-05 U	4.15E-05 U	4.35E-05 UJ	0.000042 U	0.000041 U	4.15E-05 U
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000075 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	2.95E-05 U	2.95E-05 U	0.000029 U	0.000029 U	3.05E-05 U	4.05E-05 U	2.85E-05 U	0.000028 U	0.000028 U	3.05E-05 U	0.000029 U	2.85E-05 U	2.85E-05 U	2.85E-05 U	0.00003 U	2.95E-05 U	2.85E-05 U	0.000029 U
106-46-7	1,4-Dichlorobenzene	0.000047 U	4.75E-05 U	0.000047 U	4.65E-05 U	4.85E-05 U	0.00007 U	0.000046 U	4.55E-05 U	0.000045 U	0.000049 U	0.000046 U	0.000046 U	0.000046 U	0.000046 U	4.85E-05 UJ	0.000047 U	0.000046 U	4.65E-05 U
95-95-4	2,4,5-Trichlorophenol	0.007 UJ	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.0195 UJ	0.019 U	0.0195 U	0.0195 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0205 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.019 U	0.0195 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.01 U	0.0105 U	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.0195 UJ	0.019 U	0.0195 U	0.0195 U	0.02 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0205 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.019 U	0.0195 U
91-58-7	2-Chloronaphthalene	0.009 UJ	0.0085 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U
95-57-8	2-Chlorophenol	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U
91-57-6	2-Methylnaphthalene	0.0085 U	0.008 U	0.00085 U	0.0008 U	0.00085 U	0.051	0.057	0.0049 J		0.028 J	0.0027 J	0.0024 J	0.0023 J	0.0008 U	0.0415 U	0.0405 U	0.0008 U	0.0008 U
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0115 U	0.012 U
88-75-5	2-Nitrophenol	0.008 U	0.0075 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.0185 U	0.018 U	0.0185 U	0.0185 U	0.019 U	0.018 U	0.018 U	0.018 U	0.018 U	0.0195 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.0185 U	0.018 U	0.0185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.0095 UJ	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 UJ	0.00495 U	0.0055 U	0.005 U	0.0055 U	0.00495 U	0.00495 U	0.00495 U	0.00485 U	0.0055 U	0.00495 U	0.00495 U	0.00495 U	0.00495 U	0.0055 U	0.0055 U	0.0049 U	0.005 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 UJ	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0115 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.014 U	0.0135 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.0095 UJ	0.009 UJ	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 UJ	0.0095 UJ	0.009 U	0.0095 U
83-32-9	Acenaphthene	0.015 U	0.0145 U	0.0015 U	0.00145 U	0.00155 U	0.0145 U	0.043 J			0.045 J	0.00145 UJ	0.00145 UJ	0.00145 UJ	0.00145 U	0.075 U	0.075 U	0.00145 U	0.00145 U
208-96-8	Acenaphthylene	0.014 U	0.014 U	0.0014 U	0.0014 U	0.00145 U	0.33	0.51	0.032	0.00135 U	0.54	0.0083	0.0062 J	0.0072 J	0.0044 J	0.69	0.96	0.0014 U	0.0014 U
67-64-1	Acetone	0.00135 U	0.0014 U	0.00135 U	0.00135 U	0.0014 U	0.0063 J	0.0044 J	0.059 J	0.018 J	0.0036 J	0.048 J	0.011 J	0.0045 J	0.014 J	0.0014 U	0.00135 U	0.00135 U	0.00135 U
120-12-7	Anthracene	0.0033 U	0.043	0.0062	0.00096 J	0.00074 J	0.45	0.75	0.062	0.000315 U	1	0.019	0.01	0.016 J	0.0099 J	1.5	2.3	0.0058	0.0011 J
7440-36-0	Antimony	0.18 U	0.175 U	0.18 U	0.175 U	0.18 U	0.46 J	0.59 J	0.17 UJ	0.175 UJ	0.19 UJ	0.175 UJ	0.17 UJ	0.175 UJ	0.17 UJ	200	12	0.175 UJ	0.18 UJ
7440-38-2	Arsenic	0.68	4.5	2	0.53	0.73	8.7	16	1.1 J	0.21 U	91	7.2	0.205 UJ	1.2	0.205 U	36	45	52	60
7440-39-3	Barium	19	6.7	6	12	16	21	23	9.7 J	5.3 J	14	9.2	9	6.3 J	8	44	37	9.1	9.5
71-43-2	Benzene	0.00021 U	0.000215 U	0.00021 U	0.00021 U	0.00022 U	0.000295 U	0.000205 U	0.000205 U	0.000205 U	0.00022 U	0.00021 U	0.000205 U	0.00021 U	0.00021 U	0.00022 U	0.00021 U	0.000205 U	0.00021 U
56-55-3	Benzo(a)anthracene	0.15	0.036	0.0048	0.00027 U	0.00028 U	0.88	2.3	0.17	0.014	0.95	0.011	0.009	0.013 J	0.0061 J	1.8	2	0.0029 J	0.00027 U
50-32-8	Benzo(a)pyrene	0.025 J	0.04	0.005	0.0006 U	0.00065 U	1.1	3	0.15	0.016	1.4	0.015	0.011	0.014 J	0.008 J	1.5	2.1	0.003 J	0.0006 U
205-99-2	Benzo(b)fluoranthene	0.098	0.085	0.011	0.001 J	0.00045 U	1.9 J	5.6 J	0.32 J	0.032 J	2.8	0.032	0.023	0.036 J	0.019 J	3.3	3.5	0.0058	0.000425 U
191-24-2	Benzo(g,h,i)perylene	0.031 J	0.045	0.0053	0.00035 U	0.000365 U	0.8	1.7	0.12	0.014	1.1	0.017	0.013	0.016 J	0.0097 J	1.6	2.5	0.0035 J	0.00035 U
207-08-9	Benzo(k)fluoranthene	0.067	0.063	0.0082	0.00078 J	0.000365 U	0.92	2.3	0.15	0.017	1.3	0.017	0.014	0.018 J	0.0098 J	2.9	3	0.0049	0.00035 U
85-68-7	Benzyl butyl phthalate	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U
92-52-4	Biphenyl	0.085 UJ	0.08 U	0.085 U	0.08 U	0.085 U	0.08 U	0.08 UJ	0.08 U	0.08 U	0.085 U	0.08 U	0.08 U	0.08 U	0.08 U	0.085 U	0.085 U	0.08 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.0085 U	0.008 UJ	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.008 UJ	0.0085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 UJ	0.008 UJ	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 UJ	0.0115 U	0.0115 U	0.0115 UJ	0.012 UJ	0.0115 U	0.0115 U	0.0115 U	0.011 U	0.012 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 UJ	0.0115 U	0.011 U	0.0115 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.052 J	0.009 U	0.0085 U	0.009 U
75-27-4	Bromodichloromethane	0.00016 U	0.00016 U	0.00016 U	0.000155 U	0.000165 U	0.00022 U	0.000155 U	0.000155 U	0.00015 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000165 U	0.00016 U	0.000155 U	0.000155 U
74-83-9	Bromomethane	0.000175 U	0.000175 U	0.000175 U	0.000175 U	0.00018 U	0.00024 UJ	0.00017 UJ	0.00017 UJ	0.000165 UJ	0.00018 UJ	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.00018 UJ	0.000175 UJ	0.00017 UJ	0.00017 UJ
7440-43-9	Cadmium	0.155 U	0.15 U	0.155 U	0.15 U	0.155 U	0.145 U	0.15 U	0.145 U	0.15 U	0.16 U	0.15 U	0.145 U	0.15 U	0.145 U	0.15 U	0.15 U	0.15 U	0.15 U
86-74-8	Carbazole	0.009 UJ	0.0085 U	0.009 U	0.009 U	0.009 U	0.83	0.11 J	0.0085 U	0.0085 U	0.17 J	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.24	0.39	0.0085 U	0.009 U
75-15-0	Carbon disulfide	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0012 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.00085 U	0.00085 U
56-23-5	Carbon tetrachloride	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0002 U	0.000265 U	0.000185 U	0.000185 U	0.000185 U	0.0002 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000195 U	0.00019 U	0.000185 U	0.00019 U
108-90-7	Chlorobenzene	0.00022 U	0.00022 U	0.000215 U	0.000215 U	0.000225 U	0.0003 U	0.00021 U	0.00021 U	0.00021 U	0.000225 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.00021 U	0.000215 U
124-48-1	Chlorodibromomethane	0.000135 U	0.00014 U	0.000135 U	0.000135 U	0.00014 U	0.00019 U	0.000135 U	0.00013 U	0.00013 U	0.000145 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.000135 U	0.000135 U	0.000135 U
75-00-3	Chloroethane	0.000195 U	0.0002 U	0.000195 U	0.000195 U	0.000205 U	0.00027 U	0.00019 U	0.00019 U	0.00019 U	0.000205 UJ	0.000195 UJ	0.00019 UJ	0.00019 UJ	0.00019 UJ	0.0002 U	0.000195 U	0.00019 U	0.000195 U
67-66-3	Chloroform	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.00019 U	0.000255 U	0.00018 U	0.00018 U	0.000175 U	0.000195 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00019 U	0.000185 U	0.00018 U	0.000185 U
74-87-3	Chloromethane	0.000245 U	0.000245 U	0.000245 U	0.00024 U	0.000255 U	0.00034 U	0.00024 U	0.000235 U	0.000235 U	0.000255 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00025 U	0.000245 U	0.00024 U	0.00024 U
7440-47-3	Chromium	7.9	11 J	6.5 J	7.7 J	17 J	15	13	3.4	2.4	59	8.5	4.8	4.4 J	3 J	53	42	3.9	4
218-01-9	Chrysene	0.26	0.067	0.0085	0.00082 J	0.00074 J	1.1	2.5	0.22	0.018	1.2	0.014	0.012	0.016 J	0.0081 J	3.1	2.5	0.0035 J	0.000255 U
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.000145 U	0.00014 U	0.00014 U	0.000145 U	0.000195 U	0.00014 U	0.000135 U	0.000135 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.00014 U	0.00014 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.00016 U	0.00016 U	0.00016 U	0.000155 U	0.000165 U	0.00022 U	0.000155 U	0.000155 U	0.00015 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000165 U	0.00016 U	0.000155 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS028DC	SS029AA	SS029BA	SS029CA	SS029DA	SS030AA	SS030BA	SS030CA	SS030DA	SS031AA	SS031BA	SS031CA	SS031DA	SS031DB	SS032AA	SS032BA	SS033AA	SS033BA
	Sample Date	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.41 J	5.4 J	1.3 J	0.155 UJ	0.47 J	17	16	2.5 J	0.67 J	46	1.3	0.84 J	1.1 J	0.62 J	68 J	72 J	1.2 J	1 J
110-82-7	Cyclohexane	0.000205 U	0.00021 U	0.000205 U	0.000205 U	0.000215 U	0.000285 U	0.0002 U	0.0002 U	0.0002 U	0.000215 U	0.000205 U	0.0002 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.0002 U	0.000205 U
53-70-3	Dibenzo(a,h)anthracene	0.0072 J	0.012 J	0.0015 J	0.000275 U	0.000285 U	0.32 J	0.78 J	0.048	0.0051	0.4	0.0052	0.003 J	0.0052	0.0028 J	0.41	0.62	0.00091 J	0.000275 U
132-64-9	Dibenzofuran	0.007 UJ	0.007 U	0.007 U	0.007 U	0.0075 U	0.15 J	0.038 J	0.007 U	0.007 U	0.033 J	0.007 U	0.007 U	0.007 U	0.007 U	0.032 J	0.078 J	0.007 U	0.007 U
75-09-2	Dichloromethane	0.00021 U	0.000215 U	0.00021 U	0.00021 U	0.00022 U	0.000295 U	0.000205 U	0.000205 U	0.000205 U	0.00022 U	0.00021 U	0.000205 U	0.0069 J	0.00021 U	0.00022 U	0.00021 U	0.000205 U	0.00021 U
84-66-2	Diethyl phthalate	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.033 UJ	0.0325 U	0.033 U	0.0325 U	0.034 U	0.0325 U	0.0325 U	0.0325 U	0.0315 U	0.0345 U	0.0325 U	0.0325 U	0.0325 U	0.0325 U	0.034 U	0.033 U	0.032 U	0.0325 U
117-84-0	di-n-Octyl-phthalate	0.0085 U	0.008 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.00023 U	0.00023 U	0.000225 U	0.000225 U	0.000235 U	0.000315 U	0.000225 U	0.00022 U	0.00022 U	0.00024 U	0.000225 U	0.000225 U	0.000225 U	0.000225 U	0.000235 U	0.00023 U	0.00022 U	0.000225 U
206-44-0	Fluoranthene	0.48	0.086	0.012	0.0016 J	0.0015 J	1.3	2.6	0.47 J	0.025	1.3	0.018	0.013	0.015 J	0.011 J	3.6	2.8	0.0047	0.000315 U
86-73-7	Fluorene	0.0085 U	0.008 U	0.00085 U	0.0008 U	0.00085 U	0.029 J	0.044	0.0008 U		0.047	0.0008 UJ	0.0008 UJ	0.0008 UJ	0.0008 U	0.0415 U	0.0405 U	0.0008 U	0.0008 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0045 UJ	0.0044 U	0.0045 U	0.00445 U	0.00465 U	0.0044 U	0.0044 UJ	0.0044 U	0.0043 U	0.0047 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0046 U	0.0045 U	0.00435 U	0.00445 U
77-47-4	Hexachlorocyclopentadiene	0.006 UJ	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 UJ	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.009 UJ	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.027 J	0.05	0.0061	0.000465 U	0.000485 U	0.82	1.8	0.12	0.014	1.1	0.015	0.011	0.015 J	0.0088 J	1.7	2.4	0.0038	0.000465 U
98-82-8	Isopropylbenzene	0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00026 U	0.000345 U	0.000245 U	0.00024 U	0.00024 U	0.00026 U	0.000245 U	0.000245 U	0.000245 U	0.000245 U	0.000255 UJ	0.00025 U	0.000245 U	0.000245 U
7439-92-1	Lead	5	16	6.9	5	9.9	24	27	7.3 J	2.3 J	9.9	4.5	4.4	5.6 J	5.1	2200	180	3.1	3.2
136777-61-2	m,p-Xylenes	0.00047 U	0.000475 U	0.00047 U	0.000465 U	0.000485 U	0.0007 U	0.00046 U	0.000455 U	0.00045 U	0.00049 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.000485 U	0.00047 U	0.00046 U	0.000465 U
541-73-1	m-Dichlorobenzene	0.000027 U	2.75E-05 U	0.000027 U	0.000027 U	0.000028 U	3.75E-05 U	2.65E-05 U	0.000026 U	0.000026 U	2.85E-05 U	2.65E-05 U	2.65E-05 U	2.65E-05 U	2.65E-05 U	0.000028 UJ	0.000027 U	2.65E-05 U	0.000027 U
7439-97-6	Mercury	0.038	0.044 J	0.032 J	0.026 J	0.042 J	0.14	0.18	0.032	0.0099 J	0.39	0.027	0.026	0.024 J	0.02 J	1.1	1.2	0.035	0.028
79-20-9	Methyl acetate	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.00011 U	0.000145 U	0.0001 U	0.0001 U	0.0001 U	0.00011 U	0.000105 U	0.0001 U	0.0001 U	0.0001 U	0.000105 U	0.000105 U	0.0001 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.00085 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.000385 U	0.00039 U	0.000385 U	0.00038 U	0.0004 U	0.00055 U	0.000375 U	0.00037 U	0.00037 U	0.0004 U	0.000375 U	0.000375 U	0.000375 U	0.000375 U	0.000395 U	0.000385 U	0.000375 U	0.00038 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00075 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.00055 UJ	0.00055 UJ	0.0006 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.00023 U	0.00023 U	0.000225 U	0.000225 U	0.000235 U	0.000315 U	0.000225 U	0.00022 U	0.00022 U	0.00024 U	0.000225 U	0.00049 J	0.00048 J	0.00095 J	0.000235 U	0.00023 U	0.00022 U	0.000225 U
108-87-2	Methylcylohexane	0.00024 U	0.00024 U	0.00024 U	0.000235 U	0.00025 U	0.00033 U	0.000235 U	0.00023 U	0.00023 U	0.00025 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.000245 U	0.00024 U	0.000235 U	0.000235 U
91-20-3	Naphthalene	0.00275 U	0.0027 U	0.000275 U	0.000275 U	0.000285 U	0.081	0.092	0.000265 U	0.0031 J	0.04	0.0086 J	0.00027 U	0.00027 U	0.00027 U	0.048 J	0.065 J	0.00027 U	0.000275 U
98-95-3	Nitrobenzene	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0105 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.006 UJ	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.00022 U	0.00022 U	0.000215 U	0.000215 U	0.000225 U	0.0003 U	0.00021 U	0.00021 U	0.00021 U	0.000225 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.00021 U	0.000215 U
106-47-8	p-Chloroaniline	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.014 U	0.0135 U	0.015 U	0.014 U	0.014 UJ	0.014 UJ	0.014 UJ	0.0145 U	0.014 U	0.014 U	0.014 U
87-86-5	Pentachlorophenol	180	0.11 J	0.00038 U	0.000375 U	0.000395 U	0.0037 U	0.0037 U	0.000365 U	0.000365 U	0.39	0.0057 J	0.0039 J	0.0046 J	0.0036 J	1.9 J	1.8 J	0.00037 U	0.000375 U
85-01-8	Phenanthrene	0.018 U	0.0175 U	0.0055 J	0.0018 U	0.00185 U	0.23	0.39	0.028 J	0.0048 J	0.2	0.0057 J	0.0042 J	0.00175 UJ	0.00175 U	0.38	0.53	0.00175 U	0.0018 U
108-95-2	Phenol	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U
100-01-6	p-Nitroaniline	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.0065 UJ	0.007 U	0.0065 U	0.0065 U	0.0065 U
129-00-0	Pyrene	1.5	0.079	0.011	0.00028 U	0.00029 U	1.6	3.1	0.44 J	0.027	1.7	0.02	0.015	0.018 J	0.012 J	3.6	3.3	0.0052	0.00057 J
7782-49-2	Selenium	0.45 U	0.44 U	0.445 U	0.435 U	0.445 U	0.415 UJ	0.43 UJ	0.425 U	0.43 U	0.465 U	0.435 U	0.415 U	0.43 U	0.425 U	0.43 U	0.435 U	0.435 U	0.44 U
7440-22-4	Silver	0.205 U	0.2 U	0.2 U	0.195 U	0.2 U	0.19 U	0.195 U	0.19 U	0.195 U	0.21 U	0.195 U	0.19 U	0.195 U	0.19 U	0.195 U	0.2 U	0.195 U	0.2 U
100-42-5	Styrene (monomer)	0.000235 U	0.000235 U	0.000235 U	0.00023 U	0.00024 U	0.000325 U	0.00023 U	0.000225 U	0.000225 U	0.000245 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00024 U	0.000235 U	0.00023 U	0.00023 U
1634-04-4	tert-Butyl methyl ether	0.000175 U	0.000175 U	0.000175 U	0.000175 U	0.00018 U	0.00024 U	0.00017 U	0.00017 U	0.000165 U	0.00018 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00018 U	0.000175 U	0.00017 U	0.00017 U
127-18-4	Tetrachloroethylene	0.00022 U	0.00022 U	0.000215 U	0.000215 U	0.000225 U	0.0003 U	0.00021 U	0.00021 U	0.00021 U	0.000225 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.00021 U	0.000215 U
156-60-5	trans-1,2-Dichloroethene	0.000205 U	0.00021 U	0.000205 U	0.000205 U	0.000215 U	0.000285 U	0.0002 U	0.0002 U	0.0002 U	0.000215 U	0.000205 U	0.0002 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.0002 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.000165 U	0.000165 U	0.000165 U	0.00016 U	0.00017 U	0.000225 U	0.00016 U	0.00016 U	0.000155 U	0.00017 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00017 U	0.000165 U	0.00016 U	0.00016 U
75-25-2	Tribromomethane	0.00021 U	0.000215 U	0.00021 U	0.00021 U	0.00022 U	0.000295 U	0.000205 U	0.000205 U	0.000205 U	0.00022 U	0.00021 U	0.000205 U	0.00021 U	0.00021 U	0.00022 U	0.00021 U	0.000205 U	0.00021 U
79-01-6	Trichloroethylene	0.00022 U	0.00022 U	0.000215 U	0.000215 U	0.000225 U	0.0003 U	0.00021 U	0.00021 U	0.00021 U	0.000225 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.00021 U	0.000215 U
7440-62-2	Vanadium	6	1.2	2.3	5.3	10	2.5 J	3.9 J	2.2 J	1.2 J	0.5 U	0.465 U	0.45 U	1.4	1.2	11	8.8	2.9	3.2
75-01-4	Vinyl chloride	0.00013 U	0.000135 U	0.00013 U	0.00013 U	0.000135 U	0.00018 U	0.00013 U	0.000125 U	0.000125 U	0.000135 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.00013 U	0.00013 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran																		
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin																		
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran																		
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran																		
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin																		
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran																		
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin																		
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran																		
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin																		
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran																		
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin																		
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran																		
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran																		
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran																		
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin																		
39001-02-0	Octachlorodibenzofuran																		
3268-87-9	Octachlorodibenzo-p-dioxin																		

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS034AA	SS034BA	SS035AA	SS035BA	SS035CA	SS035DA	SS036AA	SS036AC	SS036BA	SS036CA	SS036DA	SS037AA	SS037BA	SS038AA	SS038AC	SS038BA	SS038CA	SS038DA
	Sample Date	04-Dec-06	04-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	05-Dec-06	05-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000085 U	0.000075 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.00007 U	0.00007 U	0.000065 U	0.000065 U	0.00007 U	0.00007 U	0.00007 U	0.000135 U	0.000065 U	0.000065 U	0.000075 U
79-34-5	1,1,2,2-Tetrachloroethane	4.55E-05 U	0.000039 U	0.000038 U	3.55E-05 U	3.45E-05 U	3.55E-05 U	3.65E-05 U	3.65E-05 U	0.000037 U	0.000035 U	0.000036 U	0.000037 U	0.000036 U	3.65E-05 U	0.000075 U	0.000036 U	3.55E-05 U	3.95E-05 U
79-00-5	1,1,2-Trichloroethane	0.00009 U	0.00008 U	0.000075 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.000145 U	0.000075 U	0.00007 U	0.00008 U
75-34-3	1,1-Dichloroethane	4.35E-05 U	0.000037 U	0.000036 U	3.35E-05 U	0.000033 U	0.000034 U	0.000035 U	0.000035 U	3.55E-05 U	3.35E-05 U	3.45E-05 U	3.55E-05 U	3.45E-05 U	0.000035 U	0.00007 U	3.45E-05 U	0.000034 U	3.75E-05 U
75-35-4	1,1-Dichloroethylene	0.00012 U	0.0001 U	0.0001 U	0.000095 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.00019 U	0.000095 U	0.000095 U	0.000105 U
120-82-1	1,2,4-Trichlorobenzene	0.000105 U	0.00009 U	0.00009 UJ	0.00008 U	0.00008 U	0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.00008 U	0.000085 U	0.000085 UJ	0.000085 U	0.000085 U	0.00017 U	0.000085 U	0.000085 U	0.00009 U
96-12-8	1,2-Dibromo-3-chloropropane	0.000335 U	0.00029 U	0.00028 UJ	0.000265 U	0.000255 U	0.000265 U	0.00027 U	0.00027 U	0.000275 U	0.00026 U	0.00027 U	0.000275 UJ	0.00027 U	0.000275 U	0.00055 U	0.000265 U	0.000265 U	0.000295 U
106-93-4	1,2-Dibromoethane	3.85E-05 U	0.000033 U	0.000032 U	0.00003 U	2.95E-05 U	0.00003 U	0.000031 U	0.000031 U	3.15E-05 U	2.95E-05 U	3.05E-05 U	3.15E-05 U	0.000031 U	0.000031 U	0.000065 U	3.05E-05 U	3.05E-05 U	3.35E-05 U
95-50-1	1,2-Dichlorobenzene	0.000055 U	0.000046 U	4.45E-05 UJ	4.15E-05 U	0.000041 U	0.000042 U	0.000043 U	0.000043 U	4.35E-05 U	0.000041 U	4.25E-05 U	4.35E-05 UJ	4.25E-05 U	0.000043 U	0.00009 U	4.25E-05 U	0.000042 U	4.65E-05 U
107-06-2	1,2-Dichloroethane	0.00007 U	0.00006 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000115 U	0.000055 U	0.000055 U	0.00006 U
78-87-5	1,2-Dichloropropane	0.000037 U	0.000032 U	0.000031 U	0.000029 U	2.85E-05 U	0.000029 U	0.00003 U	0.00003 U	3.05E-05 U	2.85E-05 U	2.95E-05 U	3.05E-05 U	2.95E-05 U	0.00003 U	0.00006 U	2.95E-05 U	0.000029 U	3.25E-05 U
106-46-7	1,4-Dichlorobenzene	0.00006 U	0.000055 U	4.95E-05 UJ	4.65E-05 U	4.55E-05 U	4.65E-05 U	0.000048 U	0.000048 U	4.85E-05 U	0.000046 U	4.75E-05 U	4.85E-05 UJ	4.75E-05 U	0.000048 U	0.0001 U	0.000047 U	0.000047 U	0.000055 U
95-95-4	2,4,5-Trichlorophenol	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.008 U	0.007 U	0.007 U	0.008 U
88-06-2	2,4,6-Trichlorophenol	0.02 U	0.0195 U	0.0195 U	0.0195 U	0.019 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.019 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.022 U	0.0195 U	0.0195 U	0.0215 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0105 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.01 U	0.0105 U	0.024 J	0.035 J	0.0105 U	0.0115 U	0.0105 U	0.0105 U	0.0115 U
51-28-5	2,4-Dinitrophenol	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.0075 U	0.0065 U	0.0065 U	0.0075 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.006 U
606-20-2	2,6-Dinitrotoluene	0.02 U	0.0195 U	0.0195 U	0.0195 U	0.019 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.019 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.022 U	0.0195 U	0.0195 U	0.0215 U
91-58-7	2-Chloronaphthalene	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.01 U
95-57-8	2-Chlorophenol	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U
91-57-6	2-Methylnaphthalene	0.024 J	0.0085 U	0.04 J	0.008 U	0.0008 U	0.00085 U	0.04	0.046	0.052	0.17 J	0.013	0.47	0.43	0.017 U	0.0185 U	0.0165 U	0.00085 U	0.0009 U
95-48-7	2-Methylphenol (o-cresol)	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.0075 U	0.0065 U	0.0065 U	0.0075 U
88-74-4	2-Nitroaniline	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.0115 U	0.012 U	0.0125 U	0.0125 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 UJ	0.0135 UJ	0.012 UJ	0.012 U	0.0135 U
88-75-5	2-Nitrophenol	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.008 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0085 U
91-94-1	3,3'-Dichlorobenzidine	0.0185 U	0.0185 U	0.0185 U	0.0185 U	0.018 U	0.0185 U	0.019 U	0.019 U	0.019 U	0.018 U	0.0185 U	0.0185 UJ	0.019 U	0.019 U	0.0205 U	0.0185 U	0.0185 U	0.0205 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.0075 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.008 U	0.007 U	0.007 U	0.008 U
99-09-2	3-Nitroaniline	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0105 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 U	0.0055 U	0.0055 U	0.005 U	0.0049 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.00495 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.006 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.006 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.01 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 U	0.012 U	0.012 U	0.012 U	0.0115 U	0.012 U	0.0125 U	0.0125 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.0135 U	0.012 U	0.012 U	0.0135 U
106-44-5	4-Methylphenol (m/p-cresol)	0.0145 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.016 U	0.014 U	0.014 U	0.0155 U
100-02-7	4-Nitrophenol	0.0095 U	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.009 UJ	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0105 UJ	0.0095 UJ	0.0095 U	0.0105 U
83-32-9	Acenaphthene	0.015 U	0.0145 U	0.0295 U	0.0145 U	0.00145 U	0.00145 U	0.015 U	0.015 U	0.0155 U	0.84 J	0.045	0.12 J	0.16	0.03 U	0.033 U	0.0295 U	0.00145 U	0.00165 U
208-96-8	Acenaphthylene	0.68	0.41	0.77	0.18	0.006 J	0.0053 J	0.19	0.2	0.21	0.16 J	0.02	1.7	1.8	1	0.75	0.42	0.01	0.00155 U
67-64-1	Acetone	0.00175 U	0.0015 U	0.00145 U	0.00135 U	0.00135 U	0.00135 U	0.0014 U	0.0014 U	0.0014 U	0.00135 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0028 U	0.00135 U	0.00135 U	0.0015 U
120-12-7	Anthracene	1.6	1	0.56	0.086	0.0042	0.0043	0.27	0.27	0.27	0.73 J	0.053	3.6	8.3	1.8	1.2	0.69	0.024	0.0026 J
7440-36-0	Antimony	0.18 UJ	0.17 UJ	0.98 J	1.3	0.165 UJ	0.175 UJ	2.7	3.5	3.6	0.18 U	0.18 U	1.5 J	1.8 J	7.3	6.1	2.6	0.61 J	0.2 U
7440-38-2	Arsenic	11 J	6.6 J	11	3.5	0.47 J	0.45 J	77 J	120 J	120	0.53	0.215 U	120	160	430	330	150	100	19 J
7440-39-3	Barium	13	7.4	63	52	9.4	9.1	14 J	23 J	23	9.7	8.4	46	30	37	26	38	3.6	16 J
71-43-2	Benzene	0.00027 U	0.00023 U	0.000225 U	0.00021 U	0.000205 U	0.00021 U	0.000215 U	0.000215 U	0.00022 U	0.000205 U	0.000215 U	0.00022 U	0.000215 U	0.000215 U	0.000435 U	0.000215 U	0.00021 U	0.000235 U
56-55-3	Benzo(a)anthracene	0.88	0.64	1.3	0.2	0.0092	0.0083	0.39	0.4	0.37	1.2 J	0.1	4	4.4	1.9	1.5	1.3	0.01	0.003 J
50-32-8	Benzo(a)pyrene	1.1	0.68	1.6	0.29	0.011	0.0095	0.41	0.44	0.4	0.43 J	0.044	4.4	4.3	1.9	1.6	1	0.01	0.002 J
205-99-2	Benzo(b)fluoranthene	1.7	1.2	1.8	0.28	0.014	0.013	0.76	0.82	0.75	0.63 J	0.078	9.8	9.7	3.4	2.5	1.8	0.023	0.0057 J
191-24-2	Benzo(g,h,i)perylene	1.1	0.6	1.1	0.19	0.009	0.0083	0.47	0.48	0.47	0.26 J	0.033	4.3	3.9	2.1	1.9	0.93	0.034	0.0034 J
207-08-9	Benzo(k)fluoranthene	1.6	1.1	1.7	0.29	0.013	0.012	0.69	0.66	0.58	0.62 J	0.066	6.6	5.5	2.4	2.3	1.5	0.014	0.0045 J
85-68-7	Benzyl butyl phthalate	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U
92-52-4	Biphenyl	0.085 U	0.085 U	0.085 U	0.08 U	0.08 U	0.08 U	0.085 U	0.085 U	0.085 U	0.08 U	0.085 U	0.08 U	0.085 U	0.085 U	0.095 U	0.085 U	0.085 U	0.09 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0105 U
111-44-4	Bis(2-chloroethyl)ether	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.0085 UJ	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0095 U	0.0085 U	0.0085 U	0.009 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 U	0.0115 U	0.0115 UJ	0.0115 UJ	0.011 UJ	0.0115 UJ	0.012 U	0.012 U	0.012 U	0.0115 U	0.0115 U	0.0115 UJ	0.0115 UJ	0.012 UJ	0.013 UJ	0.0115 UJ	0.0115 U	0.0125 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.033 J	0.032 J	0.033 J	0.0085 U	0.009 U	0.12 J	0.024 J	0.024 J	0.01 U	0.009 U	0.009 U	0.01 U
75-27-4	Bromodichloromethane	0.0002 U	0.00017 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.000165 U	0.000155 U	0.00016 U	0.000165 U	0.00016 U	0.00016 U	0.000325 U	0.00016 U	0.00016 U	0.000175 U
74-83-9	Bromomethane	0.00022 U	0.00019 U	0.000185 UJ	0.00017 UJ	0.00017 UJ	0.000175 UJ	0.00018 UJ	0.00018 UJ	0.00018 UJ	0.00017 UJ	0.000175 UJ	0.00018 UJ	0.000175 UJ	0.00018 U	0.000355 U	0.000175 U	0.000175 U	0.000195 U
7440-43-9	Cadmium	0.155 U	0.145 U	0.3 J	0.15 U	0.14 U	0.15 U	0.155 U	0.4 J	0.39 J	0.15 U	0.155 U	0.68	0.155 U	0.38 J	0.38 J	0.155 U	0.15 U	0.17 U
86-74-8	Carbazole	0.2	0.15 J	0.069 J	0.009 U	0.0085 U	0.009 U	0.042 J	0.05 J	0.06 J	0.048 J	0.009 U	0.58	1.9	0.31	0.19 J	0.17 J	0.009 U	0.01 U
75-15-0	Carbon disulfide	0.0011 U	0.00095 U	0.00095 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.00085 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0018 U	0.0009 U	0.0009 U	0.001 U
56-23-5	Carbon tetrachloride	0.00024 U	0.000205 U	0.0002 U	0.00019 U	0.000185 U	0.00019 U	0.000195 U	0.000195 U	0.000195 U	0.000185 U	0.00019 U	0.000195 U	0.000195 U	0.000195 U	0.00039 U	0.00019 U	0.00019 U	0.00021 U
108-90-7	Chlorobenzene	0.000275 U	0.000235 U	0.00023 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.00021 U	0.00022 U	0.000225 U	0.00022 U	0.000225 U	0.000445 U	0.00022 U	0.000215 U	0.00024 U
124-48-1	Chlorodibromomethane	0.000175 U	0.00015 U	0.000145 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.00014 U	0.00014 U	0.000135 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00028 U	0.000135 U	0.000135 U	0.00015 U
75-00-3	Chloroethane	0.00025 U	0.000215 U	0.000205 U	0.000195 U	0.00019 U	0.000195 U	0.0002 U	0.0002 U	0.000205 U	0.00019 U	0.000195 U	0.000205 U	0.0002 U	0.0002 U	0.0004 U	0.000195 U	0.000195 U	0.000215 U
67-66-3	Chloroform	0.000235 U	0.0002 U	0.000195 U	0.000185 U	0.00018 U	0.000185 U	0.00019 U	0.00019 U	0.00019 U	0.00018 U	0.000185 U	0.00019 U	0.00019 U	0.00019 U	0.00038 U	0.000185 U	0.000185 U	0.000205 U
74-87-3	Chloromethane	0.00031 U	0.000265 U	0.00026 U	0.00024 U	0.000235 U	0.000245 U	0.00025 U	0.00025 U	0.000255 U	0.00024 U	0.000245 U	0.000255 U	0.00025 U	0.00025 U	0.0005 U	0.000245 U	0.000245 U	0.00027 U
7440-47-3	Chromium	16 J	7.1 J	17	9.4	4.7	7.8	80 J	120 J	120	6	8	99	90	690	680 J	290 J	67 J	33 J
218-01-9	Chrysene	1.2	1.2	1.6	0.24	0.012	0.01	0.62	0.6	0.55	1.2 J	0.12	5.5	6	2.5	2	1.7	0.012	0.0046 J
156-59-2	cis-1,2-Dichloroethylene	0.00018 U	0.000155 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.000145 U	0.000145 U	0.00014 U	0.000145 U	0.000145 U	0.000145 U	0.000145 U	0.00029 U	0.000145 U	0.00014 U	0.000155 U
10061-01-5	cis-1,3-Dichloropropene	0.0002 U	0.00017 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.000165 U	0.000155 U	0.00016 U	0.000165 U	0.00016 U	0.00016 U	0.000325 U	0.00016 U	0.00016 U	0.000175 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS034AA	SS034BA	SS035AA	SS035BA	SS035CA	SS035DA	SS036AA	SS036AC	SS036BA	SS036CA	SS036DA	SS037AA	SS037BA	SS038AA	SS038AC	SS038BA	SS038CA	SS038DA
	Sample Date	04-Dec-06	04-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	05-Dec-06	05-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	16	7.4	22 J	24 J	0.93 J	0.88 J	34 J	57 J	61	0.58 J	0.49 J	92	160	310	280 J	62 J	1.9 J	1.2 J
110-82-7	Cyclohexane	0.00026 U	0.000225 U	0.00022 U	0.000205 U	0.0002 U	0.000205 U	0.00021 U	0.00021 U	0.000215 U	0.0002 U	0.00021 U	0.000215 U	0.00021 U	0.00021 U	0.000425 U	0.00021 U	0.000205 U	0.00023 U
53-70-3	Dibenzo(a,h)anthracene	0.35	0.2	0.43	0.06	0.0026 J	0.0024 J	0.13	0.13	0.13	0.09 J	0.011	1.6	1.5	0.66	0.53	0.28	0.0059	0.00091 J
132-64-9	Dibenzofuran	0.024 J	0.022 J	0.036 J	0.007 U	0.007 U	0.007 U	0.031 J	0.028 J	0.04 J	0.24	0.054 J	0.36	0.46	0.15 J	0.077 J	0.23	0.007 U	0.008 U
75-09-2	Dichloromethane	0.00027 U	0.00023 U	0.000225 U	0.00021 U	0.000205 U	0.00021 U	0.000215 U	0.000215 U	0.00022 U	0.000205 U	0.000215 U	0.00022 U	0.000215 U	0.000215 U	0.000435 U	0.000215 U	0.00021 U	0.000235 U
84-66-2	Diethyl phthalate	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.0075 U	0.0065 U	0.0065 U	0.0075 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.006 U
84-74-2	di-n-Butyl-phthalate	0.0335 U	0.033 U	0.033 U	0.0325 U	0.032 U	0.0325 U	0.034 U	0.034 U	0.034 U	0.0325 U	0.0335 U	0.0325 U	0.0335 U	0.034 U	0.037 U	0.033 U	0.033 U	0.0365 U
117-84-0	di-n-Octyl-phthalate	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 UJ	0.0085 U	0.0085 U	0.0095 U	0.0085 U	0.0085 U	0.009 U
100-41-4	Ethylbenzene	0.00029 U	0.00025 U	0.00024 U	0.000225 U	0.00022 U	0.000225 U	0.000235 U	0.000235 U	0.000235 U	0.000225 U	0.00023 U	0.000235 U	0.00023 U	0.000235 U	0.00047 U	0.00023 U	0.00023 U	0.00025 U
206-44-0	Fluoranthene	1.2	2.2	1.3	0.18	0.013	0.01	0.74	0.75	0.7	6 J	0.64	6.1	8.3	2.9	2.4	2.1	0.015	0.0072 J
86-73-7	Fluorene	0.032 J	0.027 J	0.0165 U	0.008 U	0.0008 U	0.00085 U	0.0085 U	0.0085 U	0.017 J	0.87 J	0.04	0.11	0.6	0.046 J	0.0185 U	0.0165 U	0.00085 U	0.0009 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0105 U
118-74-1	Hexachlorobenzene	0.00455 U	0.00445 U	0.0045 U	0.00445 U	0.00435 U	0.00445 U	0.0046 U	0.0046 U	0.00465 U	0.0044 U	0.00455 U	0.00445 U	0.00455 U	0.0046 U	0.005 U	0.0045 U	0.0045 U	0.00495 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.007 U	0.006 U	0.006 U	0.007 U
67-72-1	Hexachloroethane	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0105 U	0.0095 U	0.0095 U	0.0105 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.2	0.69	1.3	0.23	0.01	0.0094	0.51	0.52	0.5	0.32 J	0.04	5.2	4.9	2.3	2	1.1	0.026	0.0036 J
98-82-8	Isopropylbenzene	0.000315 U	0.00027 U	0.000265 UJ	0.000245 U	0.00024 U	0.00025 U	0.000255 U	0.000255 U	0.00026 U	0.000245 U	0.00025 U	0.00026 UJ	0.000255 U	0.000255 U	0.00055 U	0.00025 U	0.00025 U	0.000275 U
7439-92-1	Lead	9	5	160	160	5.9	6.9	14	15	17	3.8	5.9	440	24	39	29	18	1.9	14
136777-61-2	m,p-Xylenes	0.0006 U	0.00055 U	0.000495 U	0.000465 U	0.000455 U	0.000465 U	0.00048 U	0.00048 U	0.000485 U	0.00046 U	0.000475 U	0.000485 U	0.000475 U	0.00048 U	0.001 U	0.00047 U	0.00047 U	0.00055 U
541-73-1	m-Dichlorobenzene	3.45E-05 U	2.95E-05 U	2.85E-05 UJ	0.000027 U	2.65E-05 U	0.000027 U	0.000028 U	2.75E-05 U	0.000028 U	2.65E-05 U	2.75E-05 U	0.000028 UJ	2.75E-05 U	0.000028 U	0.00006 U	0.000027 U	0.000027 U	0.00003 U
7439-97-6	Mercury	0.83	0.55	0.31	0.23	0.025	0.041	0.045	0.051	0.047	0.027	0.053	0.34	0.08	0.46	0.48 J	0.2 J	0.015 J	0.062 J
79-20-9	Methyl acetate	0.00013 U	0.000115 U	0.00011 U	0.000105 U	0.0001 U	0.000105 U	0.000105 U	0.000105 U	0.00011 U	0.0001 U	0.000105 U	0.00011 U	0.000105 U	0.000105 U	0.000215 U	0.000105 U	0.000105 U	0.000115 U
78-93-3	Methyl ethyl ketone	0.0008 U	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.00125 U	0.0006 U	0.0006 U	0.0007 U
108-10-1	Methyl isobutyl ketone	0.000485 U	0.00042 U	0.000405 U	0.00038 U	0.00037 U	0.00038 U	0.000395 U	0.00039 U	0.000395 U	0.000375 U	0.000385 U	0.0004 U	0.00039 U	0.000395 U	0.0008 U	0.000385 U	0.000385 U	0.000425 U
591-78-6	Methyl n-butyl ketone	0.0007 U	0.0006 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00115 U	0.00055 U	0.00055 U	0.0006 U
108-88-3	Methylbenzene	0.00029 U	0.00025 U	0.00024 U	0.000225 U	0.00022 U	0.000225 U	0.000235 U	0.000235 U	0.000235 U	0.000225 U	0.00023 U	0.000235 U	0.00023 U	0.000235 U	0.00047 U	0.00023 U	0.00023 U	0.00025 U
108-87-2	Methylcylohexane	0.000305 U	0.00026 U	0.000255 U	0.000235 U	0.00023 U	0.00024 U	0.000245 U	0.000245 U	0.000245 UJ	0.000235 U	0.00024 U	0.00025 U	0.00024 U	0.000245 U	0.00049 U	0.00024 U	0.00024 U	0.000265 U
91-20-3	Naphthalene	0.039	0.022 J	0.063 J	0.018 J	0.00027 U	0.000275 U	0.036 J	0.043	0.05	0.11 J	0.012	0.8	0.64	0.006 U	0.0065 U	0.006 U	0.000275 U	0.000305 U
98-95-3	Nitrobenzene	0.011 U	0.011 U	0.011 U	0.011 U	0.0105 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 UJ	0.0125 UJ	0.011 UJ	0.011 U	0.012 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.01 U	0.01 U	0.011 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.007 U	0.006 U	0.006 U	0.007 U
95-47-6	o-Xylene	0.000275 U	0.000235 U	0.00023 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.00021 U	0.00022 U	0.000225 U	0.00022 U	0.000225 U	0.000445 U	0.00022 U	0.000215 U	0.00024 U
106-47-8	p-Chloroaniline	0.0145 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.016 U	0.014 U	0.014 U	0.0155 U
87-86-5	Pentachlorophenol	0.94	0.72	0.22 J	0.00375 U	0.000365 U	0.000375 U	0.19 J	0.21 J	0.21 J	0.1 J	0.013 J	0.69 J	0.94 J	1.9	1.4	0.33 J	0.017 J	0.012 J
85-01-8	Phenanthrene	0.18	0.42	0.2	0.045 J	0.0039 J	0.0018 U	0.19	0.18	0.21	5.2 J	0.46	1.7	2.5	0.6	0.48	0.36	0.0036 J	0.002 U
108-95-2	Phenol	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.01 U	0.009 U	0.009 U	0.01 U
100-01-6	p-Nitroaniline	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.0075 U	0.0065 U	0.0065 U	0.0075 U
129-00-0	Pyrene	1.5	1.9	1.6	0.23	0.014	0.012	0.76	0.77	0.7	3.8 J	0.42	6.4	8.6	2.8	2.3	1.9	0.015	0.0057 J
7782-49-2	Selenium	0.45 U	0.425 U	0.43 U	0.435 U	0.41 U	0.44 U	0.45 U	0.455 U	0.435 U	0.44 U	0.445 U	0.435 U	0.445 U	0.445 U	0.5 U	0.445 U	0.43 U	0.495 U
7440-22-4	Silver	0.205 U	0.195 U	0.195 U	0.195 U	0.185 U	0.2 U	0.205 U	0.205 U	0.195 U	0.2 U	0.2 U	0.195 U	0.2 U	0.2 U	0.23 U	0.2 U	0.195 U	0.225 U
100-42-5	Styrene (monomer)	0.000295 U	0.000255 U	0.000245 U	0.00023 U	0.000225 U	0.00023 U	0.00024 U	0.00024 U	0.00024 U	0.00023 U	0.000235 U	0.00024 U	0.000235 U	0.00024 U	0.00048 U	0.000235 U	0.000235 U	0.00026 U
1634-04-4	tert-Butyl methyl ether	0.00022 U	0.00019 U	0.000185 U	0.00017 U	0.00017 U	0.000175 U	0.00018 U	0.00018 U	0.00018 U	0.00017 U	0.000175 U	0.00018 U	0.000175 U	0.00018 U	0.000355 U	0.000175 U	0.000175 U	0.000195 U
127-18-4	Tetrachloroethylene	0.000275 U	0.000235 U	0.00023 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.00021 U	0.00022 U	0.000225 U	0.00022 U	0.000225 U	0.000445 U	0.00022 U	0.000215 U	0.00024 U
156-60-5	trans-1,2-Dichloroethene	0.00026 U	0.000225 U	0.00022 U	0.000205 U	0.0002 U	0.000205 U	0.00021 U	0.00021 U	0.000215 U	0.0002 U	0.00021 U	0.000215 U	0.00021 U	0.00021 U	0.000425 U	0.00021 U	0.000205 U	0.00023 U
10061-02-6	trans-1,2-Dichloropropene	0.000205 U	0.00018 U	0.000175 U	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.000165 U	0.00017 U	0.00016 U	0.000165 U	0.00017 U	0.000165 U	0.00017 U	0.000335 U	0.000165 U	0.000165 U	0.00018 U
75-25-2	Tribromomethane	0.00027 U	0.00023 U	0.000225 U	0.00021 U	0.000205 U	0.00021 U	0.000215 U	0.000215 U	0.00022 U	0.000205 U	0.000215 U	0.00022 U	0.000215 U	0.000215 U	0.000435 U	0.000215 U	0.00021 U	0.000235 U
79-01-6	Trichloroethylene	0.000275 U	0.000235 U	0.00023 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.00021 U	0.00022 U	0.000225 U	0.00022 U	0.000225 U	0.000445 U	0.00022 U	0.000215 U	0.00024 U
7440-62-2	Vanadium	2.2	1.3	4.8	4.6	1.6	4.9	1.8 J	3.6 J	3.4	3.9	3	4.6	5.2	0.475 UJ	0.55 UJ	0.48 UJ	0.46 UJ	30 J
75-01-4	Vinyl chloride	0.000165 U	0.000145 U	0.00014 U	0.00013 U	0.000125 U	0.00013 U	0.000135 U	0.000135 U	0.000135 U	0.00013 U	0.00013 U	0.000135 U	0.000135 U	0.000135 U	0.00027 U	0.00013 U	0.00013 U	0.000145 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran			0.000459	3.82E-05	4.47E-06 J	5.91E-06						0.00317	0.00315	0.0104	0.00936	0.00026	1.38E-05	4.43E-05
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin			0.00377	0.000219	2.89E-05	3.73E-05						0.0246	0.0255	0.0707	0.0599	0.00305	0.000103	0.000413
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran			2.67E-05	1.74E-06 J	2.26E-07 U	3.15E-07 J						0.000183	0.000205	0.0006	0.000545	1.85E-05	1.6E-06 J	3.98E-06 J
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran			0.000014	2.62E-06 J	1.72E-07 J	1.71E-07 J						6.88E-05 J	7.12E-05	0.000319	0.000277	9.32E-06	6.01E-07 J	1.57E-06 J
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin			2.58E-05	1.49E-06 J	2.21E-07 J	2.77E-07 J						0.000229	0.000156	0.000606	0.000577	1.66E-05	8.28E-07 J	2.51E-06 J
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran			8.32E-06	1.48E-06 J	1.17E-07 J	4.7E-08 U						8.46E-05	4.38E-05 J	0.000175	0.000161	4.46E-06 J	1.05E-07 U	1.12E-06 J
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin			7.88E-05	4.96E-06 J	7.71E-07 J	8.51E-07 J						0.000668	0.000636	0.00211	0.00186	5.42E-05	2.81E-06 J	1.46E-05
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran			3.01E-06	1.68E-06 J	2.4E-08 U	3.35E-08 U						1.53E-05 J	1.96E-05 J	8.76E-05	7.49E-05	2.37E-07 U	1.16E-07 U	3.15E-08 U
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin			4.15E-05	4.86E-06 J	6.19E-07 J	8.57E-07 J						0.000436	0.000284	0.00116	0.00106	5.08E-05	2E-06 J	6.94E-06
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran			1.36E-06 J	3.35E-07 J	1.45E-08 U	1E-08 U						0.003645 U	7.58E-06 J	1.65E-05 J	1.86E-05 J	9.26E-07 J	7.65E-08 U	1.22E-07 U
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin			6.29E-06	5.81E-07 J	1.34E-07 J	1.3E-08 U						0.00009	4.57E-05 J	0.000187	0.000177	5.71E-06	5E-07 J	1.23E-06 J
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran			1.42E-05	1.41E-06 J	1.95E-08 U	1.29E-07 J						0.00014	9.68E-05	0.000359	0.000336	7.49E-06	1E-07 U	2.36E-06 J
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran			3.93E-06	3.53E-07 U	1.65E-08 U	1.1E-08 U						1.92E-05 J	2.17E-05 J	8.27E-05	7.92E-05	9.21E-07 J	9.7E-08 U	3.09E-07 J
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran			7.92E-07 J	4.27E-07 J	1.7E-08 U	1.15E-08 U						0.00204 U	6.02E-06 J	1.36E-05 J	0.000013 J	6.8E-07 J	1.65E-08 U	2.45E-07 U
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin			5.07E-07	9.5E-09 U	7.5E-09 U	1.2E-08 U						9.13E-06 J	4.08E-06 J	0.000011 J	9.47E-06 J	2.91E-07 U	4.7E-08 U	1.45E-08 U
39001-02-0	Octachlorodibenzofuran			0.00196	0.000119	1.48E-05	1.89E-05						0.0132	0.0171	0.0377	0.0335	0.001274	5.95E-05	0.000147
3268-87-9	Octachlorodibenzo-p-dioxin			0.0361	0.001785	0.000244	0.000331						0.267	0.304	0.689	0.568	0.026715	0.000972	0.003387

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS038DB	SS039AA	SS039BA	SS039BB	SS039CA	SS039DA	SS040AA	SS040BA	SS041AA	SS041BA	SS041CA	SS041DA	SS042AA	SS042BA	SS042BB	SS043AA	SS043BA	SS043BB
	Sample Date	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	01-Dec-06	01-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.00007 U	0.000065 U	0.000065 U	0.000075 U	0.000065 U	0.00007 U	0.000095 U	0.000095 U	0.000085 U	0.00007 U	0.000065 U	0.00007 U	0.000135 U	0.000075 U	0.000075 U	0.000065 U	0.00007 U	0.00007 U
79-34-5	1,1,2,2-Tetrachloroethane	0.000038 U	3.55E-05 U	0.000035 U	0.000041 U	3.45E-05 U	3.65E-05 U	0.00005 U	0.000055 U	4.45E-05 U	3.75E-05 U	3.45E-05 U	0.000037 U	0.000075 U	4.15E-05 U	0.00004 U	0.000036 U	0.000036 U	0.000036 U
79-00-5	1,1,2-Trichloroethane	0.000075 U	0.00007 U	0.00007 U	0.000085 U	0.00007 U	0.000075 U	0.0001 U	0.000105 U	0.00009 U	0.000075 U	0.00007 U	0.000075 U	0.000145 U	0.000085 U	0.00008 U	0.000075 U	0.000075 U	0.000075 U
75-34-3	1,1-Dichloroethane	3.65E-05 U	0.000034 U	3.35E-05 U	0.000039 U	0.000033 U	3.45E-05 U	0.000048 U	0.00005 U	4.25E-05 U	0.000036 U	0.000033 U	3.55E-05 U	0.00007 U	3.95E-05 U	3.85E-05 U	3.45E-05 U	3.45E-05 U	3.45E-05 U
75-35-4	1,1-Dichloroethylene	0.0001 U	0.000095 U	0.00009 U	0.00011 U	0.00009 U	0.000095 U	0.00013 U	0.000135 U	0.000115 U	0.0001 U	0.00009 U	0.0001 U	0.00019 U	0.00011 U	0.000105 U	0.000095 U	0.000095 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.00009 U	0.000085 U	0.00008 U	0.000095 U	0.00008 U	0.000085 U	0.000115 UJ	0.00012 UJ	0.000105 UJ	0.000085 U	0.00008 U	0.000085 U	0.000165 UJ	0.000095 U	0.000095 U	0.000085 U	0.000085 UJ	0.000085 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.000285 U	0.000265 U	0.00026 U	0.000305 U	0.00026 U	0.00027 U	0.000375 UJ	0.00039 UJ	0.00033 UJ	0.00028 U	0.000255 U	0.000275 U	0.00055 UJ	0.00031 U	0.0003 U	0.000265 U	0.00027 UJ	0.00027 UJ
106-93-4	1,2-Dibromoethane	3.25E-05 U	3.05E-05 U	0.00003 U	0.000035 U	2.95E-05 U	0.000031 U	4.25E-05 U	4.45E-05 U	0.000038 U	0.000032 U	2.95E-05 U	3.15E-05 U	0.000065 U	0.000035 U	0.000034 U	3.05E-05 U	3.05E-05 U	3.05E-05 U
95-50-1	1,2-Dichlorobenzene	0.000045 U	0.00066 J	4.15E-05 U	4.85E-05 U	0.000041 U	0.000043 U	0.00006 UJ	0.000065 UJ	0.000055 UJ	0.000044 U	4.05E-05 U	0.000044 U	0.00009 UJ	0.000049 U	4.75E-05 U	4.25E-05 U	4.25E-05 UJ	4.25E-05 UJ
107-06-2	1,2-Dichloroethane	0.00006 U	0.000055 U	0.000055 U	0.000065 U	0.000055 U	0.000055 U	0.00008 U	0.00008 U	0.00007 U	0.00006 U	0.000055 U	0.00006 U	0.00011 U	0.000065 U	0.000065 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.000031 U	0.000029 U	0.000029 U	3.35E-05 U	2.85E-05 U	0.00003 U	0.000041 U	0.000043 U	3.65E-05 U	3.05E-05 U	2.85E-05 U	3.05E-05 U	0.00006 U	0.000034 U	0.000033 U	2.95E-05 U	2.95E-05 U	2.95E-05 U
106-46-7	1,4-Dichlorobenzene	0.00005 U	0.000047 U	0.000046 U	0.000055 U	4.55E-05 U	0.000048 U	0.00007 UJ	0.00007 UJ	0.00006 UJ	4.95E-05 U	4.55E-05 U	0.000049 U	0.000095 UJ	0.000055 U	0.000055 U	0.000047 U	4.75E-05 UJ	4.75E-05 UJ
95-95-4	2,4,5-Trichlorophenol	0.0075 U	0.007 U	0.007 U	0.0085 U	0.007 U	0.0075 U	0.009 U	0.0085 U	0.0075 U	0.0075 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U
88-06-2	2,4,6-Trichlorophenol	0.021 U	0.0195 U	0.019 U	0.0225 U	0.019 U	0.02 U	0.024 U	0.0235 U	0.0205 U	0.02 U	0.019 U	0.019 U	0.022 U	0.02 U	0.02 U	0.0195 U	0.02 U	0.02 U
120-83-2	2,4-Dichlorophenol	0.01 U	0.0095 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.011 U	0.0105 U	0.01 U	0.012 U	0.01 U	0.0105 U	0.0125 U	0.0125 U	0.011 U	0.011 U	0.01 U	0.01 U	0.012 U	0.036 J	0.036 J	0.0105 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.008 UJ	0.008 UJ	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0075 UJ	0.007 UJ	0.007 UJ	0.0065 U	0.007 U	0.007 U
121-14-2	2,4-Dinitrotoluene	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.021 U	0.0195 U	0.019 U	0.0225 U	0.019 U	0.02 U	0.024 U	0.0235 U	0.0205 U	0.02 U	0.019 U	0.019 U	0.022 U	0.02 U	0.02 U	0.0195 U	0.02 U	0.02 U
91-58-7	2-Chloronaphthalene	0.0095 U	0.009 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.0105 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.0105 U	0.01 U	0.0095 U	0.0115 U	0.0095 U	0.01 U	0.012 U	0.012 U	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.0009 U	0.0085 U	0.0008 U	0.00095 U	0.0008 U	0.00085 U	0.37	0.39	0.083	0.14	0.0008 U	0.00085 U	0.15 J	0.092 J	0.041 U	0.074	0.063 J	0.069 J
95-48-7	2-Methylphenol (o-cresol)	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.008 U	0.008 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U
88-74-4	2-Nitroaniline	0.013 U	0.012 UJ	0.012 U	0.014 U	0.0115 U	0.012 U	0.0145 UJ	0.0145 UJ	0.0125 U	0.0125 U	0.0115 U	0.0115 U	0.0135 UJ	0.0125 UJ	0.0125 UJ	0.012 UJ	0.012 U	0.012 UJ
88-75-5	2-Nitrophenol	0.0085 U	0.008 U	0.0075 U	0.009 U	0.0075 U	0.008 U	0.0095 U	0.0095 U	0.008 U	0.008 U	0.0075 U	0.0075 U	0.009 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.02 U	0.0185 U	0.018 U	0.021 U	0.018 U	0.0185 U	0.0225 U	0.022 U	0.0195 U	0.019 U	0.018 U	0.018 U	0.021 U	0.019 U	0.019 U	0.0185 U	0.0185 UJ	0.0185 UJ
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.0075 U	0.007 U	0.007 U	0.0085 U	0.007 U	0.0075 U	0.009 U	0.0085 U	0.0075 U	0.0075 U	0.007 U	0.007 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U
99-09-2	3-Nitroaniline	0.01 U	0.0095 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 U	0.0055 U	0.00495 U	0.006 U	0.0049 U	0.0055 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U	0.0049 U	0.00485 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
101-55-3	4-Bromophenyl phenyl ether	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.0095 U	0.009 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.0105 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.013 U	0.012 U	0.012 U	0.014 U	0.0115 U	0.012 U	0.0145 U	0.0145 U	0.0125 U	0.0125 U	0.0115 U	0.0115 U	0.0135 U	0.0125 U	0.0125 U	0.012 U	0.012 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.015 U	0.014 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0175 U	0.017 U	0.015 U	0.0145 U	0.014 U	0.0135 U	0.016 U	0.0145 U	0.0145 U	0.0145 U	0.0145 U	0.0145 U
100-02-7	4-Nitrophenol	0.01 U	0.0095 UJ	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 UJ	0.011 UJ	0.01 U	0.0095 U	0.009 U	0.009 U	0.0105 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 U	0.0095 UJ
83-32-9	Acenaphthene	0.00155 U	0.0145 U	0.00145 U	0.0017 U	0.00145 U	0.0015 U	0.09 U	0.09 U	0.045 J	0.11	0.00145 U	0.0034 J	0.085 U	0.075 U	0.075 U	0.07 J	0.061 J	0.079 J
208-96-8	Acenaphthylene	0.006 J	0.25	0.0037 J	0.00165 U	0.0014 U	0.00145 U	1.2	1.2	0.68	0.48	0.046	0.0063 J	2.2	2.3	1.8	0.79	0.72	0.73
67-64-1	Acetone	0.00145 U	0.00135 U	0.00135 U	0.00155 U	0.00135 U	0.01 J	0.0019 U	0.002 U	0.0055 J	0.0061 J	0.01 J	0.012 J	0.00275 U	0.0016 U	0.00155 U	0.00135 U	0.0014 U	0.0014 U
120-12-7	Anthracene	0.011 J	0.53	0.0067	0.0039 J	0.0066	0.0018 J	2.2	2.6	1.3	0.89	0.088	0.011	2.9	3.4	2.9	2	2	1.9
7440-36-0	Antimony	0.19 U	1.6	0.17 U	0.19 U	0.165 U	0.18 U	6.6	5.2	0.91 J	0.49 J	0.165 UJ	0.18 UJ	0.52 J	0.18 U	0.175 U	0.18 UJ	0.185 UJ	0.58 J
7440-38-2	Arsenic	120 J	77	14	12	3.7	1.4	310	240	37	26	3.3 J	0.215 U	23	15	14	17	20	16
7440-39-3	Barium	30 J	14	3.6	3.3	6.3	20	120	100	28	20	12 J	10 J	22	17	16	8.1	7.9	7.7
71-43-2	Benzene	0.000225 U	0.00021 U	0.00021 U	0.000245 U	0.000205 U	0.000215 U	0.000295 U	0.00031 U	0.000265 U	0.00022 U	0.000205 U	0.00022 U	0.00043 U	0.000245 U	0.00024 U	0.000215 U	0.000215 U	0.000215 U
56-55-3	Benzo(a)anthracene	0.0056	0.43	0.0034 J	0.0026 J	0.0044	0.0011 J	1.5	1.4	0.83	0.49	0.048	0.0048	3.6	3.9 J	2.3 J	2.9	0.96	1.1
50-32-8	Benzo(a)pyrene	0.0085 J	0.48	0.0042	0.0028 J	0.0052	0.00065 U	1.8	1.6	1.2	0.69	0.068	0.004	4.4	4.5	3.4	1.9	1.1	1.2
205-99-2	Benzo(b)fluoranthene	0.021 J	0.88	0.0094	0.006	0.012	0.003 J	3.9	3.4	2.7 J	1.6 J	0.16 J	0.01 J	6.4	6.6	5.1	3.9	2.3	2.5
191-24-2	Benzo(g,h,i)perylene	0.015 J	0.47	0.007	0.0036 J	0.0082	0.0018 J	2.8	2.9	1.5	0.91	0.11	0.006	3	3.3	2.6	1.6	1.2	1.2
207-08-9	Benzo(k)fluoranthene	0.014 J	0.73	0.0071	0.0047	0.0093	0.0024 J	2.7	2.6	1.2	0.73	0.079	0.0055	5.6	5.4 J	3.9 J	3.2	1.7	2
85-68-7	Benzyl butyl phthalate	0.0105 U	0.01 U	0.0095 U	0.0115 U	0.0095 U	0.01 U	0.044 J	0.049 J	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ
92-52-4	Biphenyl	0.09 U	0.085 U	0.08 U	0.095 U	0.08 U	0.085 U	0.1 U	0.1 U	0.09 U	0.085 U	0.08 U	0.08 U	0.095 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.01 U	0.0095 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.009 U	0.0085 U	0.008 U	0.0095 U	0.008 U	0.0085 U	0.01 U	0.01 U	0.009 UJ	0.0085 U	0.008 U	0.008 UJ	0.0095 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 UJ
39638-32-9	Bis(2-chloroisopropyl) ether	0.0125 UJ	0.0115 UJ	0.0115 UJ	0.013 U	0.011 UJ	0.0115 UJ	0.014 UJ	0.014 UJ	0.012 U	0.012 U	0.011 U	0.011 U	0.013 UJ	0.012 UJ	0.0115 UJ	0.0115 UJ	0.0115 U	0.0115 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.0095 U	0.009 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.062 J	0.069 J	0.02 J	0.009 U	0.0085 U	0.0085 U	0.01 U	0.03 J	0.009 U	0.045 J	0.28 J	0.33 J
75-27-4	Bromodichloromethane	0.00017 U	0.00016 U	0.000155 U	0.00018 U	0.000155 U	0.00016 U	0.00022 U	0.00023 U	0.000195 U	0.000165 U	0.000155 U	0.000165 U	0.00032 U	0.000185 U	0.00018 U	0.00016 U	0.00016 U	0.00016 U
74-83-9	Bromomethane	0.000185 U	0.000175 U	0.00017 U	0.0002 U	0.00017 U	0.000175 U	0.000245 U	0.000255 U	0.000215 UJ	0.000185 UJ	0.00017 UJ	0.00018 UJ	0.00035 U	0.0002 U	0.000195 U	0.000175 UJ	0.000175 UJ	0.000175 UJ
7440-43-9	Cadmium	0.16 U	0.45 J	0.145 U	0.165 U	0.14 U	0.155 U	1.9	1.3	0.165 U	0.16 U	0.14 U	0.155 U	0.175 U	0.155 U	0.15 U	0.155 U	0.155 U	0.155 U
86-74-8	Carbazole	0.0095 U	0.075 J	0.0085 U	0.01 U	0.0085 U	0.009 U	0.37	0.4	0.23	0.16 J	0.0085 U	0.0085 U	0.35	0.37	0.41	0.12 J	0.097 J	0.11 J
75-15-0	Carbon disulfide	0.00095 U	0.0009 U	0.00085 U	0.001 U	0.00085 U	0.0009 U	0.00125 U	0.0013 U	0.0011 U	0.00095 U	0.00085 U	0.0009 U	0.00175 U	0.001 U	0.001 U	0.0009 U	0.0009 U	0.0009 U
56-23-5	Carbon tetrachloride	0.000205 U	0.00019 U	0.000185 U	0.00022 U	0.000185 U	0.000195 U	0.000265 U	0.00028 U	0.000235 U	0.0002 U	0.000185 U	0.0002 U	0.000385 U	0.00022 U	0.000215 U	0.00019 U	0.00019 U	0.00019 U
108-90-7	Chlorobenzene	0.00023 U	0.000215 U	0.000215 U	0.00025 U	0.00021 U	0.00022 U	0.000305 U	0.00032 U	0.00027 U	0.00023 U	0.00021 U	0.000225 U	0.00044 U	0.00025 U	0.000245 U	0.00022 U	0.00022 U	0.00022 U
124-48-1	Chlorodibromomethane	0.000145 U	0.000135 U	0.000135 U	0.000155 U	0.000135 U	0.00014 U	0.00019 U	0.0002 U	0.00017 U	0.000145 U	0.00013 U	0.00014 U	0.000275 U	0.00016 U	0.000155 U	0.000135 U	0.00014 U	0.00014 U
75-00-3	Chloroethane	0.00021 U	0.000195 U	0.000195 U	0.000225 U	0.00019 U	0.0002 U	0.000275 U	0.000285 U	0.000245 U	0.000205 U	0.00019 U	0.000205 U	0.000395 U	0.000225 U	0.00022 U	0.000195 U	0.0002 U	0.0002 U
67-66-3	Chloroform	0.000195 U	0.000185 U	0.00018 U	0.000215 U	0.00018 U	0.00019 U	0.00026 U	0.00027 U	0.00023 U	0.000195 U	0.00018 U	0.000195 U	0.000375 U	0.000215 U	0.00021 U	0.000185 U	0.000185 U	0.000185 U
74-87-3	Chloromethane	0.00026 U	0.000245 U	0.00024 U	0.00028 U	0.00024 U	0.00025 U	0.000345 U	0.00036 U	0.000305 U	0.000255 U	0.000235 U	0.000255 U	0.000495 U	0.000285 U	0.000275 U	0.000245 U	0.000245 U	0.000245 U
7440-47-3	Chromium	59 J	140 J	20 J	18 J	6.9 J	14 J	530	380	61	36	8.8	7.3	46	23	22	22	28	23
218-01-9	Chrysene	0.0094 J	0.6	0.005	0.0036 J	0.0068	0.0019 J	2.5	2.2	1.2	0.69	0.066	0.0058	5.3	5.4 J	3.5 J	3.6	1.3	1.5
156-59-2	cis-1,2-Dichloroethylene	0.00015 U	0.00014 U	0.00014 U	0.000165 U	0.00014 U	0.000145 U	0.0002 U	0.00021 U	0.000175 U	0.00015 U	0.000135 U	0.00015 U	0.000285 U	0.000165 U	0.00016 U	0.000145 U	0.000145 U	0.000145 U
10061-01-5	cis-1,3-Dichloropropene	0.00017 U	0.00016 U	0.000155 U	0.00018 U	0.000155 U	0.00016 U	0.00022 U	0.00023 U	0.000195 U	0.000165 U	0.000155 U	0.000165 U	0.00032 U	0.000185 U	0.00018 U	0.00016 U	0.00016 U	0.00016 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS038DB	SS039AA	SS039BA	SS039BB	SS039CA	SS039DA	SS040AA	SS040BA	SS041AA	SS041BA	SS041CA	SS041DA	SS042AA	SS042BA	SS042BB	SS043AA	SS043BA	SS043BB
	Sample Date	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	01-Dec-06	01-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06	05-Dec-06	05-Dec-06	05-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	1.6 J	63 J	1.4 J	1 J	1.1 J	0.6 J	250	190	35	19	2.4 J	0.44 J	28	15	15	14	16	15
110-82-7	Cyclohexane	0.00022 U	0.000205 U	0.000205 U	0.00024 U	0.0002 U	0.00021 U	0.00029 U	0.000305 U	0.000255 U	0.000215 U	0.0002 U	0.000215 U	0.000415 U	0.00024 U	0.00023 U	0.00021 U	0.00021 U	0.00021 U
53-70-3	Dibenzo(a,h)anthracene	0.004	0.15	0.0015 J	0.00032 U	0.0019 J	0.00028 U	0.64	0.63	0.44 J	0.26 J	0.029	0.0015 J	1.1	1.2 J	0.81 J	0.57	0.38	0.38
132-64-9	Dibenzofuran	0.0075 U	0.049 J	0.007 U	0.0085 U	0.007 U	0.0075 U	0.16 J	0.2 J	0.087 J	0.051 J	0.017 J	0.007 U	0.089 J	0.072 J	0.062 J	0.064 J	0.037 J	0.036 J
75-09-2	Dichloromethane	0.000225 U	0.00021 U	0.00021 U	0.000245 U	0.000205 U	0.000215 U	0.000295 U	0.00031 U	0.000265 U	0.00022 U	0.000205 U	0.00022 U	0.00043 U	0.000245 U	0.00024 U	0.000215 U	0.000215 U	0.000215 U
84-66-2	Diethyl phthalate	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.008 U	0.008 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U
131-11-3	Dimethyl phthalate	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.0355 U	0.033 U	0.0325 U	0.038 U	0.032 U	0.0335 U	0.04 U	0.0395 U	0.035 U	0.034 U	0.032 U	0.0315 U	0.0375 U	0.034 U	0.0335 U	0.033 U	0.0335 U	0.0335 U
117-84-0	di-n-Octyl-phthalate	0.009 U	0.0085 U	0.008 U	0.0095 U	0.008 U	0.0085 U	0.01 U	0.01 U	0.009 U	0.0085 U	0.008 U	0.008 U	0.18 J	0.0085 U	0.0085 U	0.0085 U	0.0085 UJ	0.0085 UJ
100-41-4	Ethylbenzene	0.000245 U	0.00023 U	0.000225 U	0.00026 U	0.00022 U	0.00023 U	0.00032 U	0.000335 U	0.000285 U	0.00024 U	0.00022 U	0.000235 U	0.00046 U	0.000265 U	0.000255 U	0.00023 U	0.00023 U	0.00023 U
206-44-0	Fluoranthene	0.012 J	0.73	0.0056	0.00037 U	0.0079	0.000325 U	3.3	2.8	1.1	0.66	0.066	0.014	6.7	7.5 J	4.1 J	8.3	1.9	2.1
86-73-7	Fluorene	0.0009 U	0.0085 U	0.0008 U	0.00095 U	0.0008 U	0.00085 U	0.0495 U	0.1 J	0.045	0.08	0.0008 U	0.0023 J	0.11 J	0.11 J	0.091 J	0.095	0.092	0.11
87-68-3	Hexachloro-1,3-butadiene	0.01 U	0.0095 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0048 U	0.0045 U	0.0044 U	0.0055 U	0.00435 U	0.00455 U	0.0055 U	0.0055 U	0.00475 U	0.00465 U	0.00435 U	0.0043 U	0.0055 U	0.0046 U	0.00455 U	0.0045 U	0.0045 U	0.0045 U
77-47-4	Hexachlorocyclopentadiene	0.0065 U	0.006 U	0.006 U	0.007 U	0.006 U	0.006 U	0.0075 UJ	0.0075 UJ	0.0065 UJ	0.0065 UJ	0.006 U	0.006 U	0.007 UJ	0.0065 UJ	0.0065 UJ	0.006 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.01 U	0.0095 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.0115 U	0.011 U	0.01 U	0.0095 UJ	0.009 U	0.009 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.017 J	0.52	0.0072	0.0039 J	0.0085	0.0019 J	2.9	2.8	1.3	0.79	0.091	0.0049	3.8	3.9	3	2.1	1.5	1.6
98-82-8	Isopropylbenzene	0.000265 U	0.00025 U	0.000245 U	0.000285 U	0.000245 U	0.000255 U	0.00035 UJ	0.000365 UJ	0.00031 UJ	0.00026 U	0.00024 U	0.00026 U	0.00055 UJ	0.00029 U	0.00028 U	0.00025 U	0.00025 UJ	0.00025 UJ
7439-92-1	Lead	11	34	2	1.7	1.8	7.8	270	230	39	19	4.7 J	3.9 J	12	13	13	4.9	6.1	4.7
136777-61-2	m,p-Xylenes	0.0005 U	0.00047 U	0.00046 U	0.00055 U	0.000455 U	0.00048 U	0.0007 U	0.0007 U	0.0006 U	0.000495 U	0.000455 U	0.00049 U	0.00095 U	0.00055 U	0.00055 U	0.00047 U	0.000475 U	0.000475 U
541-73-1	m-Dichlorobenzene	0.000029 U	0.000027 U	2.65E-05 U	0.000031 U	2.65E-05 U	2.75E-05 U	0.000038 UJ	0.00004 UJ	0.000034 UJ	2.85E-05 U	0.000026 U	0.000028 U	0.000055 UJ	3.15E-05 U	3.05E-05 U	0.000027 U	2.75E-05 UJ	2.75E-05 UJ
7439-97-6	Mercury	0.06 J	0.11 J	0.021 J	0.022 J	0.022 J	0.073 J	0.97	1.1	0.28	0.2	0.037	0.025 J	0.13	0.12	0.12	0.088	0.095	0.081
79-20-9	Methyl acetate	0.00011 U	0.000105 U	0.000105 U	0.00012 U	0.0001 U	0.000105 U	0.000145 U	0.000155 U	0.00013 U	0.00011 U	0.0001 U	0.00011 U	0.00021 U	0.00012 U	0.000115 U	0.000105 U	0.000105 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.00065 U	0.0006 U	0.0006 U	0.0007 U	0.0006 U	0.00065 U	0.00085 U	0.0009 U	0.00075 U	0.00065 U	0.0006 U	0.00065 U	0.0012 U	0.0007 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00041 U	0.000385 U	0.000375 U	0.00044 U	0.000375 U	0.00039 U	0.00055 U	0.0006 U	0.00048 U	0.000405 U	0.00037 U	0.0004 U	0.0008 U	0.000445 U	0.00043 U	0.000385 U	0.000385 U	0.000385 U
591-78-6	Methyl n-butyl ketone	0.0006 U	0.00055 U	0.00055 U	0.00065 U	0.00055 U	0.00055 U	0.0008 U	0.0008 U	0.0007 U	0.0006 U	0.00055 U	0.0006 U	0.0011 U	0.00065 U	0.00065 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.000245 U	0.00023 U	0.000225 U	0.00026 U	0.00022 U	0.00023 U	0.00032 U	0.000335 U	0.000285 U	0.00024 U	0.00022 U	0.000235 U	0.00046 U	0.000265 U	0.000255 U	0.00023 U	0.00023 U	0.00023 U
108-87-2	Methylcylohexane	0.000255 U	0.00024 U	0.000235 U	0.000275 U	0.00023 U	0.000245 U	0.000335 U	0.00035 U	0.000295 U	0.00025 U	0.00023 U	0.00025 U	0.00048 U	0.000275 U	0.00027 U	0.00024 U	0.00024 U	0.00024 U
91-20-3	Naphthalene	0.000295 U	0.00275 U	0.00027 U	0.00032 U	0.00027 U	0.00028 U	0.46	0.47	0.12	0.2	0.000265 U	0.015 J	0.19 J	0.13 J	0.1 J	0.086	0.077	0.08
98-95-3	Nitrobenzene	0.0115 U	0.011 UJ	0.011 U	0.0125 U	0.0105 U	0.011 U	0.0135 U	0.013 U	0.0115 U	0.0115 U	0.0105 U	0.0105 U	0.0125 U	0.0115 U	0.011 U	0.011 UJ	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0105 U	0.01 U	0.0095 U	0.0115 U	0.0095 U	0.01 U	0.012 U	0.012 U	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.0065 U	0.006 U	0.006 U	0.007 U	0.006 U	0.006 U	0.0075 U	0.0075 U	0.0065 U	0.0065 U	0.006 U	0.006 U	0.007 U	0.0065 U	0.0065 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.00023 U	0.000215 U	0.000215 U	0.00025 U	0.00021 U	0.00022 U	0.000305 U	0.00032 U	0.00027 U	0.00023 U	0.00021 U	0.000225 U	0.00044 U	0.00025 U	0.000245 U	0.00022 U	0.00022 U	0.00022 U
106-47-8	p-Chloroaniline	0.015 U	0.014 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0175 U	0.017 U	0.015 U	0.0145 U	0.014 U	0.0135 U	0.016 U	0.0145 U	0.0145 U	0.0145 U	0.0145 U	0.0145 U
87-86-5	Pentachlorophenol	0.013 J	0.27 J	0.015 J	0.014 J	0.013 J	0.01 J	6.5	3.2	0.41	0.3 J	0.029 J	0.0015 J	0.31 J	0.45 J	0.37 J	0.83 J	0.58 J	0.52 J
85-01-8	Phenanthrene	0.004 J	0.18	0.00175 U	0.00205 U	0.00175 U	0.00185 U	1.2	1.1	0.32	0.21	0.00175 U	0.0057 J	0.66	0.61	0.47	0.58	0.32	0.34
108-95-2	Phenol	0.0095 U	0.009 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.0105 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.008 U	0.008 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0075 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U
129-00-0	Pyrene	0.012 J	0.76	0.0061	0.0048	0.0085	0.0026 J	3	2.6	1.4	0.87	0.091	0.012	8	8.4 J	5.5 J	6.1	1.6	1.8
7782-49-2	Selenium	0.465 U	0.45 U	0.425 U	0.475 U	0.41 U	0.44 U	0.55 U	0.55 U	0.47 UJ	0.465 UJ	0.4 U	0.445 U	0.5 U	0.445 U	0.43 U	0.45 U	0.455 U	0.445 U
7440-22-4	Silver	0.21 U	0.205 U	0.195 U	0.215 U	0.185 U	0.2 U	0.245 U	0.24 U	0.215 U	0.21 U	0.18 U	0.2 U	0.23 U	0.2 U	0.195 U	0.205 U	0.205 U	0.2 U
100-42-5	Styrene (monomer)	0.00025 U	0.000235 U	0.00023 U	0.00027 U	0.000225 U	0.000235 U	0.000325 U	0.00034 U	0.00029 U	0.000245 U	0.000225 U	0.000245 U	0.00047 U	0.00027 U	0.000265 U	0.000235 U	0.000235 U	0.000235 U
1634-04-4	tert-Butyl methyl ether	0.000185 U	0.000175 U	0.00017 U	0.0002 U	0.00017 U	0.000175 U	0.000245 U	0.000255 U	0.000215 U	0.000185 U	0.00017 U	0.00018 U	0.00035 U	0.0002 U	0.000195 U	0.000175 U	0.000175 U	0.000175 U
127-18-4	Tetrachloroethylene	0.00023 U	0.000215 U	0.000215 U	0.00025 U	0.00021 U	0.00022 U	0.000305 U	0.00032 U	0.00027 U	0.00023 U	0.00021 U	0.000225 U	0.00044 U	0.00025 U	0.000245 U	0.00022 U	0.00022 U	0.00022 U
156-60-5	trans-1,2-Dichloroethene	0.00022 U	0.000205 U	0.000205 U	0.00024 U	0.0002 U	0.00021 U	0.00029 U	0.000305 U	0.000255 U	0.000215 U	0.0002 U	0.000215 U	0.000415 U	0.00024 U	0.00023 U	0.00021 U	0.00021 U	0.00021 U
10061-02-6	trans-1,2-Dichloropropene	0.000175 U	0.000165 U	0.00016 U	0.00019 U	0.00016 U	0.000165 U	0.00023 U	0.00024 U	0.000205 U	0.00017 U	0.00016 U	0.00017 U	0.00033 U	0.00019 U	0.000185 U	0.000165 U	0.000165 U	0.000165 U
75-25-2	Tribromomethane	0.000225 U	0.00021 U	0.00021 U	0.000245 U	0.000205 U	0.000215 U	0.000295 U	0.00031 U	0.000265 U	0.00022 U	0.000205 U	0.00022 U	0.00043 U	0.000245 U	0.00024 U	0.000215 U	0.000215 U	0.000215 U
79-01-6	Trichloroethylene	0.00023 U	0.000215 U	0.000215 U	0.00025 U	0.00021 U	0.00022 U	0.000305 U	0.00032 U	0.00027 U	0.00023 U	0.00021 U	0.000225 U	0.00044 U	0.00025 U	0.000245 U	0.00022 U	0.00022 U	0.00022 U
7440-62-2	Vanadium	22 J	3.9	0.455 UJ	0.5 UJ	2	12	5.8 J	4.3 J	6.2 J	5.2 J	4.4 J	3.2 J	3 J	3.5 J	3 J	2.7	2.7	3
75-01-4	Vinyl chloride	0.00014 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.000135 U	0.000185 U	0.00019 U	0.000165 U	0.00014 U	0.000125 U	0.000135 U	0.000265 U	0.00015 U	0.00015 U	0.00013 U	0.000135 U	0.000135 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.47E-05								0.006852 J	0.00362	0.000326	4.82E-05				0.000821	0.000819	0.001069
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.000171								0.076192	0.0334	0.003063	0.000435				0.009565	0.00928	0.012879
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.38E-06 J								0.000291	0.000243	1.99E-05	3.18E-06 J				5.89E-05	5.88E-05	6.88E-05
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	3.38E-06 J								0.00014 J	0.000105	9.76E-06	1.53E-06 J				2.9E-05	2.61E-05	3.36E-05
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	7.81E-07 J								0.00031	0.000247	2.06E-05	3.05E-06 J				6.49E-05	5.88E-05	7.66E-05
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	1.19E-06 J								0.000107 J	7.82E-05	6.97E-06	1.09E-06 J				2.15E-05	1.73E-05	2.29E-05
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	2.76E-06 J								0.001001	0.00072	6.52E-05	8.72E-06				0.000197	0.000185	0.000232
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	5.3E-08 U								3.5E-06 J	3.01E-05	2.11E-07 U	1.79E-07 U				2.04E-06 J	4.79E-07 J	8.84E-07 J
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.07E-06 J								0.000795	0.000445	6.1E-05	9.04E-06				0.000186	0.000159	0.000196
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	2.32E-06 J								1.31E-05	9.79E-06	8.29E-07 J	7.75E-08 U				3.73E-06 J	2.12E-06 J	2.76E-06 J
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	3.34E-07 J								9.28E-05	5.88E-05	5.38E-06	8.64E-07 J				2.28E-05	1.89E-05	2.54E-05
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	8.67E-07 J								0.000216	0.00016	1.66E-05	2.33E-06 J				1.56E-05	1.26E-05	1.73E-05
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	9.97E-07 J								1.85E-05	3.68E-05	1.07E-06 J	2.2E-07 J				5.07E-06 J	2.87E-06 J	3.72E-06 J
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	1.82E-06								4.62E-06	3.34E-06	2.16E-07 U	2.75E-08 U				1.15E-06 J	6.59E-07 J	1.08E-06 J
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	2.9E-08 U								3.73E-06	1.86E-06	2.3E-08 U	2.55E-08 U				2.66E-06	1.59E-06	1.77E-06
39001-02-0	Octachlorodibenzofuran	6.02E-05								0.061559 J	0.0142	0.001786	0.000231				0.003759	0.005508	0.008341
3268-87-9	Octachlorodibenzo-p-dioxin	0.000977								0.95238 J	0.346	0.035328 J	0.004358				0.093291 J	0.106046 J	0.163147 J

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS044AA	SS044BA	SS045AA	SS045BA	SS045CA	SS045DA	SS046AA	SS046BA	SS046CA	SS046DA	SS047AA	SS047AC	SS047BA	SS047CA	SS047DA	SS048AA	SS048BA	SS048BB
	Sample Date	05-Dec-06	05-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.0001 U	0.000095 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000075 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.00007 U	0.000065 U	0.00007 U	0.00007 U	0.000075 U
79-34-5	1,1,2,2-Tetrachloroethane	0.000055 U	0.000055 U	3.55E-05 U	3.55E-05 U	3.45E-05 U	3.45E-05 U	4.05E-05 U	0.000035 U	0.000035 U	3.55E-05 U	0.000036 U	0.000036 U	0.000036 U	3.65E-05 U	3.55E-05 U	0.000037 U	0.000036 U	0.00004 U
79-00-5	1,1,2-Trichloroethane	0.000105 U	0.000105 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00008 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.00007 U	0.000075 U	0.000075 U	0.00008 U
75-34-3	1,1-Dichloroethane	0.00005 U	0.000049 U	0.000034 U	0.000034 U	0.000033 U	0.000033 U	3.85E-05 U	3.35E-05 U	3.35E-05 U	0.000034 U	0.000034 U	3.45E-05 U	3.45E-05 U	0.000035 U	0.000034 U	0.000035 U	3.45E-05 U	0.000038 U
75-35-4	1,1-Dichloroethylene	0.000135 U	0.000135 U	0.000095 U	0.000095 U	0.00009 U	0.00009 U	0.000105 U	0.000095 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000105 U
120-82-1	1,2,4-Trichlorobenzene	0.00012 UJ	0.00012 UJ	0.000085 U	0.000085 U	0.00008 U	0.00008 U	0.000095 UJ	0.00008 U	0.00008 U	0.00008 U	0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.000085 U	0.000095 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00039 UJ	0.00038 UJ	0.000265 U	0.000265 U	0.000255 U	0.000255 U	0.0003 UJ	0.00026 U	0.00026 U	0.000265 U	0.000265 U	0.00027 U	0.00027 U	0.000275 U	0.000265 U	0.000275 U	0.00027 U	0.0003 U
106-93-4	1,2-Dibromoethane	4.45E-05 U	4.35E-05 U	0.00003 U	0.00003 U	2.95E-05 U	2.95E-05 U	0.000034 U	0.00003 U	0.00003 U	0.00003 U	3.05E-05 U	3.05E-05 U	0.000031 U	0.000031 U	0.00003 U	3.15E-05 U	3.05E-05 U	0.000034 U
95-50-1	1,2-Dichlorobenzene	0.000065 UJ	0.000065 UJ	0.000042 U	0.000042 U	0.000041 U	4.05E-05 U	4.75E-05 UJ	4.15E-05 U	4.15E-05 U	0.000042 U	4.25E-05 U	4.25E-05 U	4.25E-05 U	0.000043 U	0.000042 U	4.35E-05 U	4.25E-05 U	0.000047 U
107-06-2	1,2-Dichloroethane	0.00008 U	0.00008 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000065 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000055 U	0.000065 U
78-87-5	1,2-Dichloropropane	0.000043 U	0.000042 U	0.000029 U	0.000029 U	2.85E-05 U	0.000028 U	0.000033 U	0.000029 U	0.000029 U	0.000029 U	2.95E-05 U	2.95E-05 U	2.95E-05 U	0.00003 U	0.000029 U	0.00003 U	2.95E-05 U	0.000033 U
106-46-7	1,4-Dichlorobenzene	0.00007 UJ	0.00007 UJ	0.000047 U	0.000047 U	4.55E-05 U	4.55E-05 U	0.000055 UJ	4.65E-05 U	0.000046 U	4.65E-05 U	0.000047 U	4.75E-05 U	4.75E-05 U	0.000048 U	4.65E-05 U	4.85E-05 U	4.75E-05 U	0.000055 U
95-95-4	2,4,5-Trichlorophenol	0.08 U	0.0095 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.0075 U
88-06-2	2,4,6-Trichlorophenol	0.225 U	0.026 U	0.0195 U	0.0195 U	0.019 U	0.019 U	0.022 U	0.0195 U	0.019 U	0.0195 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.02 U
120-83-2	2,4-Dichlorophenol	0.105 U	0.0125 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.12 U	0.075 J	0.0105 U	0.0105 U	0.01 U	0.01 U	0.012 U	0.0105 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.075 U	0.009 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U
121-14-2	2,4-Dinitrotoluene	0.065 U	0.0075 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.225 U	0.026 U	0.0195 U	0.0195 U	0.019 U	0.019 U	0.022 U	0.0195 U	0.019 U	0.0195 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.02 U
91-58-7	2-Chloronaphthalene	0.1 U	0.012 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.115 U	0.013 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.4	0.44	0.019 J	0.0085 U	0.0008 UJ	0.0008 UJ	0.0095 U	0.008 U	0.0024 J	0.0008 UJ	0.0052	0.0054	0.0075	0.062 J	0.0085 UJ	0.075 J	0.024 J	0.023 J
95-48-7	2-Methylphenol (o-cresol)	0.075 U	0.009 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U
88-74-4	2-Nitroaniline	0.14 UJ	0.016 UJ	0.012 U	0.012 U	0.0115 U	0.0115 U	0.0135 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0125 U	0.012 U	0.0125 U
88-75-5	2-Nitrophenol	0.09 U	0.0105 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.009 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.008 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.21 UJ	0.025 UJ	0.0185 U	0.0185 U	0.018 U	0.018 U	0.021 U	0.0185 U	0.018 U	0.0185 U	0.0185 U	0.0185 U	0.0185 U	0.019 U	0.0185 U	0.019 U	0.0185 U	0.019 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.08 UJ	0.0095 UJ	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.0075 U
99-09-2	3-Nitroaniline	0.105 U	0.0125 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.06 U	0.007 U	0.005 U	0.0055 U	0.0049 U	0.00485 U	0.006 U	0.005 U	0.00495 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.0055 U	0.0055 U
101-55-3	4-Bromophenyl phenyl ether	0.065 U	0.0075 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.1 U	0.012 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.14 U	0.016 U	0.012 U	0.012 U	0.0115 U	0.0115 U	0.0135 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0125 U	0.012 U	0.0125 U
106-44-5	4-Methylphenol (m/p-cresol)	0.16 U	0.049 J	0.014 U	0.014 U	0.014 U	0.0135 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.0145 U
100-02-7	4-Nitrophenol	0.105 UJ	0.0125 UJ	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
83-32-9	Acenaphthene	0.97	0.79	0.0145 U	0.0145 U	0.00145 UJ	0.0014 UJ	0.0165 U	0.0145 UJ	0.00145 UJ	0.00145 UJ	0.0047 J	0.0053 J	0.0066 J	0.37 J	0.0145 UJ	0.03 U	0.015 U	0.015 U
208-96-8	Acenaphthylene	8.8	10	0.46	0.29	0.0092	0.0086	0.71	0.55	0.025	0.013	0.083	0.091	0.071	0.75	0.19	0.46	0.15	0.14
67-64-1	Acetone	0.002 U	0.00195 U	0.12 J	0.014 J	0.0051 J	0.016 J	0.0069 J	0.02 J	0.014 J	0.0075 J	0.0035 J	0.0044 J	0.014 J	0.0071 J	0.0082 J	0.0014 U	0.064 J	0.11 J
120-12-7	Anthracene	22	24	1	0.61	0.0088	0.022	2.1	1.1	0.053	0.03	0.24	0.28	0.22	2	0.45	0.7	0.17	0.16
7440-36-0	Antimony	0.48 J	0.81 J	0.175 UJ	1.6 J	0.175 UJ	0.17 UJ	0.195 UJ	0.17 UJ	0.165 UJ	0.175 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.93 J	0.175 U	0.18 U
7440-38-2	Arsenic	35	79	29	73	62	1	12	16	0.78	0.215 U	6.7	6.1	7.4	4.9	1.4	49	15 J	5.9 J
7440-39-3	Barium	21	30	24	87	4.5	4.4	16	13	8.7	7	9.2	9.1	9.3	10	6.7	22	9.8	9.2
71-43-2	Benzene	0.00031 U	0.000305 U	0.00021 U	0.00021 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.000235 U
56-55-3	Benzo(a)anthracene	9.8	16	1.1	0.73	0.0074	0.028	1.7	1.4	0.056	0.027	0.13	0.15	0.095	2.2	0.53	1.1	0.24	0.23
50-32-8	Benzo(a)pyrene	24	30	1.5	0.84	0.0078	0.034	2.5	1.6	0.057	0.034	0.17	0.19	0.13	3.4	0.93	0.95	0.29	0.27
205-99-2	Benzo(b)fluoranthene	33	45	3 J	1.9 J	0.02	0.084	6.3	4.6	0.14	0.074	0.34 J	0.43 J	0.26 J	7	1.5	1.7	0.48	0.46
191-24-2	Benzo(g,h,i)perylene	19	22	1.1	0.56	0.0063	0.022	1.6	1.3	0.05	0.027	0.12	0.14	0.1	1.8	0.43	0.94	0.28	0.27
207-08-9	Benzo(k)fluoranthene	20	36	1.5	0.91	0.0097	0.038	2.2	1.9	0.075	0.04	0.15	0.17	0.12	2.1	0.69	1.4	0.39	0.36
85-68-7	Benzyl butyl phthalate	0.115 U	0.013 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
92-52-4	Biphenyl	0.95 U	0.11 U	0.08 UJ	0.085 UJ	0.08 U	0.08 U	0.095 U	0.08 U	0.08 U	0.08 U	0.085 UJ	0.085 UJ	0.085 UJ	0.085 U	0.08 U	0.085 U	0.085 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.105 U	0.0125 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.095 U	0.011 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0095 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0085 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.13 UJ	0.0155 UJ	0.0115 U	0.0115 U	0.011 U	0.011 U	0.013 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.0115 U	0.012 U	0.0115 U	0.012 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.1 U	0.012 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
75-27-4	Bromodichloromethane	0.000235 U	0.000225 U	0.00016 U	0.00016 U	0.000155 U	0.000155 U	0.00018 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.000155 U	0.000165 U	0.00016 U	0.000175 U
74-83-9	Bromomethane	0.000255 UJ	0.00025 UJ	0.000175 UJ	0.000175 UJ	0.00017 UJ	0.00017 UJ	0.000195 UJ	0.00017 UJ	0.00017 UJ	0.000175 UJ	0.000175 UJ	0.000175 UJ	0.000175 UJ	0.00018 UJ	0.000175 UJ	0.00018 UJ	0.000175 UJ	0.000195 UJ
7440-43-9	Cadmium	0.175 U	0.21 U	0.15 U	0.15 U	0.15 U	0.145 U	0.165 U	0.145 U	0.14 U	0.15 U	0.15 U	0.155 U	0.155 U	0.15 U	0.15 U	0.33 J	0.15 U	0.155 U
86-74-8	Carbazole	1.2 J	1.6	0.22	0.11 J	0.0085 U	0.0085 U	0.31	0.27	0.0085 U	0.009 U	0.031 J	0.032 J	0.031 J	0.3	0.049 J	0.18 J	0.009 U	0.027 J
75-15-0	Carbon disulfide	0.0013 U	0.00125 U	0.0009 U	0.0009 U	0.00085 U	0.00085 U	0.001 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.001 U
56-23-5	Carbon tetrachloride	0.00028 U	0.000275 U	0.00019 U	0.00019 U	0.000185 U	0.000185 U	0.000215 U	0.00019 U	0.000185 U	0.00019 U	0.00019 U	0.00019 U	0.000195 U	0.000195 U	0.00019 U	0.000195 U	0.000195 U	0.000215 U
108-90-7	Chlorobenzene	0.00032 U	0.00031 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000215 U	0.000225 U	0.00022 U	0.000245 U
124-48-1	Chlorodibromomethane	0.0002 U	0.000195 U	0.000135 U	0.000135 U	0.000135 U	0.00013 U	0.000155 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.00014 U	0.00014 U	0.000135 U	0.00014 U	0.00014 U	0.000155 U
75-00-3	Chloroethane	0.00029 U	0.00028 U	0.000195 U	0.000195 U	0.00019 UJ	0.00019 UJ	0.00022 UJ	0.000195 UJ	0.000195 UJ	0.000195 UJ	0.000195 U	0.000195 U	0.0002 U	0.0002 UJ	0.000195 UJ	0.0002 U	0.0002 U	0.00022 U
67-66-3	Chloroform	0.00027 U	0.000265 U	0.000185 U	0.000185 U	0.00018 U	0.00018 U	0.00021 U	0.000185 U	0.00018 U	0.000185 U	0.000185 U	0.000185 U	0.00019 U	0.00019 U	0.000185 U	0.00019 U	0.000185 U	0.000205 U
74-87-3	Chloromethane	0.00036 U	0.00035 U	0.000245 U	0.000245 U	0.000235 U	0.000235 U	0.000275 U	0.00024 U	0.00024 U	0.00024 U	0.000245 U	0.000245 U	0.00025 U	0.00025 U	0.000245 U	0.00025 U	0.000245 U	0.000275 U
7440-47-3	Chromium	46	140	7.9	8.8	2	2.2	15	7	3.7	6	5.7	6.2	5	5.7	5.3	58	19 J	10 J
218-01-9	Chrysene	13	19	1.5	1	0.012	0.043	2.2	1.9	0.08	0.037	0.15	0.17	0.11	2.5	0.57	1.3	0.33	0.32
156-59-2	cis-1,2-Dichloroethylene	0.00021 U	0.000205 U	0.00014 U	0.00014 U	0.00014 U	0.000135 U	0.00016 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.000145 U	0.000145 U	0.000145 U	0.00014 U	0.000145 U	0.000145 U	0.00016 U
10061-01-5	cis-1,3-Dichloropropene	0.000235 U	0.000225 U	0.00016 U	0.00016 U	0.000155 U	0.000155 U	0.00018 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.000155 U	0.000165 U	0.00016 U	0.000175 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS044AA	SS044BA	SS045AA	SS045BA	SS045CA	SS045DA	SS046AA	SS046BA	SS046CA	SS046DA	SS047AA	SS047AC	SS047BA	SS047CA	SS047DA	SS048AA	SS048BA	SS048BB
	Sample Date	05-Dec-06	05-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	55	96	8.8	57	0.75 J	0.67 J	7.2	9.8	1.1	0.68 J	2.2	2.7	1.6	2.2	0.77 J	37	12 J	4.9 J
110-82-7	Cyclohexane	0.000305 U	0.000295 U	0.000205 U	0.000205 U	0.0002 U	0.0002 U	0.000235 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.00021 U	0.00021 U	0.00021 U	0.000205 U	0.000215 U	0.00021 U	0.00023 U
53-70-3	Dibenzo(a,h)anthracene	7.9	8.3	0.43 J	0.22 J	0.0022 J	0.0083	0.65	0.49	0.017	0.0096	0.046 J	0.052 J	0.037 J	0.82	0.2	0.31	0.095	0.091
132-64-9	Dibenzofuran	0.26 J	0.31	0.015 J	0.007 U	0.007 U	0.007 U	0.044 J	0.041 J	0.054 J	0.03 J	0.007 U	0.0075 U	0.0075 U	0.17 J	0.015 J	0.11 J	0.0075 U	0.0075 U
75-09-2	Dichloromethane	0.00031 U	0.000305 U	0.00021 U	0.00021 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.000235 U
84-66-2	Diethyl phthalate	0.075 U	0.009 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U
131-11-3	Dimethyl phthalate	0.065 U	0.0075 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.375 U	0.0445 U	0.0325 U	0.033 U	0.032 U	0.0315 U	0.0375 U	0.0325 U	0.0325 U	0.0325 U	0.033 U	0.0335 U	0.0335 U	0.034 U	0.0325 U	0.034 U	0.0335 U	0.034 U
117-84-0	di-n-Octyl-phthalate	0.095 U	0.011 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0095 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0085 U
100-41-4	Ethylbenzene	0.000335 U	0.000325 U	0.000225 U	0.000225 U	0.00022 U	0.00022 U	0.000255 U	0.000225 U	0.000225 U	0.000225 U	0.00023 U	0.00023 U	0.00023 U	0.000235 U	0.000225 U	0.000235 U	0.00023 U	0.000255 U
206-44-0	Fluoranthene	13	19	1.3	0.79	0.0091	0.022	1.8	1.8	0.092	0.04	0.13	0.15	0.099	2.1	0.34	1.6	0.34	0.3
86-73-7	Fluorene	1	0.89	0.032 J	0.022 J	0.0008 UJ	0.0008 UJ	0.0095 U	0.008 U	0.0008 UJ	0.0008 UJ	0.0057	0.0062	0.0059	0.52 J	0.0085 UJ	0.017 U	0.0085 U	0.0085 U
87-68-3	Hexachloro-1,3-butadiene	0.105 U	0.0125 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.055 U	0.006 U	0.00445 UJ	0.0045 UJ	0.00435 U	0.0043 U	0.0055 U	0.00445 U	0.0044 U	0.00445 U	0.0045 UJ	0.00455 UJ	0.00455 UJ	0.0046 U	0.00445 U	0.00465 U	0.00455 U	0.0046 U
77-47-4	Hexachlorocyclopentadiene	0.07 U	0.008 U	0.006 U	0.006 U	0.006 U	0.006 U	0.007 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.0065 U
67-72-1	Hexachloroethane	0.105 U	0.0125 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	27	35	1	0.56	0.006	0.022	1.7	1.3	0.051	0.027	0.12	0.14	0.1	2	0.48	1.1	0.32	0.3
98-82-8	Isopropylbenzene	0.00037 UJ	0.00036 UJ	0.00025 U	0.00025 U	0.00024 U	0.00024 U	0.00028 UJ	0.000245 U	0.000245 U	0.00025 U	0.00025 U	0.00025 U	0.000255 U	0.000255 U	0.00025 U	0.000255 U	0.000255 U	0.00028 U
7439-92-1	Lead	17	23	8.7	21	1.3	1.4	5.9	5.5	3.5	6.4	5.2	5.3	5.4	5.1	5.9	14	6.7 J	4.4 J
136777-61-2	m,p-Xylenes	0.0007 U	0.0007 U	0.00047 U	0.00047 U	0.000455 U	0.000455 U	0.00055 U	0.000465 U	0.00046 U	0.000465 U	0.00047 U	0.000475 U	0.000475 U	0.00048 U	0.000465 U	0.000485 U	0.000475 U	0.00055 U
541-73-1	m-Dichlorobenzene	0.00004 UJ	0.000039 UJ	0.000027 U	0.000027 U	2.65E-05 U	0.000026 U	3.05E-05 UJ	2.65E-05 U	2.65E-05 U	0.000027 U	0.000027 U	2.75E-05 U	2.75E-05 U	0.000028 U	0.000027 U	0.000028 U	2.75E-05 U	3.05E-05 U
7439-97-6	Mercury	1.5	1.5	0.078	0.069	0.013 J	0.0064 J	0.64	0.39	0.053	0.025	0.069 J	0.1 J	0.077	0.3 J	0.04 J	0.12	0.031 J	0.047 J
79-20-9	Methyl acetate	0.000155 U	0.00015 U	0.000105 U	0.000105 U	0.0001 U	0.0001 U	0.00012 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.00011 U	0.000105 U	0.000115 U
78-93-3	Methyl ethyl ketone	0.0009 U	0.00085 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.0006 U	0.0007 U
108-10-1	Methyl isobutyl ketone	0.0006 U	0.00055 U	0.00038 U	0.000385 U	0.00037 U	0.00037 U	0.000435 U	0.00038 U	0.00038 U	0.00038 U	0.000385 U	0.000385 U	0.00039 U	0.000395 U	0.00038 U	0.000395 U	0.00039 U	0.00043 U
591-78-6	Methyl n-butyl ketone	0.0008 U	0.0008 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00065 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00055 U	0.00065 U
108-88-3	Methylbenzene	0.000335 U	0.000325 U	0.000225 U	0.000225 U	0.00056 J	0.00088 J	0.0026 J	0.00088 J	0.00089 J	0.00081 J	0.00023 U	0.00023 U	0.00023 U	0.0012 J	0.00075 J	0.000235 U	0.00023 U	0.000255 U
108-87-2	Methylcylohexane	0.00035 U	0.00034 U	0.00024 U	0.00024 U	0.00023 U	0.00023 U	0.00027 U	0.000235 U	0.000235 U	0.000235 U	0.00024 U	0.00024 U	0.00024 U	0.000245 U	0.000235 U	0.000245 U	0.00024 U	0.00027 U
91-20-3	Naphthalene	0.62	0.87	0.025 J	0.018 J	0.004 J	0.0011 J	0.0031 U	0.00275 U	0.0091 J	0.015 J	0.00028 U	0.013	0.027	0.083 J	0.00275 UJ	0.11	0.043	0.041
98-95-3	Nitrobenzene	0.125 U	0.0145 U	0.011 U	0.011 U	0.0105 U	0.0105 U	0.0125 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.115 UJ	0.013 UJ	0.01 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.07 U	0.008 U	0.006 U	0.006 U	0.006 U	0.006 U	0.007 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.0065 U
95-47-6	o-Xylene	0.00032 U	0.00031 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000215 U	0.000225 U	0.00022 U	0.000245 U
106-47-8	p-Chloroaniline	0.16 U	0.019 U	0.014 U	0.014 U	0.014 U	0.0135 U	0.016 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.0145 U
87-86-5	Pentachlorophenol	3 J	5 J	0.28 J	0.16 J	0.0011 J	0.0025 J	0.57	1.8	0.047	0.023 J	0.49 J	0.32 J	0.2	0.6	0.094 J	0.51 J	0.11 J	0.12 J
85-01-8	Phenanthrene	2.7	2.5	0.12	0.071 J	0.00175 UJ	0.004 J	0.27	0.25 J	0.011 J	0.0058 J	0.022	0.028	0.017	1.7	0.018 UJ	0.32	0.08	0.08
108-95-2	Phenol	0.1 U	0.012 U	0.009 U	0.009 U	0.0085 U	0.0085 U	0.01 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.075 U	0.009 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U
129-00-0	Pyrene	12	21	2	1.3	0.015	0.05	3	2.3	0.11	0.054	0.18	0.2	0.14	6.4	1.3	1.6	0.37	0.33
7782-49-2	Selenium	0.5 U	0.6 U	0.435 UJ	0.435 UJ	0.435 U	0.425 U	0.48 U	0.42 U	0.405 U	0.44 U	0.44 UJ	0.45 UJ	0.445 UJ	0.44 U	0.44 U	0.465 U	0.43 U	0.445 U
7440-22-4	Silver	0.23 U	0.275 U	0.195 U	0.195 U	0.195 U	0.19 U	0.22 U	0.2 U	0.19 U	0.195 U	0.2 U	0.205 U	0.2 U	0.2 U	0.2 U	0.21 U	0.195 U	0.2 U
100-42-5	Styrene (monomer)	0.000345 U	0.000335 U	0.00023 U	0.000235 U	0.000225 U	0.000225 U	0.000265 U	0.00023 U	0.00023 U	0.00023 U	0.000235 U	0.000235 U	0.000235 U	0.00024 U	0.00023 U	0.00024 U	0.000235 U	0.00026 U
1634-04-4	tert-Butyl methyl ether	0.000255 U	0.00025 U	0.000175 U	0.000175 U	0.00017 U	0.00017 U	0.000195 U	0.00017 U	0.00017 U	0.000175 U	0.000175 U	0.000175 U	0.000175 U	0.00018 U	0.000175 U	0.00018 U	0.000175 U	0.000195 U
127-18-4	Tetrachloroethylene	0.00032 U	0.00031 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000215 U	0.000225 U	0.00022 U	0.000245 U
156-60-5	trans-1,2-Dichloroethene	0.000305 U	0.000295 U	0.000205 U	0.000205 U	0.0002 U	0.0002 U	0.000235 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.00021 U	0.00021 U	0.00021 U	0.000205 U	0.000215 U	0.00021 U	0.00023 U
10061-02-6	trans-1,2-Dichloropropene	0.00024 U	0.000235 U	0.000165 U	0.000165 U	0.00016 U	0.00016 U	0.000185 U	0.00016 U	0.00016 U	0.00016 U	0.000165 U	0.000165 U	0.000165 U	0.00017 U	0.000165 U	0.00017 U	0.000165 U	0.000185 U
75-25-2	Tribromomethane	0.00031 U	0.000305 U	0.00021 U	0.00021 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.000235 U
79-01-6	Trichloroethylene	0.00032 U	0.00031 U	0.000215 U	0.000215 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U	0.000225 U	0.000215 U	0.000225 U	0.00022 U	0.000245 U
7440-62-2	Vanadium	2.5	2.3	2.8 J	3.7 J	0.465 U	0.455 U	5.3	2.2	1.6	1.3	2.9 J	3.1 J	2.8 J	0.47 U	0.47 U	5.3	2.1	2.7
75-01-4	Vinyl chloride	0.000195 U	0.00019 U	0.00013 U	0.00013 U	0.000125 U	0.000125 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.000135 U	0.00013 U	0.000135 U	0.000135 U	0.000145 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.018	0.0292					0.001481	0.00748	0.000242	0.000367								
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.185	0.26					0.014123 J	0.0768	0.00273	0.00434								
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.00115	0.00198					0.000215	0.000421	1.71E-05	2.12E-05								
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.00046	0.000763					9.95E-05	0.000184	6.55E-06	7.91E-06								
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.000625	0.00163					0.000101	0.000485	1.72E-05	1.18E-05								
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.000211	0.000515					5.94E-05	7.77E-05	2.82E-06 J	3.29E-06 J								
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.00281	0.00522					0.000671	0.00148	4.86E-05	6.5E-05								
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	0.000108	0.000178					3.12E-06 J	6.39E-05	6.1E-08 U	1.38E-07 U								
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000936	0.00267					0.000292	0.000523	4.81E-05	3.58E-05								
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	2.77E-05 J	5.89E-05 J					1.12E-05	0.00371 U	3.97E-07 J	9.69E-07 J								
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.000127	0.000445					3.54E-05	8.34E-05	3.21E-06 J	2.24E-06 J								
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	0.000401	0.000965					4.17E-05	0.000174	9.02E-06	8.06E-06 J								
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	8.04E-05	0.000154					3.68E-06 U	4.05E-05 J	2.33E-07 U	3.9E-07 J								
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	5.07E-06 J	1.45E-05 J					7.62E-07 J	1.69E-06 U	2.33E-07 U	2.55E-08 U								
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00535 U	3.44E-05					4.01E-07 U	7.12E-06 J	2.8E-08 U	8.85E-08 U								
39001-02-0	Octachlorodibenzofuran	0.1	0.148					0.009635 J	0.04	0.001596	0.002672								
3268-87-9	Octachlorodibenzo-p-dioxin	2.09	2.74					0.1363 J	0.779	0.02513	0.03637								

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS048CA	SS048DA	SS049AA	SS049BA	SS049CA	SS049DA	SS050AA	SS050BA	SS051AA	SS051BA	SS052AA	SS052BA	SS052CA	SS052DA	SS054AA	SS054AB	SS054BA	SS057AA
	Sample Date	06-Dec-06	06-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06	06-Dec-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.00007 U	0.00008 U	0.00007 U	0.000065 U	0.000065 U	0.00009 U	0.000075 U	0.000075 U	0.00007 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.000145 U	0.000145 U	0.0001 U	0.00007 U
79-34-5	1,1,2,2-Tetrachloroethane	3.55E-05 U	0.000036 U	4.15E-05 U	0.000037 U	3.45E-05 U	3.45E-05 U	0.000048 U	4.05E-05 U	0.000041 U	0.000037 U	3.65E-05 U	3.45E-05 U	0.000035 U	3.55E-05 U	0.00008 U	0.00008 U	0.000055 U	3.75E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.000075 U	0.000085 U	0.000075 U	0.00007 U	0.00007 U	0.000095 U	0.00008 U	0.000085 U	0.000075 U	0.000075 U	0.00007 U	0.00007 U	0.00007 U	0.000155 U	0.000155 U	0.000105 U	0.000075 U
75-34-3	1,1-Dichloroethane	0.000034 U	3.45E-05 U	3.95E-05 U	3.55E-05 U	0.000033 U	0.000033 U	0.000046 U	3.85E-05 U	0.000039 U	3.55E-05 U	0.000035 U	0.000033 U	3.35E-05 U	0.000034 U	0.000075 U	0.000075 U	0.000055 U	3.55E-05 U
75-35-4	1,1-Dichloroethylene	0.000095 U	0.000095 U	0.00011 U	0.0001 U	0.00009 U	0.00009 U	0.000125 U	0.000105 U	0.000105 U	0.0001 U	0.000095 U	0.00009 U	0.00009 U	0.000095 U	0.000205 U	0.000205 U	0.00014 U	0.0001 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.000085 U	0.000095 U	0.000085 U	0.00008 U	0.00008 U	0.00011 U	0.000095 U	0.000095 U	0.000085 UJ	0.000085 U	0.00008 U	0.00008 U	0.00008 U	0.00018 UJ	0.00018 UJ	0.000125 UJ	0.000085 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.000265 U	0.00027 U	0.00031 U	0.000275 U	0.000255 U	0.000255 U	0.00036 U	0.0003 U	0.000305 U	0.000275 UJ	0.000275 U	0.00026 U	0.00026 U	0.000265 U	0.0006 UJ	0.0006 UJ	0.000395 UJ	0.00028 UJ
106-93-4	1,2-Dibromoethane	0.00003 U	3.05E-05 U	3.55E-05 U	3.15E-05 U	2.95E-05 U	0.000029 U	0.000041 U	3.45E-05 U	0.000035 U	3.15E-05 U	0.000031 U	2.95E-05 U	0.00003 U	0.00003 U	0.00007 U	0.00007 U	4.55E-05 U	0.000032 U
95-50-1	1,2-Dichlorobenzene	0.000042 U	4.25E-05 U	0.000049 U	0.000044 U	0.000041 U	4.05E-05 U	0.00006 U	4.75E-05 U	4.85E-05 U	0.000044 UJ	4.35E-05 U	0.000041 U	4.15E-05 U	0.000042 U	0.000095 UJ	0.000095 UJ	0.000065 UJ	0.000044 UJ
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000065 U	0.00006 U	0.000055 U	0.000055 U	0.000075 U	0.000065 U	0.000065 U	0.00006 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.00012 U	0.00012 U	0.000085 U	0.00006 U
78-87-5	1,2-Dichloropropane	0.000029 U	2.95E-05 U	0.000034 U	3.05E-05 U	2.85E-05 U	0.000028 U	3.95E-05 U	0.000033 U	3.35E-05 U	3.05E-05 U	0.00003 U	2.85E-05 U	2.85E-05 U	0.000029 U	0.000065 U	0.000065 U	4.35E-05 U	3.05E-05 U
106-46-7	1,4-Dichlorobenzene	4.65E-05 U	4.75E-05 U	0.000055 U	0.000049 U	4.55E-05 U	0.000045 U	0.000065 U	0.000055 U	0.000055 U	0.000049 UJ	4.85E-05 U	4.55E-05 U	0.000046 U	4.65E-05 U	0.000105 UJ	0.000105 UJ	0.00007 UJ	0.000049 UJ
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0085 U	0.0075 U	0.008 U	0.0075 U	0.007 U	0.007 UJ	0.007 U	0.007 U	0.0085 U	0.0085 U	0.0075 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.0195 U	0.02 U	0.02 U	0.0205 U	0.02 U	0.02 U	0.0235 U	0.02 U	0.021 U	0.0205 U	0.019 U	0.019 UJ	0.019 U	0.019 U	0.0235 U	0.0235 U	0.0205 U	0.0195 U
120-83-2	2,4-Dichlorophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.011 U	0.011 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.0105 U	0.0105 U	0.011 U	0.011 U	0.0105 U	0.0105 U	0.0125 U	0.0105 U	0.011 U	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0125 U	0.0125 U	0.011 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.008 U	0.008 U	0.007 UJ	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 UJ	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.0195 U	0.02 U	0.02 U	0.0205 U	0.02 U	0.02 U	0.0235 U	0.02 U	0.021 U	0.0205 U	0.019 U	0.019 UJ	0.019 U	0.019 U	0.0235 U	0.0235 U	0.0205 U	0.0195 U
91-58-7	2-Chloronaphthalene	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.0085 UJ	0.0085 U	0.0085 U	0.0105 U	0.0105 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.012 U	0.01 U	0.0105 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.012 U	0.012 U	0.0105 U	0.01 U
91-57-6	2-Methylnaphthalene	0.0054	0.0039	0.039	0.036 J	0.008 U	0.015 J	0.04 J	0.019 J	0.037 J	0.042	0.036 J	0.11 J	0.008 UJ	0.0042 J	0.38	0.41	0.34 J	0.018 J
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.008 U	0.008 U	0.007 U	0.0065 U
88-74-4	2-Nitroaniline	0.012 U	0.012 U	0.0125 U	0.0125 U	0.012 U	0.0125 U	0.0145 UJ	0.0125 UJ	0.013 UJ	0.0125 UJ	0.0115 U	0.0115 UJ	0.012 U	0.012 U	0.0145 UJ	0.0145 UJ	0.0125 UJ	0.012 U
88-75-5	2-Nitrophenol	0.0075 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.009 U	0.0095 U	0.008 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.0185 U	0.0185 U	0.019 U	0.0195 U	0.0185 U	0.019 U	0.022 U	0.019 U	0.02 U	0.0195 U	0.018 U	0.018 U	0.018 U	0.018 U	0.022 U	0.022 U	0.019 U	0.0185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0085 UJ	0.0075 UJ	0.008 UJ	0.0075 UJ	0.007 U	0.007 U	0.007 U	0.007 U	0.0085 UJ	0.0085 UJ	0.0075 U	0.007 U
99-09-2	3-Nitroaniline	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.009 U	0.009 UJ	0.009 U	0.009 U	0.011 U	0.011 U	0.0095 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.005 U	0.0055 U	0.0055 UJ	0.0055 UJ	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.00485 UJ	0.00485 U	0.00495 U	0.00495 U	0.0065 U	0.0065 U	0.0055 U	0.005 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 UJ	0.006 UJ	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.006 U	0.0055 U	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0105 U	0.0105 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 U	0.012 U	0.0125 U	0.0125 U	0.012 U	0.0125 U	0.0145 U	0.0125 U	0.013 U	0.0125 U	0.0115 U	0.0115 UJ	0.012 U	0.012 U	0.0145 U	0.0145 U	0.0125 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.0145 U	0.0145 U	0.015 U	0.0145 U	0.0145 U	0.017 U	0.0145 U	0.0155 U	0.015 U	0.0135 U	0.0135 U	0.014 U	0.014 U	0.017 U	0.017 U	0.0145 U	0.014 U
100-02-7	4-Nitrophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 UJ	0.0095 UJ	0.01 UJ	0.01 UJ	0.009 U	0.009 UJ	0.009 U	0.009 U	0.011 UJ	0.011 UJ	0.0095 UJ	0.0095 U
83-32-9	Acenaphthene	0.0041 J	0.0031 J	0.015 U	0.0155 U	0.0145 U	0.026 J	0.0175 UJ	0.015 UJ	0.05 J	0.06 J	0.08	0.41 J	0.0145 UJ	0.0061 J	0.073 J	0.075 J	0.0155 U	0.0145 U
208-96-8	Acenaphthylene	0.011	0.0068 J	0.21	0.38	0.44	0.024	0.4 J	0.35 J	0.83	1.2	1.2	1.1	0.2	0.084	0.71	0.74	0.72 J	0.029 J
67-64-1	Acetone	0.15	0.0014 U	0.0016 U	0.0014 U	0.039 J	0.0058 J	0.00185 U	0.00155 U	0.00155 U	0.0014 U	0.0014 U	0.00135 U	0.01 J	0.018 J	0.075 J	0.032 J	0.044 J	0.00145 U
120-12-7	Anthracene	0.02	0.000335 U	0.39	0.79	0.93	0.081	0.6 J	0.63	1.5	2.3	2.2	4.5	0.55	0.19	1.2	1.3	1.3 J	0.051
7440-36-0	Antimony	0.18 U	0.18 U	0.54 J	0.9 J	0.17 UJ	0.17 UJ	2.7 J	0.96 J	0.5 J	0.69 J	0.6 J	0.17 UJ	0.175 UJ	0.17 UJ	1.7	2	1.5	0.17 U
7440-38-2	Arsenic	0.215 U	0.22 U	40	49	22 J	1.7 J	200 J	90 J	57 J	63 J	97	25	19	11	26 J	23	20	17
7440-39-3	Barium	13	7.1	11	13	12 J	6.5 J	24	17	19	19	16	12	13	12	85	76	120	62
71-43-2	Benzene	0.00021 U	0.000215 U	0.000245 U	0.00022 U	0.000205 U	0.000205 U	0.000285 U	0.00024 U	0.000245 U	0.00022 U	0.00022 U	0.000205 U	0.00021 U	0.00021 U	0.00046 U	0.000465 U	0.000315 U	0.00022 U
56-55-3	Benzo(a)anthracene	0.02	0.014	0.41	0.66	1.3	0.061	1.6 J	0.75 J	1.2	4.8	2.2	1.9	0.47	0.18	1.5	1.5	1.6 J	0.085
50-32-8	Benzo(a)pyrene	0.023	0.013	0.46	0.92	1.6	0.05	1.1 J	0.78 J	1.6	4.8	2.1	1.8	0.48	0.2	1.7	1.7	1.7 J	0.11
205-99-2	Benzo(b)fluoranthene	0.044	0.028	1.2	1.8	2.8 J	0.098 J	1.8 J	1.3 J	2.8	7.7	9.1 J	7.4 J	1.2	0.53	2.9	3.2	2.8 J	0.16
191-24-2	Benzo(g,h,i)perylene	0.029	0.017	0.44	0.9	1.6	0.048	0.83 J	0.74 J	1.9	4.2	2	2.2	0.53	0.24	1.5	1.4	1.3 J	0.1
207-08-9	Benzo(k)fluoranthene	0.041	0.023	0.57	0.86	1.6	0.053	1.7 J	1.1 J	2.2	7.4	4.6	3.9	0.57	0.27	2.2	2.1	1.8 J	0.14
85-68-7	Benzyl butyl phthalate	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.012 U	0.01 U	0.0105 U	0.0105 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.061 J	0.012 U	0.028 J	0.01 U
92-52-4	Biphenyl	0.08 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.1 U	0.085 U	0.09 U	0.085 U	0.08 U	0.08 UJ	0.08 U	0.08 U	0.1 U	0.1 U	0.085 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.011 U	0.011 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.0085 U	0.0085 UJ	0.0085 UJ	0.0085 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.0085 U	0.008 UJ	0.008 UJ	0.008 U	0.008 U	1.3	0.01 U	0.0085 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 U	0.0115 U	0.012 U	0.012 U	0.0115 U	0.012 U	0.0135 UJ	0.012 UJ	0.0125 UJ	0.012 UJ	0.011 U	0.011 U	0.0115 U	0.0115 U	0.0135 UJ	0.014 UJ	0.012 UJ	0.0115 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.027 J	0.78	0.027 J	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.11 J	0.12 J	0.009 U	0.009 U
75-27-4	Bromodichloromethane	0.000155 U	0.00016 U	0.000185 U	0.000165 U	0.000155 U	0.00015 U	0.000215 U	0.00018 U	0.00018 U	0.000165 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000345 U	0.000345 U	0.000235 U	0.000165 U
74-83-9	Bromomethane	0.000175 UJ	0.000175 UJ	0.000205 U	0.00018 U	0.00017 UJ	0.00017 UJ	0.000235 U	0.000195 U	0.0002 U	0.00018 U	0.00018 U	0.00017 U	0.00017 UJ	0.000175 UJ	0.00038 U	0.000385 U	0.00026 U	0.000185 UJ
7440-43-9	Cadmium	0.155 U	0.155 U	0.155 U	0.41 J	0.145 U	0.145 U	0.185 U	0.155 U	0.165 U	0.16 U	0.145 U	0.145 U	0.15 U	0.145 U	0.54 J	0.47 J	0.155 U	0.145 U
86-74-8	Carbazole	0.009 U	0.009 U	0.082 J	0.12 J	0.14 J	0.025 J	0.14 J	0.21	0.26	0.34	0.81 J	0.69	0.13 J	0.063 J	0.3	0.35	0.32	0.009 U
75-15-0	Carbon disulfide	0.0009 U	0.0009 U	0.00105 U	0.0009 U	0.00085 U	0.00085 U	0.0012 U	0.001 U	0.001 U	0.0009 U	0.0009 U	0.00085 U	0.00085 U	0.0009 U	0.0019 U	0.00195 U	0.0013 U	0.00095 U
56-23-5	Carbon tetrachloride	0.00019 U	0.000195 U	0.00022 U	0.0002 U	0.000185 U	0.000185 U	0.000255 U	0.000215 U	0.00022 U	0.0002 U	0.000195 U	0.000185 U	0.000185 U	0.00019 U	0.000415 U	0.00042 U	0.000285 U	0.0002 U
108-90-7	Chlorobenzene	0.000215 U	0.00022 U	0.000255 U	0.000225 U	0.00021 U	0.00021 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000225 U	0.00021 U	0.000215 U	0.000215 U	0.000475 U	0.00048 U	0.000325 U	0.00023 U
124-48-1	Chlorodibromomethane	0.000135 U	0.00014 U	0.00016 U	0.00014 U	0.000135 U	0.00013 U	0.000185 U	0.000155 U	0.000155 U	0.00014 U	0.00014 U	0.000135 U	0.000135 U	0.000135 U	0.000295 U	0.0003 U	0.000205 U	0.000145 U
75-00-3	Chloroethane	0.000195 U	0.0002 U	0.00023 U	0.000205 U	0.00019 U	0.00019 U	0.000265 U	0.00022 U	0.000225 U	0.000205 U	0.0002 U	0.00019 U	0.00019 UJ	0.000195 UJ	0.000425 U	0.00043 U	0.00029 U	0.000205 U
67-66-3	Chloroform	0.000185 U	0.000185 U	0.000215 U	0.000195 U	0.00018 U	0.00018 U	0.00025 U	0.00021 U	0.00021 U	0.000195 U	0.00019 U	0.00018 U	0.00018 U	0.000185 U	0.000405 U	0.000405 U	0.000275 U	0.000195 U
74-87-3	Chloromethane	0.00024 U	0.000245 U	0.000285 U	0.000255 U	0.000235 U	0.000235 U	0.00033 U	0.000275 U	0.00028 U	0.000255 U	0.00025 U	0.000235 U	0.00024 U	0.00024 U	0.00055 U	0.00055 U	0.000365 U	0.000255 U
7440-47-3	Chromium	7.1	9.8	68 J	87 J	10	3.8	320 J	120 J	80 J	77 J	190 J	40 J	5.6	6.2	43 J	40	26	31
218-01-9	Chrysene	0.041	0.019	0.65	0.89	1.7	0.067	2 J	1.1 J	1.6	8.1	5.7	4.4	0.75	0.32	2.3	2.4	2.3 J	0.14
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.000145 U	0.000165 U	0.00015 U	0.00014 U	0.000135 U	0.00019 U	0.00016 U	0.000165 U	0.00015 U	0.000145 U	0.00014 U	0.00014 U	0.00014 U	0.00031 U	0.00031 U	0.00021 U	0.00015 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.00016 U	0.000185 U	0.000165 U	0.000155 U	0.00015 U	0.000215 U	0.00018 U	0.00018 U	0.000165 U	0.000165 U	0.000155 U	0.000155 U	0.000155 U	0.000345 U	0.000345 U	0.000235 U	0.000165 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS048CA	SS048DA	SS049AA	SS049BA	SS049CA	SS049DA	SS050AA	SS050BA	SS051AA	SS051BA	SS052AA	SS052BA	SS052CA	SS052DA	SS054AA	SS054AB	SS054BA	SS057AA
	Sample Date	06-Dec-06	06-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	04-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	01-Dec-06	01-Dec-06	01-Dec-06	06-Dec-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0-0.25	0.25-0.5	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.78 J	0.42 J	33	39	4.2 J	0.74 J	140	60	510	60	110	26	3.2	3.1	54	49	51	11
110-82-7	Cyclohexane	0.000205 U	0.00021 U	0.00024 U	0.000215 U	0.0002 U	0.0002 U	0.00028 U	0.000235 U	0.000235 U	0.000215 U	0.000215 U	0.0002 U	0.000205 U	0.000205 U	0.00045 U	0.000455 U	0.00031 U	0.000215 U
53-70-3	Dibenzo(a,h)anthracene	0.0081	0.0047	0.13	0.27	0.53	0.015	0.29 J	0.24 J	0.56	1	0.58	0.56 J	0.15	0.063	0.49	0.55	0.54 J	0.026 J
132-64-9	Dibenzofuran	0.007 U	0.0075 U	0.034 J	0.035 J	0.043 J	0.075 J	0.047 J	0.034 J	0.05 J	0.045 J	0.082 J	0.087 J	0.13 J	0.15 J	0.22	0.25	0.23	0.007 U
75-09-2	Dichloromethane	0.00021 U	0.000215 U	0.000245 U	0.00022 U	0.000205 U	0.000205 U	0.000285 U	0.00024 U	0.000245 U	0.00022 U	0.00022 U	0.000205 U	0.00021 U	0.00021 U	0.00046 U	0.000465 U	0.000315 U	0.00022 U
84-66-2	Diethyl phthalate	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.008 U	0.008 U	0.007 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 UJ	0.0055 U	0.0055 U	0.0065 U	0.0065 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.0325 U	0.0335 U	0.034 UJ	0.0345 UJ	0.0335 U	0.034 U	0.0395 U	0.034 U	0.0355 U	0.0345 U	0.0315 UJ	0.0315 U	0.0325 U	0.0325 U	0.0395 U	0.0395 U	0.034 U	0.0325 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.01 U	0.0085 U	0.009 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.01 U	0.01 U	0.0085 U	0.008 U
100-41-4	Ethylbenzene	0.000225 U	0.00023 U	0.000265 U	0.000235 U	0.00022 U	0.00022 U	0.00031 U	0.00026 U	0.00026 U	0.00024 U	0.000235 U	0.00022 U	0.000225 U	0.000225 U	0.000495 U	0.0005 U	0.00034 U	0.00024 U
206-44-0	Fluoranthene	0.032	0.023	0.79	0.87	1.6	0.16	2.6	1.2	1.8	10	6.4	3.9	1.1	0.36	2.9	3	2.4 J	0.19
86-73-7	Fluorene	0.0019 J	0.00085 U	0.0085 U	0.024 J	0.008 U	0.031 J	0.01 UJ	0.0085 UJ	0.044	0.065	0.062	0.16	0.008 UJ	0.0076 J	0.045 J	0.051 J	0.053 J	0.008 U
87-68-3	Hexachloro-1,3-butadiene	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.011 U	0.011 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.00445 U	0.00455 U	0.00465 UJ	0.0047 UJ	0.00455 U	0.0046 U	0.0055 U	0.0046 U	0.0048 U	0.00465 U	0.0043 UJ	0.0043 U	0.0044 U	0.0044 U	0.0055 U	0.0055 U	0.00465 U	0.00445 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.0065 UJ	0.0065 UJ	0.006 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.006 UJ	0.006 UJ	0.006 U	0.006 U	0.0075 U	0.0075 U	0.0065 UJ	0.006 U
67-72-1	Hexachloroethane	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.01 U	0.01 U	0.009 U	0.009 U	0.009 U	0.009 U	0.011 U	0.011 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.031	0.018	0.43	0.82	1.5	0.044	0.98 J	0.83 J	1.9	4.5	2.1	2.1	0.45	0.19	1.9	1.8	1.7 J	0.11
98-82-8	Isopropylbenzene	0.000245 U	0.00025 U	0.00029 U	0.00026 U	0.00024 U	0.00024 U	0.000335 U	0.00028 U	0.000285 U	0.00026 UJ	0.000255 U	0.00024 U	0.000245 U	0.000245 U	0.00055 UJ	0.00055 UJ	0.00037 UJ	0.00026 UJ
7439-92-1	Lead	3.6	5.5	6.7	11	11 J	2.1 J	22	20	19	26	17	14	7.5	7.1	150	140	160	800
136777-61-2	m,p-Xylenes	0.000465 U	0.000475 U	0.00055 U	0.00049 U	0.000455 U	0.00045 U	0.00065 U	0.00055 U	0.00055 U	0.00049 U	0.000485 U	0.000455 U	0.00046 U	0.000465 U	0.00105 U	0.00105 U	0.0007 U	0.00049 U
541-73-1	m-Dichlorobenzene	0.000027 U	2.75E-05 U	3.15E-05 U	0.000028 U	2.65E-05 U	0.000026 U	3.65E-05 U	3.05E-05 U	0.000031 U	0.000028 UJ	0.000028 U	2.65E-05 U	2.65E-05 U	0.000027 U	0.00006 UJ	0.00006 UJ	4.05E-05 UJ	2.85E-05 UJ
7439-97-6	Mercury	0.016 J	0.035	0.056	0.093	0.059	0.0071 J	0.51	0.23	0.25	0.2	0.2	0.19	0.041 J	0.044 J	0.32	0.33	0.27	0.083
79-20-9	Methyl acetate	0.000105 U	0.000105 U	0.00012 U	0.00011 U	0.0001 U	0.0001 U	0.00014 U	0.00012 U	0.00012 U	0.00011 U	0.00011 U	0.0001 U	0.000105 U	0.000105 U	0.000225 U	0.00023 U	0.000155 U	0.00011 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0007 U	0.00065 U	0.0006 U	0.0006 U	0.0008 U	0.0007 U	0.0007 U	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.0013 U	0.00135 U	0.0009 U	0.00065 U
108-10-1	Methyl isobutyl ketone	0.00038 U	0.00039 U	0.000445 U	0.0004 U	0.00037 U	0.00037 U	0.00055 U	0.000435 U	0.00044 U	0.0004 U	0.000395 U	0.00037 U	0.000375 U	0.00038 U	0.00085 U	0.00085 U	0.0006 U	0.0004 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00065 U	0.0006 U	0.00055 U	0.00055 U	0.00075 U	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.0012 U	0.0012 U	0.00085 U	0.0006 U
108-88-3	Methylbenzene	0.000225 U	0.00023 U	0.000265 U	0.000235 U	0.00022 U	0.00022 U	0.00031 U	0.00026 U	0.00026 U	0.00024 U	0.000235 U	0.00022 U	0.00089 J	0.0014 J	0.000495 U	0.0005 U	0.00034 U	0.00024 U
108-87-2	Methylcylohexane	0.000235 U	0.00024 U	0.00028 U	0.00025 U	0.00023 U	0.00023 U	0.00032 U	0.00027 U	0.000275 U	0.00025 U	0.000245 U	0.00023 U	0.000235 U	0.000235 U	0.00055 U	0.00055 U	0.000355 U	0.00025 U
91-20-3	Naphthalene	0.011	0.00028 U	0.048	0.05	0.0027 U	0.021 J	0.052 J	0.025 J	0.055	0.058	0.047	0.065	0.0098 J	0.0053 J	0.57	0.61	0.55 J	0.022 J
98-95-3	Nitrobenzene	0.011 U	0.011 U	0.0115 U	0.0115 U	0.011 U	0.011 U	0.013 U	0.011 U	0.012 U	0.0115 U	0.0105 U	0.0105 U	0.011 U	0.011 U	0.013 U	0.013 U	0.0115 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.01 U	0.01 U	0.01 U	0.0105 U	0.01 U	0.01 U	0.012 UJ	0.01 UJ	0.0105 UJ	0.0105 UJ	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.012 UJ	0.012 UJ	0.0105 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.0065 UJ	0.0065 UJ	0.006 U	0.0065 U	0.0075 U	0.0065 U	0.0065 U	0.0065 U	0.006 UJ	0.006 U	0.006 U	0.006 U	0.0075 U	0.0075 U	0.0065 U	0.006 U
95-47-6	o-Xylene	0.000215 U	0.00022 U	0.000255 U	0.000225 U	0.00021 U	0.00021 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000225 U	0.00021 U	0.000215 U	0.000215 U	0.000475 U	0.00048 U	0.000325 U	0.00023 U
106-47-8	p-Chloroaniline	0.014 U	0.0145 U	0.0145 U	0.015 U	0.0145 U	0.0145 U	0.017 U	0.0145 U	0.0155 U	0.015 U	0.0135 U	0.0135 U	0.014 U	0.014 U	0.017 U	0.017 U	0.0145 U	0.014 U
87-86-5	Pentachlorophenol	0.018 J	0.013 J	0.15 J	0.22 J	0.13 J	0.0056 J	0.34 J	0.32 J	1.3	1.4	1.2 J	1.3 J	0.11 J	0.048 J	0.32 J	0.33 J	0.096 J	0.13 J
85-01-8	Phenanthrene	0.0095	0.0065 J	0.15	0.17	0.35	0.086 J	0.21 J	0.12	0.3	0.84	0.64	0.42	0.088 J	0.049 J	1.2	1.2	1.1 J	0.063 J
108-95-2	Phenol	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0105 U	0.0105 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.008 U	0.069 J	0.007 U	0.0065 U
129-00-0	Pyrene	0.032	0.023	0.82	1.1	2	0.13	2.7 J	1.3 J	1.9	10	7	4.4	1.1	0.39	2.4	2.5	2.2 J	0.17
7782-49-2	Selenium	0.445 U	0.45 U	0.45 U	0.465 U	0.42 U	0.42 U	0.55 U	0.45 U	0.475 U	0.465 U	0.415 U	0.425 U	0.44 U	0.415 U	0.55 U	1.2 J	1 J	0.425 UJ
7440-22-4	Silver	0.2 U	0.205 U	0.2 UJ	0.21 UJ	0.19 U	0.19 U	0.245 U	0.205 U	0.215 U	0.21 U	0.19 UJ	0.19 UJ	0.2 U	0.19 U	0.24 U	0.24 U	0.2 U	0.195 U
100-42-5	Styrene (monomer)	0.00023 U	0.000235 U	0.00027 U	0.000245 U	0.000225 U	0.000225 U	0.000315 U	0.000265 U	0.000265 U	0.000245 U	0.00024 U	0.000225 U	0.00023 U	0.00023 U	0.00055 U	0.00055 U	0.00035 U	0.000245 U
1634-04-4	tert-Butyl methyl ether	0.000175 U	0.000175 U	0.000205 U	0.00018 U	0.00017 U	0.00017 U	0.000235 U	0.000195 U	0.0002 U	0.00018 U	0.00018 U	0.00017 U	0.00017 U	0.000175 U	0.00038 U	0.000385 U	0.00026 U	0.000185 U
127-18-4	Tetrachloroethylene	0.000215 U	0.00022 U	0.000255 U	0.000225 U	0.00021 U	0.00021 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000225 U	0.00021 U	0.000215 U	0.000215 U	0.000475 U	0.00048 U	0.000325 U	0.00023 U
156-60-5	trans-1,2-Dichloroethene	0.000205 U	0.00021 U	0.00024 U	0.000215 U	0.0002 U	0.0002 U	0.00028 U	0.000235 U	0.000235 U	0.000215 U	0.000215 U	0.0002 U	0.000205 U	0.000205 U	0.00045 U	0.000455 U	0.00031 U	0.000215 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.000165 U	0.00019 U	0.00017 U	0.00016 U	0.000155 U	0.00022 U	0.000185 U	0.000185 U	0.00017 U	0.00017 U	0.00016 U	0.00016 U	0.00016 U	0.000355 U	0.00036 U	0.000245 U	0.00017 U
75-25-2	Tribromomethane	0.00021 U	0.000215 U	0.000245 U	0.00022 U	0.000205 U	0.000205 U	0.000285 U	0.00024 U	0.000245 U	0.00022 U	0.00022 U	0.000205 U	0.00021 U	0.00021 U	0.00046 U	0.000465 U	0.000315 U	0.00022 U
79-01-6	Trichloroethylene	0.000215 U	0.00022 U	0.000255 U	0.000225 U	0.00021 U	0.00021 U	0.000295 U	0.000245 U	0.00025 U	0.000225 U	0.000225 U	0.00021 U	0.000215 U	0.000215 U	0.000475 U	0.00048 U	0.000325 U	0.00023 U
7440-62-2	Vanadium	4.7	4.5	5	6.9	2.7 J	2.6 J	2.8	2.8	2.5	3.2	0.445 U	1.1	0.47 U	0.445 U	12	11 J	18 J	7
75-01-4	Vinyl chloride	0.00013 U	0.000135 U	0.000155 U	0.000135 U	0.000125 U	0.000125 U	0.000175 U	0.00015 U	0.00015 U	0.000135 U	0.000135 U	0.000125 U	0.00013 U	0.00013 U	0.000285 U	0.00029 U	0.000195 U	0.00014 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran																		0.000315
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin																		0.002255 J
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran																		1.61E-05
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran																		7.03E-06
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin																		1.43E-05
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran																		5.12E-06 J
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin																		5.54E-05
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran																		1.78E-07 J
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin																		4.23E-05
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran																		5.46E-07 J
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin																		5.16E-06 J
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran																		5.11E-06 J
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran																		7.55E-07 J
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran																		2E-07 U
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin																		4.33E-07 J
39001-02-0	Octachlorodibenzofuran																		0.001285
3268-87-9	Octachlorodibenzo-p-dioxin																		0.02089 J

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS057BA	SS057CA	SS057CB	SS057DA	SS058AA	SS058BA	SS059AA	SS059BA	SS060AA	SS060BA	SS062AA	SS062BA	SS062CA	SS062CC	SS062DA	SS064AA	SS064BA	SS064CA
	Sample Date	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	05-Dec-06	05-Dec-06	29-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06
	Sample Depth (feet)	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.00008 U	0.00008 U	0.000065 U	0.000065 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	3.45E-05 U	3.45E-05 U	0.000036 U	0.000037 U	4.35E-05 U	0.000043 U	3.55E-05 U	3.55E-05 U	0.000037 U	0.000036 U	3.75E-05 U	4.05E-05 U	4.05E-05 U	3.75E-05 U	0.000035 U	0.000036 U	0.000036 U	3.45E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.00009 U	0.000085 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U	0.00008 U	0.00008 U	0.000075 U	0.00007 U	0.000075 U	0.00007 U	0.00007 U
75-34-3	1,1-Dichloroethane	0.000033 U	0.000033 U	3.45E-05 U	0.000035 U	4.15E-05 U	0.000041 U	0.000034 U	0.000034 U	3.55E-05 U	3.45E-05 U	3.55E-05 U	3.85E-05 U	3.85E-05 U	0.000036 U	3.35E-05 U	3.45E-05 U	0.000034 U	0.000033 U
75-35-4	1,1-Dichloroethylene	0.00009 U	0.00009 U	0.000095 U	0.000095 U	0.000115 U	0.000115 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.0001 U	0.000105 U	0.000105 U	0.0001 U	0.00009 U	0.000095 U	0.000095 U	0.00009 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.00008 U	0.000085 U	0.000085 U	0.0001 UJ	0.0001 UJ	0.000085 UJ	0.00008 UJ	0.000085 UJ	0.000085 UJ	0.000085 U	0.000095 U	0.000095 U	0.000085 U	0.00008 U	0.000085 U	0.000085 U	0.00008 U
96-12-8	1,2-Dibromo-3-chloropropane	0.000255 U	0.000255 U	0.000265 U	0.000275 U	0.000325 UJ	0.00032 UJ	0.000265 UJ	0.000265 UJ	0.000275 UJ	0.00027 UJ	0.00028 U	0.0003 U	0.0003 U	0.00028 U	0.00026 U	0.00027 U	0.000265 U	0.00026 U
106-93-4	1,2-Dibromoethane	2.95E-05 U	2.95E-05 U	3.05E-05 U	0.000031 U	0.000037 U	3.65E-05 U	0.00003 U	0.00003 U	3.15E-05 U	3.05E-05 U	3.15E-05 U	0.000034 U	3.45E-05 U	0.000032 U	2.95E-05 U	3.05E-05 U	3.05E-05 U	2.95E-05 U
95-50-1	1,2-Dichlorobenzene	4.05E-05 U	0.000041 U	4.25E-05 U	4.35E-05 U	0.000055 UJ	0.000055 UJ	0.000042 U	4.15E-05 UJ	0.000044 U	4.25E-05 U	0.000044 U	4.75E-05 U	0.000048 U	0.000044 U	4.15E-05 U	4.25E-05 U	0.000042 U	0.000041 U
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.00007 U	0.000065 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000065 U	0.000065 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	2.85E-05 U	2.85E-05 U	2.95E-05 U	0.00003 U	3.55E-05 U	3.55E-05 U	0.000029 U	0.000029 U	3.05E-05 U	2.95E-05 U	3.05E-05 U	0.000033 U	0.000033 U	3.05E-05 U	2.85E-05 U	2.95E-05 U	2.95E-05 U	2.85E-05 U
106-46-7	1,4-Dichlorobenzene	4.55E-05 U	4.55E-05 U	4.75E-05 U	4.85E-05 U	0.00006 UJ	0.00006 UJ	0.000047 U	4.65E-05 UJ	0.000049 U	4.75E-05 U	0.000049 U	0.000055 U	0.000055 U	4.95E-05 U	0.000046 U	4.75E-05 U	0.000047 U	4.55E-05 U
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.007 U	0.007 U	0.007 U	0.075 U	0.075 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.019 U	0.019 U	0.019 U	0.0195 U	0.205 U	0.205 U	0.0195 U	0.0195 U	0.02 U	0.02 U	0.0205 U	0.021 U	0.0195 U	0.0205 U	0.019 U	0.02 U	0.0195 U	0.019 U
120-83-2	2,4-Dichlorophenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.0095 U	0.0095 U	0.009 U
105-67-9	2,4-Dimethylphenol	0.01 U	0.01 U	0.01 U	0.0105 U	0.11 U	0.11 U	0.0105 U	0.035 J	0.0105 U	0.0105 U	0.011 U	0.011 U	0.0105 U	0.024 J	0.01 U	0.0105 U	0.0105 U	0.01 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.07 U	0.07 U	0.0065 UJ	0.0065 UJ	0.007 UJ	0.007 UJ	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.019 U	0.019 U	0.019 U	0.0195 U	0.205 U	0.205 U	0.0195 U	0.0195 U	0.02 U	0.02 U	0.0205 U	0.021 U	0.0195 U	0.0205 U	0.019 U	0.02 U	0.0195 U	0.019 U
91-58-7	2-Chloronaphthalene	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U
95-57-8	2-Chlorophenol	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.105 U	0.105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.01 U	0.01 U	0.0095 U
91-57-6	2-Methylnaphthalene	0.0034 J	0.0025 J	0.002 J	0.0018 J	0.58 J	2.8	0.22	0.58	0.2	0.14 J	0.0085 U	0.009 U	0.0085 U	0.12	0.0008 U	0.066	0.033 J	0.0017 J
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.0115 U	0.0115 U	0.012 U	0.012 U	0.125 U	0.125 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.0125 U	0.013 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.0115 U
88-75-5	2-Nitrophenol	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.08 U	0.08 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.0075 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.018 U	0.018 U	0.018 U	0.0185 U	0.195 U	0.19 U	0.0185 UJ	0.0185 U	0.019 U	0.0185 U	0.0195 U	0.02 U	0.0185 U	0.0195 U	0.018 U	0.0185 U	0.0185 U	0.018 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.007 U	0.007 U	0.007 U	0.075 U	0.075 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.0095 U	0.0095 U	0.009 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0049 U	0.0049 U	0.00495 U	0.005 U	0.055 U	0.055 U	0.028 J	0.005 UJ	0.0055 UJ	0.0055 UJ	0.0055 U	0.0055 U	0.005 U	0.0055 U	0.00495 U	0.0055 U	0.005 U	0.0049 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0115 U	0.0115 U	0.012 U	0.012 U	0.125 U	0.125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.013 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.0115 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.014 U	0.014 U	0.014 U	0.15 U	0.145 U	0.014 U	0.029 J	0.0145 U	0.0145 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.0145 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 UJ	0.095 UJ	0.0095 U	0.0095 U	0.0095 U	0.0095 UJ	0.01 UJ	0.01 UJ	0.0095 UJ	0.01 UJ	0.009 UJ	0.0095 UJ	0.0095 UJ	0.009 U
83-32-9	Acenaphthene	0.003 J	0.00145 U	0.00145 U	0.00145 U	0.305 U	1.2 J	0.26 J	0.33 J	0.075 U	0.075 U	0.057 J	0.0155 U	0.0145 U	0.036 J	0.00145 U	0.015 U	0.0145 U	0.00145 U
208-96-8	Acenaphthylene	0.00135 U	0.0014 U	0.0014 U	0.0014 U	7	18	1.4	3.9	1	0.69	0.77	0.32	0.37	0.53	0.0014 U	0.57	0.32	0.0095
67-64-1	Acetone	0.0013 U	0.00135 U	0.0014 U	0.0014 U	0.00165 U	0.00165 U	0.00135 UJ	0.00135 UJ	0.0014 UJ	0.0014 UJ	0.11 J	0.12 J	0.00155 U	0.00145 U	0.00135 U	0.17	0.00135 U	0.00135 U
120-12-7	Anthracene	0.00032 U	0.00032 U	0.000325 U	0.000325 U	15	49	3.3	7.7	2.5	1.4	1.3	0.52	0.93	1.4	0.0042	0.84	0.49	0.014
7440-36-0	Antimony	0.165 U	0.175 U	0.17 U	0.175 U	2.7 J	1 J	2.9	3.2	1.9	1.7	1.4	0.195 UJ	0.18 UJ	0.19 UJ	0.17 UJ	0.99 J	0.39 J	0.175 UJ
7440-38-2	Arsenic	0.6	0.66 J	0.205 U	0.56	220	78	200 J	200 J	200 J	160 J	82	12	9.6	13	0.77	70	110	1.4
7440-39-3	Barium	9.8	13	16	17	32	160	15	47	15	13	48	73	20	38	11	20	17	24
71-43-2	Benzene	0.000205 U	0.000205 U	0.000215 U	0.00022 U	0.00026 U	0.000255 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.00022 U	0.00024 U	0.00024 U	0.00022 U	0.00021 U	0.000215 U	0.00021 U	0.000205 U
56-55-3	Benzo(a)anthracene	0.00026 U	0.000265 U	0.000265 U	0.00027 U	15	120	3.3	5.7	2.4	1.3	1.8	0.89	2.1	4.3	0.018	1.4	0.97	0.044
50-32-8	Benzo(a)pyrene	0.0006 U	0.0006 U	0.0006 U	0.0006 U	17	61	2.4	5.6	1.9	1.2	1.9	0.93	3.8	6.7	0.013	1.3	0.94	0.029
205-99-2	Benzo(b)fluoranthene	0.00042 U	0.00042 U	0.000425 U	0.00043 U	35	260	5.8	10	4.3	2.7	5.1	1.6	6.3	11	0.022	2.6	1.7	0.059
191-24-2	Benzo(g,h,i)perylene	0.00034 U	0.00034 U	0.000345 U	0.00035 U	16	63	2.4	5.8	1.9	1.3	1.4	0.71	1.5	2	0.0091	1.2	0.73	0.033
207-08-9	Benzo(k)fluoranthene	0.00034 U	0.00034 U	0.000345 U	0.00035 U	27	190	4.6	7.4	2.9	1.9	2.2	1.4	3.5	6.3	0.02	1.9	1.3	0.054
85-68-7	Benzyl butyl phthalate	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.105 U	0.105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.01 U	0.01 U	0.0095 U
92-52-4	Biphenyl	0.08 U	0.08 U	0.08 U	0.08 U	0.85 U	0.85 U	0.085 U	0.08 U	0.085 U	0.085 U	0.085 U	0.09 U	0.08 U	0.085 U	0.08 U	0.085 U	0.08 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.0095 U	0.0095 U	0.009 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.008 U	0.008 U	0.008 U	0.085 U	0.085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.011 U	0.011 UJ	0.0115 UJ	0.0115 U	0.12 UJ	0.12 UJ	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 UJ	0.0125 UJ	0.0115 UJ	0.012 UJ	0.0115 UJ	0.0115 UJ	0.0115 UJ	0.011 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.54 J	0.09 UJ	0.11 J	0.071 J	0.072 J	0.083 J	0.009 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U
75-27-4	Bromodichloromethane	0.000155 U	0.000155 U	0.00016 U	0.000165 U	0.000195 U	0.00019 U	0.00016 U	0.000155 U	0.000165 U	0.00016 U	0.000165 U	0.00018 U	0.00018 U	0.000165 U	0.000155 U	0.00016 U	0.00016 U	0.000155 U
74-83-9	Bromomethane	0.00017 UJ	0.00017 UJ	0.000175 UJ	0.00018 UJ	0.000215 UJ	0.00021 UJ	0.000175 U	0.000175 U	0.00018 U	0.000175 U	0.00018 U	0.000195 U	0.0002 U	0.000185 U	0.00017 U	0.000175 U	0.000175 U	0.00017 U
7440-43-9	Cadmium	0.14 U	0.15 U	0.145 U	0.15 U	0.48 J	0.15 U	0.44 J	0.36 J	0.39 J	0.34 J	0.53 J	0.8	0.155 U	0.16 U	0.145 U	0.155 U	0.15 U	0.15 U
86-74-8	Carbazole	0.0085 U	0.0085 U	0.0085 U	0.009 U	2.4	4.4	0.26	0.77	0.12 J	0.098 J	0.32	0.075 J	0.47	0.93	0.0085 U	0.21	0.082 J	0.0085 U
75-15-0	Carbon disulfide	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.0011 U	0.00105 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.001 U	0.001 U	0.00095 U	0.00085 U	0.0009 U	0.0009 U	0.00085 U
56-23-5	Carbon tetrachloride	0.000185 U	0.000185 U	0.00019 U	0.000195 U	0.00023 U	0.00023 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.0002 U	0.000215 U	0.000215 U	0.0002 U	0.000185 U	0.00019 U	0.00019 U	0.000185 U
108-90-7	Chlorobenzene	0.00021 U	0.00021 U	0.00022 U	0.000225 U	0.000265 U	0.00026 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.000245 U	0.000245 U	0.00023 U	0.000215 U	0.00022 U	0.00022 U	0.00021 U
124-48-1	Chlorodibromomethane	0.00013 U	0.000135 U	0.00014 U	0.00014 U	0.000165 U	0.000165 U	0.000135 U	0.000135 U	0.00014 U	0.00014 U	0.000145 U	0.000155 U	0.000155 U	0.000145 U	0.000135 U	0.00014 U	0.000135 U	0.000135 U
75-00-3	Chloroethane	0.00019 U	0.00019 U	0.000195 U	0.0002 U	0.00024 U	0.000235 U	0.000195 U	0.000195 U	0.000205 U	0.0002 U	0.000205 U	0.00022 U	0.00022 U	0.000205 U	0.00019 U	0.000195 U	0.000195 U	0.00019 U
67-66-3	Chloroform	0.00018 U	0.00018 U	0.000185 U	0.00019 U	0.000225 U	0.000225 U	0.000185 U	0.000185 U	0.00019 U	0.000185 U	0.000195 U	0.00021 U	0.00021 U	0.000195 U	0.00018 U	0.000185 U	0.000185 U	0.00018 U
74-87-3	Chloromethane	0.000235 U	0.000235 U	0.000245 U	0.00025 U	0.0003 U	0.000295 U	0.000245 U	0.00024 U	0.000255 U	0.000245 U	0.000255 U	0.000275 U	0.000275 U	0.000255 U	0.00024 U	0.000245 U	0.000245 U	0.000235 U
7440-47-3	Chromium	5	6.3	7.2	9.4	310	89	260 J	200 J	230 J	200 J	250	60	6.5	8.2	6.6	170	190	12
218-01-9	Chrysene	0.00025 U	0.0069	0.000255 U	0.00026 U	23	200	4.9	7.2	3.2	1.8	2.5	1.3	2.8	5.5	0.021	1.9	1.2	0.057
156-59-2	cis-1,2-Dichloroethylene	0.000135 U	0.00014 U	0.000145 U	0.000145 U	0.000175 U	0.00017 U	0.00014 U	0.00014 U	0.00015 U	0.000145 U	0.00015 U	0.00016 U	0.00016 U	0.00015 U	0.00014 U	0.000145 U	0.00014 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.000155 U	0.00016 U	0.000165 U	0.000195 U	0.00019 U	0.00016 U	0.000155 U	0.000165 U	0.00016 U	0.000165 U	0.00018 U	0.00018 U	0.000165 U	0.000155 U	0.00016 U	0.00016 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS057BA	SS057CA	SS057CB	SS057DA	SS058AA	SS058BA	SS059AA	SS059BA	SS060AA	SS060BA	SS062AA	SS062BA	SS062CA	SS062CC	SS062DA	SS064AA	SS064BA	SS064CA
	Sample Date	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	05-Dec-06	05-Dec-06	29-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06
	Sample Depth (feet)	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.87 J	1.1	1.1	0.86 J	180	190	130	160	120	100	85	11	2.6	4.5	0.69 J	59	66	1.6
110-82-7	Cyclohexane	0.0002 U	0.0002 U	0.00021 U	0.000215 U	0.00025 U	0.00063 J	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.000215 U	0.000235 U	0.000235 U	0.000215 U	0.0002 U	0.00021 U	0.000205 U	0.0002 U
53-70-3	Dibenzo(a,h)anthracene	0.001 J	0.0011 J	0.0013 J	0.00057 J	5.5	26	0.87	2	0.66	0.42	0.5	0.25	0.66	0.95	0.003 J	0.4	0.27	0.01
132-64-9	Dibenzofuran	0.007 U	0.007 U	0.007 U	0.007 U	0.55 J	4	0.19	0.52	0.12 J	0.11 J	0.093 J	0.03 J	0.097 J	0.18 J	0.007 U	0.098 J	0.043 J	0.007 U
75-09-2	Dichloromethane	0.000205 U	0.000205 U	0.000215 U	0.00022 U	0.00026 U	0.000255 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.00022 U	0.00024 U	0.00024 U	0.00022 U	0.00021 U	0.000215 U	0.00021 U	0.000205 U
84-66-2	Diethyl phthalate	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.032 U	0.032 U	0.0325 U	0.0325 U	0.345 U	0.34 U	0.033 U	0.0325 U	0.0335 U	0.0335 U	0.0345 U	0.0355 U	0.0325 U	0.0345 U	0.0325 U	0.0335 U	0.0325 U	0.032 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.008 U	0.008 U	0.008 U	0.085 U	0.085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.00022 U	0.00022 U	0.00023 U	0.000235 U	0.00028 U	0.000275 U	0.000225 U	0.000225 U	0.000235 U	0.00023 U	0.00024 U	0.000255 U	0.00026 U	0.00024 U	0.000225 U	0.00023 U	0.00023 U	0.00022 U
206-44-0	Fluoranthene	0.0085	0.01	0.0081	0.000315 U	26	360	7.4	10	4.8	2.7	5.4	1.2	2.1	4.5	0.021	2.2	1.6	0.094
86-73-7	Fluorene	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.49 J	0.9	0.34	0.28	0.18 J	0.16 J	0.059	0.02 J	0.028 J	0.041	0.0008 U	0.03 J	0.017 J	0.0008 U
87-68-3	Hexachloro-1,3-butadiene	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.0095 U	0.0095 U	0.009 U
118-74-1	Hexachlorobenzene	0.00435 U	0.00435 U	0.0044 U	0.00445 U	0.047 U	0.0465 U	0.00445 U	0.00445 U	0.00455 U	0.00455 U	0.0047 U	0.0048 U	0.00445 U	0.0047 U	0.0044 U	0.00455 U	0.00445 U	0.00435 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.006 U	0.006 U	0.065 U	0.065 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 U	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.009 U	0.009 U	0.009 U	0.0095 U	0.1 U	0.095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.009 U	0.0095 U	0.0095 U	0.009 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.000455 U	0.000455 U	0.00046 U	0.000465 U	20	110	3.2	7.1	2.4	1.6	1.7	0.84	1.9	2.6	0.011	1.4	0.88	0.038
98-82-8	Isopropylbenzene	0.00024 U	0.00024 U	0.00025 U	0.000255 U	0.000305 UJ	0.0003 UJ	0.00025 U	0.000245 UJ	0.00026 U	0.00025 U	0.00026 U	0.00028 U	0.000285 U	0.00026 U	0.000245 U	0.00025 U	0.00025 U	0.000245 U
7439-92-1	Lead	13	7.2	8.4	10	130	37	14	40	12	9.2	14	9.4	9	12	3.6	7.7	8.4	5.6
136777-61-2	m,p-Xylenes	0.000455 U	0.000455 U	0.000475 U	0.000485 U	0.0006 U	0.0006 U	0.00047 U	0.000465 U	0.00049 U	0.000475 U	0.00049 U	0.00055 U	0.00055 U	0.000495 U	0.00046 U	0.000475 U	0.00047 U	0.000455 U
541-73-1	m-Dichlorobenzene	0.000026 U	2.65E-05 U	2.75E-05 U	0.000028 U	0.000033 UJ	3.25E-05 UJ	0.000027 U	0.000027 UJ	0.000028 U	2.75E-05 U	2.85E-05 U	3.05E-05 U	0.000031 U	2.85E-05 U	2.65E-05 U	2.75E-05 U	0.000027 U	2.65E-05 U
7439-97-6	Mercury	0.044	0.012 J	0.012 J	0.04	1.4	0.57	0.34	3.1	0.2	0.22	0.22 J	0.087 J	0.048 J	0.061 J	0.012 J	0.13 J	0.21 J	0.021 J
79-20-9	Methyl acetate	0.0001 U	0.0001 U	0.000105 U	0.00011 U	0.000125 U	0.000125 U	0.000105 U	0.000105 U	0.00011 U	0.000105 U	0.00011 U	0.00012 U	0.00012 U	0.00011 U	0.0001 U	0.000105 U	0.000105 U	0.0001 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.00075 U	0.00075 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.0007 U	0.0007 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00037 U	0.00037 U	0.000385 U	0.000395 U	0.00047 U	0.000465 U	0.000385 U	0.00038 U	0.0004 U	0.00039 U	0.0004 U	0.000435 U	0.000435 U	0.000405 U	0.000375 U	0.000385 U	0.000385 U	0.000375 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.0007 U	0.00065 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00065 U	0.00065 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.00022 U	0.00022 U	0.00023 U	0.000235 U	0.00028 U	0.0019 J	0.000225 U	0.000225 U	0.000235 U	0.00023 U	0.00024 U	0.000255 U	0.00026 U	0.00024 U	0.000225 U	0.00023 U	0.00023 U	0.00022 U
108-87-2	Methylcylohexane	0.00023 U	0.00023 U	0.00024 U	0.000245 U	0.00029 U	0.0014 J	0.00024 U	0.00057 J	0.00025 U	0.00024 U	0.00025 U	0.00027 U	0.00027 U	0.00025 U	0.000235 U	0.00024 U	0.00024 U	0.00023 U
91-20-3	Naphthalene	0.000265 U	0.00027 U	0.00027 U	0.000275 U	0.87	3.4	0.31	0.97	0.27	0.16 J	0.0029 U	0.00295 U	0.00275 U	0.36	0.00027 U	0.093	0.00275 U	0.00027 U
98-95-3	Nitrobenzene	0.0105 U	0.0105 U	0.011 U	0.011 U	0.115 U	0.115 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.0115 U	0.011 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.0105 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.105 U	0.105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.01 U	0.0105 U	0.0095 U	0.01 U	0.01 U	0.0095 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.006 U	0.006 U	0.065 U	0.065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.00021 U	0.00021 U	0.00022 U	0.000225 U	0.000265 U	0.00026 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.000245 U	0.000245 U	0.00023 U	0.000215 U	0.00022 U	0.00022 U	0.00021 U
106-47-8	p-Chloroaniline	0.014 U	0.014 U	0.014 U	0.014 U	0.15 U	0.145 U	0.014 U	0.014 U	0.0145 U	0.0145 U	0.015 U	0.015 U	0.014 U	0.015 U	0.014 U	0.0145 U	0.014 U	0.014 U
87-86-5	Pentachlorophenol	0.011 J	0.011 J	0.011 J	0.011 J	160 J	630 J	3.4	2.6	1 J	0.71 J	0.00395 U	0.00405 U	0.00375 U	0.00395 U	0.00037 U	0.56	0.26 J	0.044
85-01-8	Phenanthrene	0.0043 J	0.004 J	0.00175 U	0.0018 U	3.8	15	1.8	2.9	1.1	0.67	1	0.14	0.27	0.44	0.00175 U	0.36	0.26	0.01
108-95-2	Phenol	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.095 U	0.09 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U
100-01-6	p-Nitroaniline	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U
129-00-0	Pyrene	0.0071	0.0085	0.0069	0.00028 U	30	410	6.9	8.7	3.9	2.2	4.9	1.4	4	6.7	0.024	2.2	1.5	0.084
7782-49-2	Selenium	0.41 U	0.435 U	0.42 U	0.43 U	0.47 U	0.435 U	0.43 U	0.44 U	0.42 U	0.435 U	0.455 U	0.48 U	0.445 U	0.465 U	0.425 U	2.1	0.43 U	0.435 U
7440-22-4	Silver	0.185 U	0.195 U	0.19 U	0.195 U	0.215 U	0.195 U	0.195 U	0.2 U	0.19 U	0.195 U	0.205 U	0.215 U	0.2 U	0.21 U	0.195 U	0.205 U	0.195 U	0.195 U
100-42-5	Styrene (monomer)	0.000225 U	0.000225 U	0.000235 U	0.00024 U	0.000285 U	0.00028 U	0.000235 U	0.00023 U	0.00024 U	0.000235 U	0.000245 U	0.000265 U	0.000265 U	0.000245 U	0.00023 U	0.000235 U	0.000235 U	0.000225 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.00017 U	0.000175 U	0.00018 U	0.000215 U	0.00021 U	0.000175 U	0.000175 U	0.00018 U	0.000175 U	0.00018 U	0.000195 U	0.0002 U	0.000185 U	0.00017 U	0.000175 U	0.000175 U	0.00017 U
127-18-4	Tetrachloroethylene	0.00021 U	0.00021 U	0.00022 U	0.000225 U	0.000265 U	0.00026 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.000245 U	0.000245 U	0.00023 U	0.000215 U	0.00022 U	0.00022 U	0.00021 U
156-60-5	trans-1,2-Dichloroethene	0.0002 U	0.0002 U	0.00021 U	0.000215 U	0.00025 U	0.00025 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.000215 U	0.000235 U	0.000235 U	0.000215 U	0.0002 U	0.00021 U	0.000205 U	0.0002 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.0002 U	0.000195 U	0.000165 U	0.00016 U	0.00017 U	0.000165 U	0.00017 U	0.000185 U	0.000185 U	0.00017 U	0.00016 U	0.000165 U	0.000165 U	0.00016 U
75-25-2	Tribromomethane	0.000205 U	0.000205 U	0.000215 U	0.00022 U	0.00026 U	0.000255 U	0.00021 U	0.00021 U	0.00022 U	0.000215 U	0.00022 U	0.00024 U	0.00024 U	0.00022 U	0.00021 U	0.000215 U	0.00021 U	0.000205 U
79-01-6	Trichloroethylene	0.00021 U	0.00021 U	0.00022 U	0.000225 U	0.000265 U	0.00026 U	0.000215 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.000245 U	0.000245 U	0.00023 U	0.000215 U	0.00022 U	0.00022 U	0.00021 U
7440-62-2	Vanadium	3.2	3.9	4.3	3.9	1.2	17	0.46 UJ	4	0.45 UJ	0.465 UJ	3.3	34	3.4	4.6	3.8	3	2.2	1.5
75-01-4	Vinyl chloride	0.000125 U	0.000125 U	0.00013 U	0.000135 U	0.00016 U	0.00016 U	0.00013 U	0.00013 U	0.000135 U	0.000135 U	0.000135 U	0.00015 U	0.00015 U	0.00014 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	2.31E-05	3.31E-05	1.83E-05	1.46E-05	0.522 J	0.215 J					0.00426	0.001458 J	3.85E-05 J	5.2E-05 J	3.25E-06 J			
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.000138	0.000182	0.000104	0.000112 J	3.24	1.39					0.0395	0.011445 J	0.000254	0.000389 J	2.55E-05			
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.02E-06 J	1.3E-06 J	7.62E-07 J	1.09E-06 J	0.0453	0.015					0.00031	9.7E-05	2.21E-06 J	2.96E-06 J	2.74E-07 J			
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	4.75E-07 J	6.04E-07 J	3.31E-07 J	4.52E-07 J	0.0157	0.00518					0.000134	4.6E-05	1.47E-06 J	1.83E-06 J	1.81E-07 U			
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	9.05E-07 J	1.2E-06 J	6.69E-07 J	6.99E-07 J	0.0244	0.00592					0.000382	5.24E-05	1E-06 J	1.85E-06 J	4.17E-07 J			
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	4.07E-07 J	5.17E-07 J	2.89E-07 J	3.26E-07 J	0.0102 J	0.00288 J					0.00011	4.18E-05	1.83E-06 J	2.34E-06 J	2.79E-07 J			
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	3.25E-06 J	4.2E-06 J	2.48E-06 J	2.67E-06	0.105	0.0385					0.0012	0.0005	1.34E-05 J	1.96E-05 J	8.54E-07 J			
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	4E-08 U	7.6E-08 U	3.15E-08 U	6.05E-07 U	0.00425	0.00135					3.98E-05 J	8.76E-06	1.35E-07 U	2.09E-07 J	1.78E-07 J			
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.49E-06 J	3.35E-06 J	1.85E-06 J	1.34E-06	0.0495	0.0122					0.00066	0.000268	2.94E-06 J	3.04E-06 J	8.04E-07 J			
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	3.7E-08 J	1.6E-08 U	8.5E-09 U	7.05E-08 U	0.00143	0.000358					1.88E-05 J	8.51E-06	4.65E-07 J	4.83E-07 J	1.71E-07 J			
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	3.92E-07 J	4.64E-07 J	2.56E-07 J	3.05E-07 J	0.00635	0.00142					0.000132	4.3E-05	1.04E-06 J	1.28E-06 J	3.13E-07 J			
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	4.79E-07 J	5.96E-07 J	1.26E-07 U	5.91E-07 J	0.021	0.00599					0.00021	4.05E-05	1.57E-06 J	2.2E-06 J	3.82E-07 J			
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	1.8E-08 U	1.9E-08 U	1.05E-08 U	7.6E-08 U	0.0033	0.000982					4.85E-05 J	1.02E-05	3.04E-07 U	7.08E-07 J	2.66E-07 J			
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	3.05E-08 U	1.75E-08 U	2E-08 U	6.9E-08 U	0.000266	0.000064					0.00342 U	3.84E-06	1.79E-07 U	1.62E-07 U	3E-08 U			
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1.25E-08 U	1.2E-08 U	1.05E-08 U	6.85E-08 U	0.000291	7.46E-05					1.93E-05	6.27E-06	3.45E-08 U	4.2E-08 U	2.4E-08 U			
39001-02-0	Octachlorodibenzofuran	6.54E-05	8.5E-05	5.15E-05	6.23E-05	2.46	1.22					0.0182	0.005592 J	0.000185	0.000273	1.36E-05			
3268-87-9	Octachlorodibenzo-p-dioxin	0.001247	0.001694	0.000983	0.00125	31 J	14.6 J					0.391	0.09315 J	0.002568	0.003948 J	0.000267			

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS064DA	SS066AA	SS066AB	SS066BA	SS066CA	SS066DA	SS066DC	SS067AA	SS067BA	SS067BB	SS068AA	SS068BA	SS068CA	SS068DA	SS069AA	SS069BA	SS070AA	SS070AB
	Sample Date	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	30-Nov-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	12-Dec-06	12-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000075 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000075 U	0.000065 U	0.00014 U	0.000115 U
79-34-5	1,1,2,2-Tetrachloroethane	3.45E-05 U	3.45E-05 U	0.000035 U	3.45E-05 U	3.45E-05 U	0.000034 U	3.45E-05 U	0.00004 U	3.55E-05 U	0.000035 U	0.000035 U	0.000035 U	0.000035 U	0.000035 U	0.000041 U	3.55E-05 U	0.00008 U	0.000065 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00008 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000085 U	0.00007 U	0.000155 U	0.000125 U
75-34-3	1,1-Dichloroethane	0.000033 U	0.000033 U	3.35E-05 U	0.000033 U	3.25E-05 U	3.25E-05 U	0.000033 U	3.85E-05 U	3.35E-05 U	3.35E-05 U	0.000033 U	3.35E-05 U	3.35E-05 U	3.35E-05 U	0.000039 U	0.000034 U	0.000075 U	0.000065 U
75-35-4	1,1-Dichloroethylene	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.000105 U	0.000095 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00011 U	0.000095 U	0.0002 U	0.000165 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.000095 UJ	0.00008 UJ	0.00008 UJ	0.00008 U	0.00008 UJ	0.00008 U	0.00008 U	0.000095 U	0.00008 U	0.000175 UJ	0.000145 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.00026 U	0.000255 U	0.00026 U	0.000255 U	0.000255 U	0.000255 U	0.000255 U	0.0003 UJ	0.000265 UJ	0.00026 UJ	0.00026 U	0.00026 UJ	0.00026 U	0.00026 U	0.000305 U	0.000265 U	0.0006 UJ	0.00047 UJ
106-93-4	1,2-Dibromoethane	2.95E-05 U	2.95E-05 U	2.95E-05 U	2.95E-05 U	0.000029 U	0.000029 U	0.000029 U	0.000034 U	0.00003 U	2.95E-05 U	2.95E-05 U	0.00003 U	2.95E-05 U	0.00003 U	0.000035 U	0.00003 U	0.000065 U	0.000055 U
95-50-1	1,2-Dichlorobenzene	0.000041 U	4.05E-05 U	0.000041 U	4.05E-05 U	4.05E-05 U	4.05E-05 U	4.05E-05 U	4.75E-05 UJ	4.15E-05 UJ	4.15E-05 UJ	0.000041 U	4.15E-05 UJ	0.000041 U	4.15E-05 U	4.85E-05 U	0.000042 U	0.000095 UJ	0.000075 UJ
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000065 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000065 U	0.000055 U	0.00012 U	0.0001 U
78-87-5	1,2-Dichloropropane	2.85E-05 U	2.85E-05 U	2.85E-05 U	2.85E-05 U	0.000028 U	0.000028 U	0.000028 U	0.000033 U	0.000029 U	2.85E-05 U	2.85E-05 U	0.000029 U	2.85E-05 U	0.000029 U	3.35E-05 U	0.000029 U	0.000065 U	0.000055 U
106-46-7	1,4-Dichlorobenzene	4.55E-05 U	4.55E-05 U	0.000046 U	4.55E-05 U	0.000045 U	0.000045 U	0.000045 U	0.000055 UJ	4.65E-05 UJ	0.000046 UJ	0.000046 U	0.000046 UJ	0.000046 U	4.65E-05 U	0.000055 U	4.65E-05 U	0.000105 UJ	0.000085 UJ
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.045 J	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.01 U	0.0095 U
88-06-2	2,4,6-Trichlorophenol	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.0195 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.0265 U	0.025 U
120-83-2	2,4-Dichlorophenol	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
105-67-9	2,4-Dimethylphenol	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.03 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0105 U	0.014 U	0.0135 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 UJ	0.0065 U	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 UJ	0.0065 UJ	0.009 U	0.0085 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.082 J	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0075 U	0.007 U
606-20-2	2,6-Dinitrotoluene	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.0195 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.0195 U	0.0265 U	0.025 U
91-58-7	2-Chloronaphthalene	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.012 U	0.0115 U
95-57-8	2-Chlorophenol	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0135 U	0.0125 U
91-57-6	2-Methylnaphthalene	0.0029 J	0.049 J	0.072 J	0.0071	0.0032 J	0.0008 U	0.0008 U	0.29 J	0.22 J	0.13 J	0.06	0.086	0.0069 J	0.0008 U	0.026 J	0.033 J	0.11	0.105 UJ
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.009 U	0.0085 U
88-74-4	2-Nitroaniline	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 UJ	0.03 J	0.012 UJ	0.0115 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.0165 U	0.0155 U
88-75-5	2-Nitrophenol	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0105 U	0.01 U
91-94-1	3,3'-Dichlorobenzidine	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.0185 U	0.0185 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.0185 U	0.025 U	0.024 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.01 U	0.0095 U
99-09-2	3-Nitroaniline	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.037 J	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0049 U	0.0049 U	0.0049 U	0.0049 U	0.00485 U	0.00485 U	0.00485 U	0.005 UJ	0.06 J	0.00495 UJ	0.0049 U	0.00495 U	0.00495 U	0.00495 U	0.005 UJ	0.0055 UJ	0.007 U	0.007 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.053 J	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0075 U	0.007 U
59-50-7	4-Chloro-3-methylphenol	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.034 J	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.012 U	0.0115 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.035 J	0.012 U	0.0115 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0165 U	0.0155 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.014 U	0.014 U	0.014 U	0.0135 U	0.0135 U	0.0135 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0195 U	0.0185 U
100-02-7	4-Nitrophenol	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
83-32-9	Acenaphthene	0.00145 U	0.063 J	0.086 J	0.0053 J	0.0014 U	0.0014 U	0.0014 U	0.145 U	0.145 U	0.075 U	0.16	0.14	0.0031 J	0.00145 U	0.0145 UJ	0.029 U	0.095 J	0.19 UJ
208-96-8	Acenaphthylene	0.0083	0.38	0.45	0.016	0.0038 J	0.00135 U	0.00135 U	3.4	2.2 J	1.3 J	0.68	1.1	0.016	0.0073	0.37 J	0.64	2	2.1
67-64-1	Acetone	0.00135 U	0.0013 U	0.00135 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.00155 U	0.00135 U	0.00135 U	0.00135 U	0.00135 U	0.0042 J	0.0052 J	0.00155 U	0.00135 U	0.041 J	0.025 J
120-12-7	Anthracene	0.011	0.64	0.68	0.026	0.008	0.0031 J	0.0067 J	5.5	3.7 J	2.7 J	1.1	2	0.022	0.016	0.79	0.48	4.2	4.2
7440-36-0	Antimony	0.17 UJ	0.175 U	1.1	0.175 U	0.175 U	0.175 U	0.17 U	2.7	3.5 J	2.2 J	1.2 J	2.1 J	0.17 UJ	0.165 UJ	0.42 J	0.79 J	0.61 J	0.68 J
7440-38-2	Arsenic	0.75	81 J	95 J	54 J	9.3 J	0.68 J	0.83 J	230 J	220 J	120 J	160	190	31 J	0.77 J	26 J	14 J	48	53
7440-39-3	Barium	4.3	13 J	19 J	9.2	6.8	2.4 J	3.3 J	31	25	19	16	20	8.8 J	6.8 J	15	16	27	29
71-43-2	Benzene	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.000245 U	0.00021 U	0.000455 U	0.000375 U
56-55-3	Benzo(a)anthracene	0.02	0.64 J	1.2 J	0.028	0.0095	0.0043 J	0.007 J	8.1	3.7 J	5.5 J	1.5	1.9	0.025	0.01	1.2	1.2	5.7	6.1
50-32-8	Benzo(a)pyrene	0.024	0.79 J	1.1 J	0.03	0.0076	0.0029 J	0.0039	8.3	4.3	3.5	1.5	2.1	0.024	0.016	1.2	1.4	6.3	7.6
205-99-2	Benzo(b)fluoranthene	0.042	1.6	2	0.06	0.016	0.0066	0.0084	17	8.3	7.6	5.9 J	7.6 J	0.058 J	0.037 J	2.1	1.6	12	16
191-24-2	Benzo(g,h,i)perylene	0.025	0.89	0.9	0.04	0.0098	0.004	0.0049	9.2	5.2 J	3.5 J	1.5	1.9	0.029	0.022	0.94	1	4.2	5.1
207-08-9	Benzo(k)fluoranthene	0.035	0.97 J	1.5 J	0.047	0.014	0.0062	0.008	12	6.7	6.2	2.3	3.5	0.031	0.016	1.6	1.4	8.1	7.7
85-68-7	Benzyl butyl phthalate	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.18 J	0.025 J	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0135 U	0.0125 U
92-52-4	Biphenyl	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.115 U	0.105 U
111-91-1	Bis(2-chlorethoxy)methane	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.008 U	0.008 U	0.008 U	0.008 UJ	0.008 U	0.008 U	0.008 UJ	0.008 UJ	0.008 UJ	0.008 U	0.008 U	0.008 U	0.008 U	0.008 UJ	0.008 UJ	0.0115 U	0.0105 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.0115 U	0.0115 U	0.011 U	0.0115 U	0.0115 UJ	0.0115 UJ	0.0115 U	0.0115 U	0.0155 U	0.015 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.0085 U	0.056 J	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.19 J	0.029 J	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.044 J	0.0115 U
75-27-4	Bromodichloromethane	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00015 U	0.00015 U	0.00015 U	0.00018 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00018 U	0.000155 U	0.00034 U	0.00028 U
74-83-9	Bromomethane	0.00017 U	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.000165 UJ	0.000165 UJ	0.00017 UJ	0.000195 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 UJ	0.00017 UJ	0.0002 U	0.000175 U	0.000375 UJ	0.000305 UJ
7440-43-9	Cadmium	0.145 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.145 U	0.15 U	0.15 U	0.15 U	0.15 U	0.145 U	0.145 U	0.14 U	0.15 U	0.15 U	0.195 U	0.19 U
86-74-8	Carbazole	0.0085 U	0.18 J	0.21	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.84	0.88 J	0.31 J	0.3	0.6	0.0085 U	0.0085 U	0.097 J	0.18 J	1	1.2
75-15-0	Carbon disulfide	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.001 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.001 U	0.0009 U	0.0019 U	0.00155 U
56-23-5	Carbon tetrachloride	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.000215 U	0.00019 U	0.000185 U	0.000185 U	0.000185 U	0.000185 U	0.00019 U	0.00022 U	0.00019 U	0.000405 U	0.000335 U
108-90-7	Chlorobenzene	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00025 U	0.000215 U	0.000465 U	0.000385 U
124-48-1	Chlorodibromomethane	0.000135 U	0.00013 U	0.000135 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.000155 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.000155 U	0.000135 U	0.00029 U	0.00024 U
75-00-3	Chloroethane	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00022 U	0.000195 U	0.00019 U	0.00019 U	0.000195 U	0.00019 U	0.000195 U	0.000225 U	0.000195 U	0.00042 UJ	0.000345 UJ
67-66-3	Chloroform	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00021 U	0.000185 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.000215 U	0.000185 U	0.000395 U	0.000325 U
74-87-3	Chloromethane	0.00024 U	0.000235 U	0.00024 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.000275 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00028 U	0.00024 U	0.00055 U	0.00043 U
7440-47-3	Chromium	2.5	64 J	85 J	19 J	14 J	4.9 J	5.1 J	390 J	350 J	180 J	270 J	230 J	9.2	3.5	11 J	6.4 J	51	57
218-01-9	Chrysene	0.029	0.92 J	1.6 J	0.042	0.014	0.0057 J	0.0084 J	11	5.6	7.5	2.3	3.8	0.039	0.014	1.7	1.4	8.6	8.5
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.000135 U	0.00014 U	0.000135 U	0.000135 U	0.000135 U	0.000135 U	0.00016 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.000165 U	0.00014 U	0.000305 U	0.00025 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00015 U	0.00015 U	0.00015 U	0.00018 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00018 U	0.000155 U	0.00034 U	0.00028 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS064DA	SS066AA	SS066AB	SS066BA	SS066CA	SS066DA	SS066DC	SS067AA	SS067BA	SS067BB	SS068AA	SS068BA	SS068CA	SS068DA	SS069AA	SS069BA	SS070AA	SS070AB
	Sample Date	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	30-Nov-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	12-Dec-06	12-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.85 J	33 J	53 J	4.6 J	1.6 J	0.66 J	0.55 J	210	190 J	85 J	140	120	1.4 J	0.66 J	4.6	8.5	45	50
110-82-7	Cyclohexane	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00023 U	0.000205 U	0.0002 U	0.0002 U	0.000205 U	0.0002 U	0.000205 U	0.00024 U	0.000205 U	0.00044 U	0.000365 U
53-70-3	Dibenzo(a,h)anthracene	0.0071	0.28	0.28	0.011	0.0024 J	0.00096 J	0.0012 J	2.9	1.5	1.2	0.44	0.6	0.0093	0.0062	0.34 J	0.37	1.7	1.9
132-64-9	Dibenzofuran	0.007 U	0.17 J	0.18 J	0.007 U	0.007 U	0.007 U	0.007 U	0.13 J	0.14 J	0.063 J	0.093 J	0.14 J	0.029 J	0.007 U	0.007 U	0.023 J	0.086 J	0.093 J
75-09-2	Dichloromethane	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.000245 U	0.00021 U	0.000455 U	0.000375 U
84-66-2	Diethyl phthalate	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.064 J	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.009 U	0.0085 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.036 J	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0075 U	0.007 U
84-74-2	di-n-Butyl-phthalate	0.032 U	0.032 U	0.032 U	0.032 U	0.0315 U	0.0315 U	0.0315 U	0.0325 U	0.19 J	0.0325 U	0.032 U	0.0325 U	0.0325 U	0.0325 U	0.0325 U	0.033 U	0.045 U	0.0425 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.18 J	0.021 J	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0115 U	0.0105 U
100-41-4	Ethylbenzene	0.00022 U	0.00022 U	0.000225 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.000255 U	0.000225 U	0.000225 U	0.00022 U	0.000225 U	0.000225 U	0.000225 U	0.00026 U	0.000225 U	0.00049 U	0.000405 U
206-44-0	Fluoranthene	0.032	1.2	1.5	0.054	0.025	0.013 J	0.025 J	12	5.9 J	12 J	2	3.7	0.049	0.015	1.7	1.6	7.1	7.5
86-73-7	Fluorene	0.0028 J	0.11 J	0.14	0.0079	0.0041	0.0025 J	0.0044 J	0.08 U	0.08 U	0.0395 U	0.054	0.092		0.0008 U	0.017 J	0.016 U	0.11	0.105 U
87-68-3	Hexachloro-1,3-butadiene	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
118-74-1	Hexachlorobenzene	0.00435 U	0.00435 U	0.00435 U	0.00435 U	0.0043 U	0.0043 U	0.0043 U	0.00445 U	0.078 J	0.0044 U	0.00435 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.00445 U	0.0065 U	0.006 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.006 U	0.006 U	0.006 UJ	0.006 UJ	0.0085 U	0.008 U
67-72-1	Hexachloroethane	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 UJ	0.009 UJ	0.009 U	0.009 U	0.009 U	0.0095 U	0.0125 U	0.012 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.027	0.72 J	1 J	0.041	0.01	0.0042	0.0052	10	5.9 J	4.3 J	1.6	2.1	0.026	0.02	1.1	1.3	3.9	5.1
98-82-8	Isopropylbenzene	0.000245 U	0.00024 U	0.000245 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00028 UJ	0.000245 UJ	0.000245 UJ	0.000245 U	0.000245 UJ	0.000245 U	0.000245 U	0.000285 U	0.00025 U	0.00055 UJ	0.00044 UJ
7439-92-1	Lead	1.1	9.6 J	34 J	2.9 J	1.7 J	0.88 J	1.1 J	22	28 J	19 J	16	37	4.8 J	6.1 J	16	32	23	26
136777-61-2	m,p-Xylenes	0.000455 U	0.000455 U	0.00046 U	0.000455 U	0.00045 U	0.00045 U	0.00045 U	0.00055 U	0.000465 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.000465 U	0.00055 U	0.000465 U	0.00105 U	0.00085 U
541-73-1	m-Dichlorobenzene	2.65E-05 U	0.000026 U	2.65E-05 U	0.000026 U	0.000026 U	0.000026 U	0.000026 U	3.05E-05 UJ	0.000027 UJ	2.65E-05 UJ	2.65E-05 U	2.65E-05 UJ	2.65E-05 U	2.65E-05 U	0.000031 U	0.000027 U	0.00006 UJ	0.000048 UJ
7439-97-6	Mercury	0.0093 J	0.12 J	0.16 J	0.031 J	0.014 J	0.00225 U	0.0046 J	0.47 J	0.38 J	0.32 J	0.11	0.2	0.026 J	0.025	0.056 J	0.074 J	0.84	0.94
79-20-9	Methyl acetate	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.000115 UJ	0.000105 UJ	0.0001 UJ	0.0001 U	0.000105 U	0.0001 U	0.000105 U	0.00012 UJ	0.000105 UJ	0.00022 U	0.000185 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0007 U	0.0006 U	0.0013 U	0.00105 U
108-10-1	Methyl isobutyl ketone	0.000375 U	0.00037 U	0.000375 U	0.00037 U	0.00037 U	0.00037 U	0.00037 U	0.00043 U	0.00038 U	0.000375 U	0.000375 U	0.000375 U	0.000375 U	0.00038 U	0.00044 U	0.00038 U	0.00085 U	0.0007 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00055 UJ	0.00065 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00065 U	0.00055 U	0.0012 U	0.001 U
108-88-3	Methylbenzene	0.00022 U	0.00022 U	0.000225 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00051 J	0.000225 U	0.000225 U	0.00022 U	0.000225 U	0.000225 U	0.000225 U	0.00026 U	0.000225 U	0.0024 J	0.000405 U
108-87-2	Methylcylohexane	0.00023 U	0.00023 U	0.000235 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00027 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.000235 U	0.000275 U	0.000235 U	0.00055 U	0.00042 U
91-20-3	Naphthalene	0.00027 U	0.086 J	0.13 J	0.021	0.011	0.000265 U	0.000265 U	0.44	0.29 J	0.18 J	0.063	0.095	0.00027 U	0.00027 U	0.041 J	0.058 J	0.17	0.22 J
98-95-3	Nitrobenzene	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.011 U	0.011 U	0.011 U	0.0105 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.014 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0135 U	0.0125 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.086 J	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0085 U	0.008 U
95-47-6	o-Xylene	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00025 U	0.000215 U	0.000465 U	0.000385 U
106-47-8	p-Chloroaniline	0.014 U	0.014 UJ	0.014 UJ	0.014 UJ	0.0135 U	0.0135 UJ	0.0135 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0195 U	0.0185 U
87-86-5	Pentachlorophenol	0.014 J	0.35 J	0.51 J	0.02 J	0.016 J	0.000365 UJ	0.000365 UJ	3.2 J	2.9 J	2.1 J	1.4 J	3.4	0.0088 J	0.013 J	0.057 J	0.0075 U	3.7 J	2.7 J
85-01-8	Phenanthrene	0.012	0.65	0.66	0.033	0.021	0.015 J	0.027 J	1.3	1	1.2	0.24	0.44	0.0036 J	0.00175 U	0.2 J	0.22	0.82	0.9 J
108-95-2	Phenol	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.012 U	0.0115 U
100-01-6	p-Nitroaniline	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.07 J	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.009 U	0.0085 U
129-00-0	Pyrene	0.036	1.3 J	2.2 J	0.056	0.023	0.011 J	0.021 J	13	6.6 J	12 J	2.4	4.5	0.048	0.017	1.8	1.7	14	15
7782-49-2	Selenium	0.42 U	0.435 U	0.435 U	0.435 U	0.43 U	0.43 U	0.42 U	0.435 U	0.44 U	0.44 U	0.435 U	0.425 U	0.415 U	0.405 U	0.43 U	0.44 U	0.55 U	0.55 U
7440-22-4	Silver	0.19 U	0.195 U	0.195 U	0.195 U	0.195 U	0.195 U	0.19 U	0.195 U	0.2 U	0.2 U	0.195 UJ	0.195 UJ	0.19 U	0.185 U	0.195 U	0.2 U	0.255 U	0.25 U
100-42-5	Styrene (monomer)	0.000225 U	0.000225 U	0.00023 U	0.000225 U	0.000225 U	0.000225 U	0.000225 U	0.00026 U	0.00023 U	0.00023 U	0.000225 U	0.00023 U	0.00023 U	0.00023 U	0.00027 U	0.00023 U	0.0005 U	0.00041 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.000165 U	0.000165 U	0.00017 U	0.000195 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.0002 U	0.000175 U	0.000375 U	0.000305 U
127-18-4	Tetrachloroethylene	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00025 U	0.000215 U	0.000465 U	0.000385 U
156-60-5	trans-1,2-Dichloroethene	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00023 U	0.000205 U	0.0002 U	0.0002 U	0.000205 U	0.0002 U	0.000205 U	0.00024 U	0.000205 U	0.00044 U	0.000365 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.000155 U	0.000155 U	0.000155 U	0.000185 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00019 U	0.00016 U	0.00035 U	0.00029 U
75-25-2	Tribromomethane	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.000205 U	0.00024 U	0.00021 U	0.00021 U	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.000245 U	0.00021 U	0.000455 U	0.000375 U
79-01-6	Trichloroethylene	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.000245 U	0.000215 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00025 U	0.000215 U	0.000465 U	0.000385 U
7440-62-2	Vanadium	1.5	1.1 J	2 J	1.9	1.4	0.46 U	1.5	0.465 U	0.47 U	0.47 U	0.465 U	0.455 U	1.8 J	1.6 J	3.1	3.9	4.9	5.6
75-01-4	Vinyl chloride	0.00013 U	0.000125 U	0.00013 U	0.000125 U	0.000125 U	0.000125 U	0.000125 U	0.00015 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00015 U	0.00013 U	0.00028 U	0.00023 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran		0.00527 J	0.002821 J	0.000204							0.003725	0.0429	5.8E-05	4.64E-05			0.0269 J	0.0187
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		0.0373	0.018374 J	0.001408							0.035256	0.302	0.000416	0.000359			0.162	0.115
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran		0.000345	0.000323	1.18E-05							0.000252	0.00259	3.21E-06 J	2.58E-06 J			0.00175	0.00122
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran		0.000131	0.000127	4.52E-06 J							0.000112	0.00121	1.82E-06 J	1.38E-06 J			0.000693	0.00047
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		0.000361	0.000266	1.06E-05							0.000242	0.00197	3.92E-06 J	2.39E-06 J			0.00154	0.00105
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran		0.000121	0.000118	3.76E-06 J							8.6E-05	0.000838	3.48E-06 J	1.06E-06 J			0.000571	0.000381
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		0.00106	0.000841	3.43E-05							0.000647	0.0104	1.46E-05	1.14E-05			0.00464	0.0033
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran		4.91E-05 J	3.77E-06	8.15E-08 U							2.55E-06 J	0.000494	9.5E-08 U	7.15E-08 U			0.000185	0.000127
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		0.000629	0.000736	2.52E-05							0.000549	0.00383	9.35E-06	6.29E-06			0.00262	0.0018
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran		1.34E-05 J	1.61E-05	6.35E-07 J							9.22E-06	0.000158	1.47E-07 U	2.18E-07 J			5.96E-05 J	4.25E-05 J
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin		9.96E-05	9.47E-05	3.41E-06 J							7.97E-05	0.000597	1.45E-06 J	9.73E-07 J			0.00043	0.000293
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran		0.000248	0.000152 J	3.02E-06 J							0.00016	0.00191	1.63E-06 U	2.47E-06 J			0.000987	0.0007
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran		5.31E-05 J	1.57E-05	3.9E-07 J							1.33E-05	0.000503	1.62E-07 U	2.45E-07 J			0.00018	0.000128
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran		4.2E-06 J	4.67E-06	1.16E-07 U							3.1E-06	2.25E-05	1.41E-07 U	2.5E-08 U			1.16E-05 J	7.62E-06 J
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin		6.59E-06 J	4.32E-06	8.5E-08 U							5.56E-06	3.16E-05	6.5E-08 U	2.75E-08 U			2.42E-05	U
39001-02-0	Octachlorodibenzofuran		0.0216	0.010543 J	0.001172							0.037598	0.178	0.000263	0.00023			0.108	0.0782
3268-87-9	Octachlorodibenzo-p-dioxin		0.358	0.078219 J	0.014404 J							0.793361 J	3.74	0.004663 J	0.00423 J			1.49	1.04

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS070BA	SS070CA	SS070DA	SS071AA	SS071BA	SS072AA	SS072BA	SS072CA	SS072CC	SS072DA	SS073AA	SS073BA	SS074AA	SS074BA	SS075AA	SS075BA	SS075CA	SS075DA
	Sample Date	12-Dec-06	12-Dec-06	12-Dec-06	01-Dec-06	01-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	30-Nov-06	30-Nov-06	04-Dec-06	04-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06
	Sample Depth (feet)	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.00008 U	0.00007 U	0.000065 U	0.00007 U	0.00007 U	0.000065 U	0.00007 U	0.00007 U	0.00007 U	0.000065 U	0.000065 U		0.000065 U	0.00007 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	0.000042 U	0.000036 U	0.000035 U	3.85E-05 U	3.65E-05 U	0.000036 U	3.85E-05 U	0.000036 U	0.000037 U	0.000035 U	0.000036 U		0.000035 U	3.75E-05 U	0.000035 U	0.000036 U	0.000036 U	0.000036 U
79-00-5	1,1,2-Trichloroethane	0.000085 U	0.000075 U	0.00007 U	0.00008 U	0.000075 U	0.00007 U	0.00008 U	0.000075 U	0.000075 U	0.00007 U	0.000075 U		0.00007 U	0.000075 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U
75-34-3	1,1-Dichloroethane	0.00004 U	3.45E-05 U	3.35E-05 U	0.000037 U	3.45E-05 U	0.000034 U	3.65E-05 U	3.45E-05 U	0.000035 U	3.35E-05 U	3.45E-05 U		3.35E-05 U	3.55E-05 U	3.35E-05 U	3.45E-05 U	3.45E-05 U	0.0000345 U
75-35-4	1,1-Dichloroethylene	0.00011 U	0.000095 U	0.00009 U	0.0001 U	0.000095 U	0.000095 U	0.0001 U	0.000095 U	0.000095 U	0.00009 U	0.000095 U		0.00009 U	0.0001 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.000095 U	0.000085 U	0.00008 U	0.00009 UJ	0.000085 UJ	0.000085 U	0.00009 U	0.000085 U	0.000085 U	0.00008 U	0.000085 UJ		0.00008 UJ	0.000085 UJ	0.00008 UJ	0.000085 UJ	0.000085 U	0.000085 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00031 U	0.00027 U	0.00026 U	0.000285 UJ	0.00027 UJ	0.000265 U	0.000285 U	0.00027 U	0.000275 U	0.00026 U	0.000265 UJ		0.00026 UJ	0.000275 UJ	0.00026 UJ	0.00027 UJ	0.00027 U	0.00027 U
106-93-4	1,2-Dibromoethane	3.55E-05 U	3.05E-05 U	2.95E-05 U	0.000033 U	0.000031 U	3.05E-05 U	3.25E-05 U	3.05E-05 U	0.000031 U	0.00003 U	3.05E-05 U		2.95E-05 U	3.15E-05 U	0.00003 U	3.05E-05 U	3.05E-05 U	0.0000305 U
95-50-1	1,2-Dichlorobenzene	4.95E-05 U	4.25E-05 U	0.000041 U	4.55E-05 UJ	0.000043 UJ	0.000042 U	4.55E-05 U	4.25E-05 U	4.35E-05 U	4.15E-05 U	4.25E-05 UJ		0.000041 UJ	0.000044 UJ	4.15E-05 UJ	4.25E-05 UJ	4.25E-05 U	0.0000425 U
107-06-2	1,2-Dichloroethane	0.000065 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U		0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.000034 U	2.95E-05 U	2.85E-05 U	3.15E-05 U	0.00003 U	2.95E-05 U	3.15E-05 U	2.95E-05 U	0.00003 U	2.85E-05 U	2.95E-05 U		2.85E-05 U	3.05E-05 U	0.000029 U	2.95E-05 U	2.95E-05 U	0.0000295 U
106-46-7	1,4-Dichlorobenzene	0.000055 U	4.75E-05 U	0.000046 U	0.000055 UJ	0.000048 UJ	0.000047 U	0.000055 U	4.75E-05 U	4.85E-05 U	0.000046 U	0.000047 UJ		0.000046 UJ	0.000049 UJ	0.000046 UJ	4.75E-05 UJ	4.75E-05 U	0.0000475 U
95-95-4	2,4,5-Trichlorophenol	0.08 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.075 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.215 U	0.02 U	0.019 U	0.0195 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.019 U	0.0195 U	0.0195 U	0.019 U	0.0205 U	0.019 U	0.2 U	0.0195 U	0.019 U
120-83-2	2,4-Dichlorophenol	0.1 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.095 U	0.0095 U	0.009 U
105-67-9	2,4-Dimethylphenol	0.115 U	0.0105 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.024 J	0.0105 U	0.011 U	0.01 U	0.087 J	0.048 J	0.022 J	0.061 J	0.01 U	0.105 U	0.0105 U	0.01 U
51-28-5	2,4-Dinitrophenol	0.075 U	0.007 U	0.0065 U	0.0065 UJ	0.007 UJ	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 UJ	0.0065 UJ	0.0065 U	0.007 U	0.0065 U	0.07 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.06 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.215 U	0.02 U	0.019 U	0.0195 U	0.02 U	0.0195 U	0.02 U	0.02 U	0.02 U	0.019 U	0.0195 U	0.0195 U	0.019 U	0.0205 U	0.019 U	0.2 U	0.0195 U	0.019 U
91-58-7	2-Chloronaphthalene	0.095 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.09 U	0.009 U	0.0085 U
95-57-8	2-Chlorophenol	0.11 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.0095 U	0.1 U	0.01 U	0.0095 U
91-57-6	2-Methylnaphthalene	0.25 J	0.019 J	0.0035 J	0.031 J	0.028 J	0.085 U	0.085 U	0.0165 U	0.33	0.0008 U	0.39	0.48	0.48	0.53	0.4	0.66	0.13 J	0.015 J
95-48-7	2-Methylphenol (o-cresol)	0.075 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.07 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.13 U	0.012 U	0.012 U	0.012 UJ	0.0125 UJ	0.012 U	0.0125 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.0125 UJ	0.012 U	0.12 U	0.012 U	0.0115 U
88-75-5	2-Nitrophenol	0.085 U	0.008 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.008 U	0.0075 U	0.08 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.2 U	0.0185 U	0.018 U	0.0185 U	0.019 U	0.0185 U	0.019 U	0.0185 U	0.019 U	0.018 U	0.0185 U	0.0185 U	0.018 U	0.0195 U	0.018 U	0.185 U	0.0185 U	0.018 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.08 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.075 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.1 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.095 U	0.0095 U	0.009 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.06 U	0.0055 U	0.00495 U	0.005 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.00495 U	0.0055 UJ	0.005 UJ	0.00495 U	0.0055 U	0.00495 UJ	0.055 U	0.005 U	0.0049 U
101-55-3	4-Bromophenyl phenyl ether	0.06 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 UJ	0.055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.095 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.09 U	0.009 U	0.0085 U
7005-72-3	4-Chlorophenyl phenyl ether	0.13 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0125 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.12 U	0.012 U	0.0115 U
106-44-5	4-Methylphenol (m/p-cresol)	0.155 U	0.0145 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.058 J	0.029 J	0.014 U	0.015 U	0.014 U	0.145 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.1 U	0.0095 U	0.009 U	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.009 U	0.0095 U	0.0095 U	0.009 UJ	0.01 UJ	0.009 U	0.095 U	0.0095 U	0.009 U
83-32-9	Acenaphthene	0.16 UJ	0.015 UJ	0.0044 J	0.0145 U	0.015 U	0.15 U	0.15 U	0.078 J	0.075 U	0.0088	0.22 J	0.23 J	0.16	0.47	0.079	0.075 U		0.0072 J
208-96-8	Acenaphthylene	4.3	0.27	0.029	0.047 J	0.035 J	1.2	1.7	0.64	1.2	0.023	4	4.9	2.9	3.5	1.8	4.7	0.43	0.04
67-64-1	Acetone	0.011 J	0.007 J	0.01 J	0.0015 U	0.0014 U	0.00135 U	0.00145 U	0.0014 U	0.0014 U	0.00135 U	0.00135 UJ		0.00135 U	0.0043 J	0.00135 U	0.0014 U	0.014 J	0.022 J
120-12-7	Anthracene	11	0.68	0.075	0.087	0.062	2.5	3.9	1.6	3	0.066	7.5	9.6	5.1	18	2.8	5.2	0.3	0.039
7440-36-0	Antimony	0.2 UJ	0.18 UJ	0.175 UJ	0.175 U	0.185 U	0.77 J	0.56 J	0.18 U	0.37 J	0.175 U	6	3	1 J	0.61 J	2.2 J	4.5 J	15 J	0.18 UJ
7440-38-2	Arsenic	61	8.2	1.1	6.1	4.6	63	59	14	16	0.89	180 J	150 J	110	55	260	120	23 J	2.1 J
7440-39-3	Barium	30	11	8.5	24	24	21	36	24	23	14	41	85	30 E	63 E	46	72	32 J	18 J
71-43-2	Benzene	0.00025 U	0.000215 U	0.000205 U	0.00023 U	0.000215 U	0.00021 U	0.00023 U	0.000215 U	0.00022 U	0.00021 U	0.000215 U		0.000205 U	0.00022 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U
56-55-3	Benzo(a)anthracene	9.4	0.62	0.064	0.26 J	0.18	2	2.7	1	2.5	0.084	5.4	7.8	8.4	5.8	4.6	13	0.73	0.063
50-32-8	Benzo(a)pyrene	13	0.79	0.08	0.32 J	0.21	1.9	2.6	1	2.5	0.035	7.2	11	9.4	9.8	6.1	15	0.93	0.074
205-99-2	Benzo(b)fluoranthene	25	1.6	0.19	0.4 J	0.28	4.7	5.6	2.2	4.7	0.1	14	21	19	19	13 J	30 J	1.3 J	0.14 J
191-24-2	Benzo(g,h,i)perylene	11	0.63	0.072	0.25 J	0.16	2.7	3.9	1.5	2.9	0.048	7.8	9.8	13	12	7	12	0.66	0.069
207-08-9	Benzo(k)fluoranthene	11	0.84	0.09	0.35 J	0.22	3.3	4.2	1.4	3.8	0.091	8.5	12	14	12	3.3	13	0.7	0.068
85-68-7	Benzyl butyl phthalate	0.11 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.0095 U	0.1 U	0.01 U	0.0095 U
92-52-4	Biphenyl	0.9 U	0.085 U	0.08 U	0.08 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.08 U	0.085 U	0.08 U	0.08 U	0.085 U	0.08 U	0.85 U	0.08 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.1 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.095 U	0.0095 U	0.009 U
111-44-4	Bis(2-chloroethyl)ether	0.09 U	0.0085 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 UJ	0.0085 UJ	0.008 UJ	0.085 UJ	0.008 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.125 U	0.0115 U	0.0115 U	0.0115 UJ	0.0115 UJ	0.0115 UJ	0.012 UJ	0.0115 UJ	0.012 UJ	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.0115 U	0.115 U	0.0115 UJ	0.011 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.095 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.096 J	0.16 J	0.048 J	0.045 J	0.0085 U	0.21	0.17 J	0.04 J	0.075 J	0.0085 U	0.09 U	0.009 U	0.0085 U
75-27-4	Bromodichloromethane	0.000185 U	0.00016 U	0.000155 U	0.00017 U	0.00016 U	0.00016 U	0.00017 U	0.00016 U	0.000165 U	0.000155 U	0.00016 U		0.000155 U	0.000165 U	0.000155 U	0.00016 U	0.00016 U	0.00016 U
74-83-9	Bromomethane	0.000205 UJ	0.000175 UJ	0.00017 UJ	0.00019 U	0.00018 U	0.000175 U	0.000185 U	0.000175 U	0.00018 U	0.00017 U	0.000175 U		0.00017 UJ	0.00018 UJ	0.00017 U	0.000175 U	0.000175 UJ	0.000175 UJ
7440-43-9	Cadmium	0.17 U	0.155 U	0.15 U	0.15 U	0.155 U	0.48 J	0.37 J	0.15 U	0.155 U	0.15 U	1.3	0.92	0.3 J	0.57	0.4 J	0.155 U	0.155 U	0.155 U
86-74-8	Carbazole	2 J	0.16 J	0.0085 U	0.024 J	0.009 U	0.36	0.51	0.36	0.38	0.0085 U	1.5	0.95	0.85	1.3	0.85 J	1.5 J	0.062 J	0.0085 U
75-15-0	Carbon disulfide	0.00105 U	0.0009 U	0.00085 U	0.00095 U	0.0009 U	0.0009 U	0.00095 U	0.0009 U	0.0009 U	0.00085 U	0.0009 U		0.00085 U	0.0009 U	0.00085 U	0.0009 U	0.0009 U	0.0009 U
56-23-5	Carbon tetrachloride	0.000225 U	0.00019 U	0.000185 U	0.000205 U	0.000195 U	0.00019 U	0.000205 U	0.000195 U	0.000195 U	0.000185 U	0.00019 U		0.000185 U	0.0002 U	0.000185 U	0.00019 U	0.00019 U	0.00019 U
108-90-7	Chlorobenzene	0.000255 U	0.00022 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000235 U	0.00022 U	0.000225 U	0.000215 U	0.00022 U		0.00021 U	0.000225 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U
124-48-1	Chlorodibromomethane	0.00016 U	0.00014 U	0.000135 U	0.00015 U	0.00014 U	0.000135 U	0.000145 U	0.00014 U	0.00014 U	0.000135 U	0.000135 U		0.000135 U	0.000145 U	0.000135 U	0.00014 U	0.00014 U	0.00014 U
75-00-3	Chloroethane	0.00023 UJ	0.0002 UJ	0.00019 UJ	0.00021 U	0.0002 U	0.000195 U	0.00021 U	0.0002 U	0.0002 U	0.00019 U	0.000195 U		0.00019 U	0.000205 U	0.000195 U	0.000195 U	0.000195 U	0.000195 U
67-66-3	Chloroform	0.000215 U	0.000185 U	0.00018 U	0.0002 U	0.00019 U	0.000185 U	0.0002 U	0.000185 U	0.00019 U	0.00018 U	0.000185 U		0.00018 U	0.000195 U	0.00018 U	0.000185 U	0.000185 U	0.000185 U
74-87-3	Chloromethane	0.000285 U	0.000245 U	0.00024 U	0.000265 U	0.00025 U	0.000245 U	0.00026 U	0.000245 U	0.00025 U	0.00024 U	0.000245 U		0.00024 U	0.000255 U	0.00024 U	0.000245 U	0.000245 U	0.000245 U
7440-47-3	Chromium	26	9.2	5.3	10	8.8	82	59	19	21	7.8	230 J	140 J	150	60	440 J	150 J	14	10
218-01-9	Chrysene	12	0.88	0.097	0.37 J	0.25	3	3.6	1.2	3	0.12	7.4	10	12	9.4	6.5	16	0.85	0.077
156-59-2	cis-1,2-Dichloroethylene	0.000165 U	0.000145 U	0.00014 U	0.000155 U	0.000145 U	0.00014 U	0.000155 U	0.000145 U	0.000145 U	0.00014 U	0.000145 U		0.00014 U	0.00015 U	0.00014 U	0.000145 U	0.000145 U	0.000145 U
10061-01-5	cis-1,3-Dichloropropene	0.000185 U	0.00016 U	0.000155 U	0.00017 U	0.00016 U	0.00016 U	0.00017 U	0.00016 U	0.000165 U	0.000155 U	0.00016 U		0.000155 U	0.000165 U	0.000155 U	0.00016 U	0.00016 U	0.00016 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS070BA	SS070CA	SS070DA	SS071AA	SS071BA	SS072AA	SS072BA	SS072CA	SS072CC	SS072DA	SS073AA	SS073BA	SS074AA	SS074BA	SS075AA	SS075BA	SS075CA	SS075DA
	Sample Date	12-Dec-06	12-Dec-06	12-Dec-06	01-Dec-06	01-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	30-Nov-06	30-Nov-06	04-Dec-06	04-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06
	Sample Depth (feet)	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	27	7	1.8	14	12	56	52	20	21	0.7 J	210	240	100	62	250	110	51 J	1.8 J
110-82-7	Cyclohexane	0.00024 U	0.00021 U	0.0002 U	0.000225 U	0.00021 U	0.000205 U	0.00022 U	0.00021 U	0.000215 U	0.000205 U	0.00021 U		0.0002 U	0.000215 U	0.000205 U	0.00021 U	0.00021 U	0.00021 U
53-70-3	Dibenzo(a,h)anthracene	3.8	0.21	0.024	0.071 J	0.046	0.68	0.93	0.45	0.9	0.016	2.7	3.9	3.8	3.1	2 J	5	0.23	0.024
132-64-9	Dibenzofuran	0.23 J	0.017 J	0.007 U	0.007 U	0.0075 U	0.25	0.3	0.35	0.42	0.007 U	0.51	0.35	0.29	0.34	0.33	0.53 J	0.038 J	0.007 U
75-09-2	Dichloromethane	0.00025 U	0.000215 U	0.000205 U	0.00023 U	0.000215 U	0.00021 U	0.00023 U	0.000215 U	0.00022 U	0.00021 U	0.000215 U		0.000205 U	0.00022 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U
84-66-2	Diethyl phthalate	0.075 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.07 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.06 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.36 U	0.0335 U	0.0325 U	0.0325 U	0.0335 U	0.033 U	0.034 U	0.0335 U	0.034 U	0.0325 U	0.033 U	0.0325 U	0.032 U	0.0345 U	0.0325 UJ	0.335 U	0.0325 U	0.032 U
117-84-0	di-n-Octyl-phthalate	0.09 U	0.0085 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0085 U	0.008 U	0.085 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.000265 U	0.00023 U	0.000225 U	0.000245 U	0.00023 U	0.00023 U	0.000245 U	0.00023 U	0.000235 U	0.000225 U	0.00023 U		0.000225 U	0.00024 U	0.000225 U	0.00023 U	0.00023 U	0.00023 U
206-44-0	Fluoranthene	12	0.8	0.086	0.52	0.34	4.2	5.3	2.4	5.2	0.45	7.6	9.7	17	10	6.5	17	0.94	0.075
86-73-7	Fluorene	0.29 J	0.022 J	0.0031 J	0.008 U	0.0085 U	0.085 U	0.085 U	0.055 J	0.1 J	0.0033 J	0.31	0.38	0.18	0.41	0.089	0.14 J		0.0047 J
87-68-3	Hexachloro-1,3-butadiene	0.1 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.095 U	0.0095 U	0.009 U
118-74-1	Hexachlorobenzene	0.049 U	0.00455 U	0.0044 U	0.00445 U	0.00455 U	0.0045 U	0.0046 U	0.00455 U	0.00465 U	0.0044 U	0.0045 U	0.0044 U	0.0044 U	0.0047 U	0.0044 UJ	0.0455 U	0.00445 U	0.00435 U
77-47-4	Hexachlorocyclopentadiene	0.065 U	0.006 U	0.006 U	0.006 UJ	0.0065 UJ	0.006 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 UJ	0.006 UJ	0.006 U	0.0065 U	0.006 UJ	0.06 UJ	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.1 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.095 U	0.0095 U	0.009 U
193-39-5	Indeno(1,2,3-cd)pyrene	10	0.61	0.068	0.31 J	0.2	2.8	3.8	1.7	3.4	0.059	9.2	12	14	13	6.4 J	12	0.66	0.067
98-82-8	Isopropylbenzene	0.00029 U	0.00025 U	0.000245 U	0.00027 UJ	0.000255 UJ	0.00025 U	0.00027 U	0.000255 U	0.000255 U	0.000245 U	0.00025 UJ		0.000245 UJ	0.00026 UJ	0.000245 UJ	0.00025 UJ	0.00025 U	0.00025 U
7439-92-1	Lead	24	6.8	4.2	64	57	17	53	24	27	4.7	190	220	37	52	46	120	280 J	6.4 J
136777-61-2	m,p-Xylenes	0.00055 U	0.000475 U	0.00046 U	0.00055 U	0.00048 U	0.00047 U	0.00055 U	0.000475 U	0.000485 U	0.00046 U	0.00047 U		0.00046 U	0.00049 U	0.00046 U	0.000475 U	0.000475 U	0.000475 U
541-73-1	m-Dichlorobenzene	3.15E-05 U	2.75E-05 U	2.65E-05 U	2.95E-05 UJ	2.75E-05 UJ	0.000027 U	0.000029 U	2.75E-05 U	0.000028 U	2.65E-05 U	0.000027 UJ		2.65E-05 UJ	2.85E-05 UJ	2.65E-05 UJ	2.75E-05 UJ	2.75E-05 U	0.0000275 U
7439-97-6	Mercury	2.9	0.11	0.029	0.062	0.063	0.73	1.9	1.5	1.6	0.026	1.9	1.8	0.39	1.7	0.24	0.42	0.051	0.026
79-20-9	Methyl acetate	0.00012 U	0.000105 U	0.0001 U	0.000115 U	0.000105 U	0.000105 U	0.00011 U	0.000105 U	0.00011 U	0.000105 U	0.000105 U		0.0001 U	0.00011 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0007 U	0.0006 U	0.0006 U	0.00065 U	0.00065 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.0006 U	0.0006 U		0.0006 U	0.00065 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00045 U	0.000385 U	0.000375 U	0.000415 U	0.00039 U	0.000385 U	0.00041 U	0.00039 U	0.000395 U	0.000375 U	0.000385 U		0.000375 U	0.0004 U	0.00038 U	0.000385 U	0.000385 U	0.000385 U
591-78-6	Methyl n-butyl ketone	0.00065 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U		0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.00072 J	0.00023 U	0.00052 J	0.000245 U	0.00023 U	0.00023 U	0.000245 U	0.00023 U	0.000235 U	0.000225 U	0.00023 U		0.000225 U	0.00024 U	0.000225 U	0.00023 U	0.00023 U	0.00023 U
108-87-2	Methylcylohexane	0.00028 U	0.00024 U	0.000235 U	0.00026 U	0.000245 U	0.00024 U	0.000255 U	0.00024 U	0.000245 U	0.000235 U	0.00024 U		0.000235 U	0.00025 U	0.000235 U	0.00083 J	0.00024 U	0.00024 U
91-20-3	Naphthalene	0.39 J	0.034 J	0.0066 J	0.033 J	0.029 J	0.0275 U	0.0285 U	0.32	0.55	0.00027 U	0.64	0.93	0.73	0.9	0.58	1.1	0.2 J	0.046 J
98-95-3	Nitrobenzene	0.12 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.011 U	0.011 U	0.0105 U	0.0115 U	0.011 U	0.11 U	0.011 U	0.0105 U
621-64-7	n-Nitroso-di-n-Propylamine	0.11 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.0095 U	0.1 U	0.01 U	0.0095 U
86-30-6	n-Nitrosodiphenylamine	0.065 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 UJ	0.06 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.000255 U	0.00022 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000235 U	0.00022 U	0.000225 U	0.000215 U	0.00022 U		0.00021 U	0.000225 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U
106-47-8	p-Chloroaniline	0.155 U	0.0145 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.0145 U	0.0145 U	0.0145 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.015 U	0.014 U	0.145 U	0.014 U	0.014 U
87-86-5	Pentachlorophenol	7.5	0.44	0.041	0.035 J	0.025 J	7.1	9.2	1.6	3.3	0.043	8.1	6.7	2.7 J	4.5 J	0.91	0.9 J	0.039 J	0.0051 J
85-01-8	Phenanthrene	1.7	0.12	0.014	0.16	0.11	1.4	1.6	0.65	1.2	0.059	2.1	2.5	2.7	2.3	1.3	2.9	0.26	0.013 J
108-95-2	Phenol	0.095 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.0085 U	0.09 U	0.009 U	0.0085 U
100-01-6	p-Nitroaniline	0.075 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.07 U	0.0065 U	0.0065 U
129-00-0	Pyrene	18	1.3	0.15	0.43 J	0.29	4.1	5.5	1.9	4.5	0.22	7.5	9.4	16	12	7.3	25	1.1	0.088
7782-49-2	Selenium	0.49 U	0.44 U	0.44 U	0.435 U	0.455 U	0.45 U	0.445 U	0.44 U	0.445 U	0.43 U	0.425 U	0.445 U	0.425 U	0.445 U	0.44 U	0.93 J	0.45 U	0.45 U
7440-22-4	Silver	0.22 U	0.2 U	0.2 U	0.195 U	0.205 U	0.205 U	0.2 U	0.2 U	0.2 U	0.195 U	0.19 U	0.2 U	0.195 U	0.2 U	0.2 UJ	0.205 UJ	0.205 U	0.205 U
100-42-5	Styrene (monomer)	0.000275 U	0.000235 U	0.00023 U	0.00025 U	0.00024 U	0.000235 U	0.00025 U	0.000235 U	0.00024 U	0.00023 U	0.000235 U		0.00023 U	0.000245 U	0.00023 U	0.000235 U	0.000235 U	0.000235 U
1634-04-4	tert-Butyl methyl ether	0.000205 U	0.000175 U	0.00017 U	0.00019 U	0.00018 U	0.000175 U	0.000185 U	0.000175 U	0.00018 U	0.00017 U	0.000175 U		0.00017 U	0.00018 U	0.00017 U	0.000175 U	0.000175 U	0.000175 U
127-18-4	Tetrachloroethylene	0.000255 U	0.00022 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000235 U	0.00022 U	0.000225 U	0.000215 U	0.00071 J		0.00021 U	0.000225 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U
156-60-5	trans-1,2-Dichloroethene	0.00024 U	0.00021 U	0.0002 U	0.000225 U	0.00021 U	0.000205 U	0.00022 U	0.00021 U	0.000215 U	0.000205 U	0.00021 U		0.0002 U	0.000215 U	0.000205 U	0.00021 U	0.00021 U	0.00021 U
10061-02-6	trans-1,2-Dichloropropene	0.00019 U	0.000165 U	0.00016 U	0.000175 U	0.000165 U	0.000165 U	0.000175 U	0.000165 U	0.00017 U	0.00016 U	0.000165 U		0.00016 U	0.00017 U	0.00016 U	0.000165 U	0.000165 U	0.000165 U
75-25-2	Tribromomethane	0.00025 U	0.000215 U	0.000205 U	0.00023 U	0.000215 U	0.00021 U	0.00023 U	0.000215 U	0.00022 U	0.00021 U	0.000215 U		0.000205 U	0.00022 U	0.00021 U	0.000215 U	0.000215 U	0.000215 U
79-01-6	Trichloroethylene	0.000255 U	0.00022 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000235 U	0.00022 U	0.000225 U	0.000215 U	0.00022 U		0.00021 U	0.000225 U	0.000215 U	0.00022 U	0.00022 U	0.00022 U
7440-62-2	Vanadium	7.2	0.475 U	0.47 U	6.6 J	7.8 J	5.4	7.1	5.2	3.2	3.9	6.3	5.9	2.7	4.6	0.47 U	5.3	3 J	4.2 J
75-01-4	Vinyl chloride	0.000155 U	0.000135 U	0.00013 U	0.00014 U	0.000135 U	0.00013 U	0.00014 U	0.000135 U	0.000135 U	0.00013 U	0.00013 U		0.00013 U	0.000135 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.0674			0.000224	0.000156													
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.419			0.001689	0.001203													
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.00543			1.17E-05	8.1E-06													
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.00188			5.2E-06	4.12E-06 J													
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.00259			1.22E-05 J	9.1E-06													
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.000706 J			4.1E-06 J	3.18E-06 J													
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.0112			3.98E-05	2.73E-05													
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	0.000362			2.3E-07 U	4.45E-08 U													
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.00425			3.77E-05	2.7E-05													
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	5.42E-05 J			5.51E-07 J	4.29E-07 J													
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.000509			4.43E-06 J	3.29E-06 J													
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	0.00167			4.07E-06 J	2.89E-06 J													
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	0.00022			8.24E-07 J	7.79E-07 J													
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	7.81E-06 J			2.17E-07 U	1.9E-07 U													
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0102 U			2.38E-07 J	1.27E-07 U													
39001-02-0	Octachlorodibenzofuran	0.361			0.001205	0.000775													
3268-87-9	Octachlorodibenzo-p-dioxin	3.94			0.015534 J	0.010959 J													

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS076AA	SS076BA	SS077AA	SS077BA	SS077CA	SS077DA	SS077DB	SS078AA	SS078BA	SS078CA	SS078DA	SS079AA	SS079BA	SS080AA	SS080BA	SS080BB	SS080CA
	Sample Date	05-Dec-06	05-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U	0.000075 U	0.000085 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.000065 U	0.000105 U	0.000065 U	0.000065 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	0.0000345 U	0.0000355 U	0.000035 U	0.0000345 U	3.65E-05 U	3.55E-05 U	0.000039 U	0.000045 U	0.000035 U	0.000035 U	3.55E-05 U	3.85E-05 U	0.000035 U	0.00006 U	3.55E-05 U	0.000035 U	3.45E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.00007 U	0.00008 U	0.00009 U	0.00007 U	0.00007 U	0.00007 U	0.00008 U	0.00007 U	0.000115 U	0.00007 U	0.00007 U	0.00007 U
75-34-3	1,1-Dichloroethane	0.000033 U	0.0000335 U	0.0000335 U	0.000033 U	0.000035 U	0.000034 U	3.75E-05 U	0.000043 U	0.000033 U	3.35E-05 U	3.35E-05 U	0.000037 U	0.000033 U	0.000055 U	3.35E-05 U	3.35E-05 U	0.000033 U
75-35-4	1,1-Dichloroethylene	0.00009 U	0.000095 U	0.00009 U	0.00009 U	0.000095 U	0.000095 U	0.000105 U	0.00012 U	0.00009 U	0.00009 U	0.000095 U	0.0001 U	0.00009 U	0.00015 U	0.000095 U	0.00009 U	0.00009 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.00008 UJ	0.00008 UJ	0.00008 U		0.000085 U	0.00009 UJ	0.000105 U	0.00008 U	0.00008 U	0.00008 U	0.00009 U	0.00008 U	0.000135 UJ	0.00008 U	0.00008 U	0.00008 U
96-12-8	1,2-Dibromo-3-chloropropane	0.000255 U	0.000265 UJ	0.00026 UJ	0.00026 U		0.000265 U	0.00029 UJ	0.000335 U	0.00026 U	0.00026 U	0.000265 U	0.000285 U	0.00026 U	0.00043 UJ	0.000265 U	0.00026 U	0.000255 U
106-93-4	1,2-Dibromoethane	0.0000295 U	0.00003 U	0.0000295 U	0.0000295 U	0.000031 U	0.00003 U	3.35E-05 U	0.000038 U	2.95E-05 U	0.00003 U	0.00003 U	0.000033 U	2.95E-05 U	0.000049 U	0.00003 U	0.00003 U	0.000029 U
95-50-1	1,2-Dichlorobenzene	0.0000405 U	0.0000415 UJ	0.000041 UJ	0.000041 U		0.000042 U	0.000046 UJ	0.000055 U	0.000041 U	4.15E-05 U	4.15E-05 U	4.55E-05 U	0.000041 U	0.00007 UJ	4.15E-05 U	4.15E-05 U	4.05E-05 U
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.00007 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.00009 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.0000285 U	0.000029 U	0.0000285 U	0.0000285 U	0.00003 U	0.000029 U	0.000032 U	0.000037 U	2.85E-05 U	0.000029 U	0.000029 U	3.15E-05 U	2.85E-05 U	4.75E-05 U	0.000029 U	2.85E-05 U	0.000028 U
106-46-7	1,4-Dichlorobenzene	0.0000455 U	0.0000465 UJ	0.000046 UJ	0.0000455 U		4.65E-05 U	0.000055 UJ	0.00006 U	0.000046 U	0.000046 U	4.65E-05 U	0.000055 U	0.000046 U	0.00008 UJ	4.65E-05 U	0.000046 U	4.55E-05 U
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.007 U	0.07 U	0.007 U	0.07 U	0.07 U	0.07 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.019 U	0.0195 U	0.19 U	0.019 U	0.19 U	0.185 U	0.195 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.019 U	0.019 U
120-83-2	2,4-Dichlorophenol	0.009 U	0.0095 U	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
105-67-9	2,4-Dimethylphenol	0.01 U	0.0105 U	0.1 U	0.01 U	0.1 U	0.1 U	0.105 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.0105 U	0.01 U	0.01 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.0065 U	0.065 U	0.0065 U	0.065 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 UJ	0.0065 UJ	0.007 U	0.0065 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.055 U	0.0055 U	0.055 U	0.05 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.019 U	0.0195 U	0.19 U	0.019 U	0.19 U	0.185 U	0.195 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.0195 U	0.019 U	0.019 U
91-58-7	2-Chloronaphthalene	0.0085 U	0.0085 U	0.085 U	0.0085 U	0.085 U	0.085 U	0.09 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.0085 U
95-57-8	2-Chlorophenol	0.0095 U	0.01 U	0.095 U	0.0095 U	0.095 U	0.095 U	0.1 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U
91-57-6	2-Methylnaphthalene	0.22	0.24	0.2	0.008 UJ	15 J	180 J	200 J	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.056 J	0.0395 U	0.058	0.008 U	0.008 U	0.0008 U
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.0065 U	0.065 U	0.0065 U	0.065 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.0115 UJ	0.012 UJ	0.12 U	0.0115 U	0.115 U	0.115 U	0.12 U	0.012 U	0.012 U	0.0115 U	0.0115 U	0.0115 UJ	0.012 UJ	0.0125 U	0.012 U	0.012 U	0.0115 U
88-75-5	2-Nitrophenol	0.0075 U	0.0075 U	0.075 U	0.0075 U	0.075 U	0.075 U	0.08 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.018 UJ	0.0185 UJ	0.18 U	0.018 U	0.18 U	0.175 U	0.185 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.0185 U	0.018 U	0.018 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 UJ	0.007 UJ	0.07 U	0.007 U	0.07 U	0.07 U	0.07 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.009 U	0.0095 U	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0049 U	0.005 U	0.0495 U	0.0049 U	0.0485 U	0.048 U	0.055 U	0.00495 U	0.00495 U	0.0049 U	0.0049 U	0.0049 UJ	0.00495 UJ	0.0055 U	0.005 U	0.00495 U	0.00485 U
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.0055 U	0.055 U	0.0055 U	0.055 U	0.05 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.0085 U	0.0085 U	0.085 U	0.0085 U	0.085 U	0.085 U	0.09 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.0085 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0115 U	0.012 U	0.12 U	0.0115 U	0.115 U	0.115 U	0.12 U	0.012 U	0.012 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.0125 U	0.012 U	0.012 U	0.0115 U
106-44-5	4-Methylphenol (m/p-cresol)	0.0135 U	0.014 U	0.14 U	0.014 U	0.135 U	0.135 U	0.14 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.0135 U
100-02-7	4-Nitrophenol	0.009 UJ	0.0095 UJ	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
83-32-9	Acenaphthene	0.068 J	0.085 J	0.48	0.0145 UJ	46	250	240 J	0.0014 U	0.00145 U	0.00145 U	0.0046 J	0.0285 U	0.075 U	0.0155 U	0.0145 U	0.0145 U	0.015
208-96-8	Acenaphthylene	1.6	2.2	6.5	0.22 J	7.2	9.9	10	0.032	0.0093	0.0043 J	0.0014 U	0.96	1.3	0.16	0.18	0.014 U	0.0028 J
67-64-1	Acetone	0.0013 U	0.00135 U	0.00135 U	0.048 J	0.048 J	0.042 J	0.039 J	0.046 J	0.014 J	0.019 J	0.013 J	0.0015 U	0.014 J	0.0022 U	0.00135 U	0.00135 U	0.0013 U
120-12-7	Anthracene	2.8	3.7	6.5	0.18	28	140	120	0.062	0.018	0.0087	0.000325 U	1.3	1.8	0.43	0.086 J	0.14 J	0.035
7440-36-0	Antimony	0.9 J	1.1	0.175 UJ	0.175 UJ	0.185 UJ	0.17 UJ	0.18 UJ	0.175 UJ	0.175 UJ	0.17 UJ	0.18 UJ	1.4	0.9 J	0.43 J	0.18 UJ	0.175 UJ	0.17 UJ
7440-38-2	Arsenic	120	130	6.4	1.3	14 J	0.94 J	0.7 J	6.9 J	0.86 J	0.99 J	0.97 J	140 J	86 J	5.4	0.95	1	0.48 J
7440-39-3	Barium	20	20	14	14	24 J	7 J	4.7 J	12 J	8.6 J	12 J	7.8 J	10	12	34	10	13	12
71-43-2	Benzene	0.000205 U	0.00021 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.00023 U	0.000265 U	0.000205 U	0.00021 U	0.00021 U	0.00023 U	0.000205 U	0.00034 U	0.00021 U	0.00021 U	0.000205 U
56-55-3	Benzo(a)anthracene	3.9	5.6	14	0.43	28	100	87	0.083	0.023	0.017	0.0077	1.7	2.8	0.42	0.2 J	0.067 J	0.0086
50-32-8	Benzo(a)pyrene	4.5	6.5	17	0.51 J	36	49	42	0.1	0.027	0.012	0.0061	1.8	3.1	0.5	0.29 J	0.084 J	0.0088
205-99-2	Benzo(b)fluoranthene	8.7	13	28 J	0.62	55 J	68 J	55 J	0.25 J	0.071 J	0.033 J	0.019 J	3.5	5.9	0.8	0.31 J	0.14 J	0.015
191-24-2	Benzo(g,h,i)perylene	3.7	4.9	10 J	0.37	27	16	13	0.096	0.028	0.011	0.0074	2.2	3.5	0.35	0.19 J	0.059 J	0.0075
207-08-9	Benzo(k)fluoranthene	5.5	9.1	12	0.58	23	29	26	0.11	0.035	0.018	0.01	2.4	4.3	0.57	0.27 J	0.12 J	0.013
85-68-7	Benzyl butyl phthalate	0.0095 U	0.01 U	0.095 U	0.0095 U	0.095 U	0.095 U	0.1 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.022 J	0.026 J	0.01 U	0.01 U	0.0095 U	0.0095 U
92-52-4	Biphenyl	0.08 U	0.08 U	0.8 U	0.08 U	5.7	35	39	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.085 U	0.08 U	0.08 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.009 U	0.0095 U	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.008 U	0.08 UJ	0.008 UJ	0.08 U	0.08 U	0.085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 UJ	0.008 UJ	0.0085 U	0.008 U	0.008 U	0.008 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.011 UJ	0.0115 UJ	0.115 U	0.011 U	0.11 UJ	0.11 UJ	0.115 UJ	0.0115 U	0.0115 U	0.011 UJ	0.011 UJ	0.011 U	0.011 U	0.012 U	0.0115 UJ	0.0115 UJ	0.011 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.0085 U	0.021 J	0.085 U	0.0085 U	0.085 U	0.085 U	0.09 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.029 J	0.031 J	0.023 J	0.009 U	0.0085 U	0.0085 U
75-27-4	Bromodichloromethane	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.000155 U	0.000175 U	0.0002 U	0.000155 U	0.000155 U	0.000155 U	0.00017 U	0.000155 U	0.000255 U	0.000155 U	0.000155 U	0.000155 U
74-83-9	Bromomethane	0.00017 UJ	0.00017 UJ	0.00017 U	0.00017 U	0.00018 UJ	0.000175 UJ	0.00019 UJ	0.00022 UJ	0.00017 UJ	0.00017 UJ	0.00017 UJ	0.00019 U	0.00017 U	0.00028 UJ	0.000175 UJ	0.00017 UJ	0.00017 UJ
7440-43-9	Cadmium	0.145 U	0.15 U	0.15 U	0.15 U	0.16 U	0.145 U	0.155 U	0.15 U	0.15 U	0.145 U	0.15 U	0.14 U	0.15 U	0.155 U	0.155 U	0.15 U	0.145 U
86-74-8	Carbazole	0.39	0.55	1.3 J	0.062 J	14	57	61	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.26	0.37	0.073 J	0.009 U	0.0085 U	0.0085 U
75-15-0	Carbon disulfide	0.00085 U	0.00085 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.00095 U	0.0011 U	0.00085 U	0.00085 U	0.00085 U	0.00095 U	0.00085 U	0.0014 U	0.0009 U	0.00085 U	0.00085 U
56-23-5	Carbon tetrachloride	0.000185 U	0.00019 U	0.000185 U	0.000185 U	0.000195 U	0.00019 U	0.00021 U	0.00024 U	0.000185 U	0.000185 U	0.00019 U	0.000205 U	0.000185 U	0.000305 U	0.00019 U	0.000185 U	0.000185 U
108-90-7	Chlorobenzene	0.00021 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.000275 U	0.00021 U	0.000215 U	0.000215 U	0.000235 U	0.00021 U	0.00035 U	0.000215 U	0.000215 U	0.00021 U
124-48-1	Chlorodibromomethane	0.00013 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.000135 U	0.00015 U	0.00017 U	0.000135 U	0.000135 U	0.000135 U	0.00015 U	0.000135 U	0.00022 U	0.000135 U	0.000135 U	0.00013 U
75-00-3	Chloroethane	0.00019 U	0.000195 U	0.00019 U	0.00019 U	0.0002 U	0.000195 U	0.000215 U	0.000245 U	0.00019 U	0.000195 U	0.000195 U	0.00021 U	0.00019 U	0.000315 U	0.000195 U	0.00019 U	0.00019 U
67-66-3	Chloroform	0.00018 U	0.000185 U	0.00018 U	0.00018 U	0.00019 U	0.000185 U	0.000205 U	0.000235 U	0.00018 U	0.00018 U	0.000185 U	0.0002 U	0.00018 U	0.0003 U	0.000185 U	0.00018 U	0.00018 U
74-87-3	Chloromethane	0.000235 U	0.00024 U	0.00024 U	0.00024 U	0.00025 U	0.000245 U	0.00027 U	0.00031 U	0.00024 U	0.00024 U	0.00024 U	0.000265 U	0.00024 U	0.000395 U	0.00024 U	0.00024 U	0.000235 U
7440-47-3	Chromium	230	230	14 J	4.9 J	16	7.1	6.3	20	7.2	8.5	6.3	230 J	130 J	10	3.5	4.3	5.7
218-01-9	Chrysene	5.5	8.6	22	0.55	33	90	75	0.13	0.038	0.022	0.012	2.3	4	0.65	0.24 J	0.12 J	0.013
156-59-2	cis-1,2-Dichloroethylene	0.000135 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.00014 U	0.000155 U	0.00018 U	0.00014 U	0.00014 U	0.00014 U	0.000155 U	0.00014 U	0.00023 U	0.00014 U	0.00014 U	0.000135 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.000155 U	0.000155 U	0.000155 U	0.00016 U	0.000155 U	0.000175 U	0.0002 U	0.000155 U	0.000155 U	0.000155 U	0.00017 U	0.000155 U	0.000255 U	0.000155 U	0.000155 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS076AA	SS076BA	SS077AA	SS077BA	SS077CA	SS077DA	SS077DB	SS078AA	SS078BA	SS078CA	SS078DA	SS079AA	SS079BA	SS080AA	SS080BA	SS080BB	SS080CA
	Sample Date	05-Dec-06	05-Dec-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06
	Sample Depth (feet)	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	130	140	7.7	1.3	27 J	1.3 J	0.73 J	5.6 J	1.4 J	0.98 J	0.7 J	160	80	15	2 J	2.3 J	0.86 J
110-82-7	Cyclohexane	0.0002 U	0.000205 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.000225 U	0.00026 U	0.0002 U	0.000205 U	0.000205 U	0.000225 U	0.0002 U	0.000335 U	0.000205 U	0.000205 U	0.0002 U
53-70-3	Dibenzo(a,h)anthracene	1.4	1.9	4.2 J	0.13 J	10	7.6	6.8	0.033	0.0092	0.0036 J	0.0023 J	0.62	1	0.11	0.064 J	0.017 J	0.002 J
132-64-9	Dibenzofuran	0.1 J	0.13 J	0.33 J	0.007 U	33	190	210	0.007 U	0.007 U	0.007 U	0.007 U	0.041 J	0.08 J	0.024 J	0.007 U	0.007 U	0.007 U
75-09-2	Dichloromethane	0.000205 U	0.00021 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.00023 U	0.000265 U	0.000205 U	0.00021 U	0.00021 U	0.00023 U	0.000205 U	0.00034 U	0.00021 U	0.00021 U	0.000205 U
84-66-2	Diethyl phthalate	0.0065 U	0.0065 U	0.065 U	0.0065 U	0.065 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.055 U	0.0055 U	0.055 U	0.05 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.032 U	0.0325 U	0.325 U	0.032 U	0.315 U	0.315 U	0.33 U	0.0325 U	0.0325 U	0.032 U	0.032 U	0.032 U	0.032 U	0.034 U	0.0325 U	0.0325 U	0.0315 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.008 U	0.08 U	0.008 U	0.08 U	0.08 U	0.085 U	0.008 U	0.008 U	0.008 U	0.008 U	0.02 J	0.025 J	0.0085 U	0.008 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.00022 U	0.000225 U	0.000225 U	0.00022 U	0.000235 U	0.000225 U	0.018	0.000285 U	0.00022 U	0.000225 U	0.000225 U	0.000245 U	0.00022 U	0.00037 U	0.000225 U	0.000225 U	0.00022 U
206-44-0	Fluoranthene	5.6	7	40	1	100	400	350	0.12	0.038	0.028	0.014	2.7	4.4	0.74	0.19 J	0.12 J	0.042
86-73-7	Fluorene	0.11	0.15	0.52	0.018 J	51	300	270	0.0008 U	0.0008 U	0.0008 U	0.0023 J	0.033 J	0.0395 U	0.0085 U	0.008 U	0.008 U	0.029
87-68-3	Hexachloro-1,3-butadiene	0.009 U	0.0095 U	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
118-74-1	Hexachlorobenzene	0.00435 U	0.00445 U	0.044 U	0.00435 U	0.043 U	0.0425 U	0.045 U	0.0044 U	0.0044 U	0.00435 U	0.00435 U	0.00435 U	0.00435 U	0.00465 U	0.00445 U	0.0044 U	0.0043 U
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.006 U	0.06 UJ	0.006 UJ	0.06 U	0.06 U	0.06 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 UJ	0.006 UJ	0.0065 U	0.006 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.009 U	0.0095 U	0.09 U	0.009 U	0.09 U	0.09 U	0.095 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.009 U
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	6.4	10	0.4	24	16	14	0.094	0.027	0.011	0.0071	2.2	3.7	0.42	0.24 J	0.069 J	0.0087
98-82-8	Isopropylbenzene	0.00024 U	0.000245 UJ	0.000245 UJ	0.000245 U		0.00025 U	0.000275 UJ	0.000315 U	0.000245 U	0.000245 U	0.000245 U	0.00027 U	0.000245 U	0.000405 UJ	0.000245 U	0.000245 U	0.00024 U
7439-92-1	Lead	20	29	6.8	5.1	24 J	5.5 J	5.5	4.7 J	2.6 J	3.6 J	3.5 J	10	11	160	18	19	8.1
136777-61-2	m,p-Xylenes	0.000455 U	0.000465 U	0.00046 U	0.000455 U	0.00048 U	0.000465 U	0.048	0.0006 U	0.00046 U	0.00046 U	0.000465 U	0.00055 U	0.00046 U	0.0008 U	0.000465 U	0.00046 U	0.000455 U
541-73-1	m-Dichlorobenzene	0.000026 U	0.000027 UJ	0.0000265 UJ	0.0000265 U		0.000027 U	2.95E-05 UJ	0.000034 U	2.65E-05 U	2.65E-05 U	0.000027 U	2.95E-05 U	2.65E-05 U	0.000044 UJ	0.000027 U	2.65E-05 U	0.000026 U
7439-97-6	Mercury	0.11	0.15	0.043	0.022 J	0.068	0.018 J	0.11 J	0.025 J	0.029	0.01 J	0.01 J	0.077 J	0.099 J	0.16	0.043	0.042	0.019 J
79-20-9	Methyl acetate	0.0001 U	0.000105 U	0.0001 U	0.0001 U	0.000105 U	0.000105 U	0.000115 U	0.00013 U	0.0001 U	0.000105 U	0.000105 U	0.000115 UJ	0.0001 UJ	0.00017 U	0.000105 U	0.000105 U	0.0001 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0031 J	0.003 J	0.00075 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.001 U	0.0006 U	0.0006 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.00037 U	0.00038 U	0.000375 U	0.000375 U	0.00039 U	0.00038 U	0.00042 U	0.000485 U	0.000375 U	0.000375 U	0.00038 U	0.000415 U	0.000375 U	0.00065 U	0.00038 U	0.000375 U	0.00037 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.0007 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.0009 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.00022 U	0.000225 U	0.000225 U	0.00022 U	0.000235 U	0.000225 U	0.00053 J	0.000285 U	0.00022 U	0.000225 U	0.000225 U	0.000245 U	0.00022 U	0.00037 U	0.000225 U	0.000225 U	0.00022 U
108-87-2	Methylcylohexane	0.00023 U	0.000235 U	0.000235 U	0.00023 U	0.000245 U	0.00024 U	0.00026 U	0.0003 U	0.000235 U	0.000235 U	0.000235 U	0.00026 U	0.000235 U	0.000385 U	0.000235 U	0.000235 U	0.00023 UJ
91-20-3	Naphthalene	0.29	0.36	0.5	0.02 J	17 J	290 J	400 J	0.000265 U	0.00027 U	0.00027 U	0.000275 U	0.11	0.13 J	0.083	0.018 J	0.0027 U	0.000265 U
98-95-3	Nitrobenzene	0.0105 U	0.011 U	0.11 U	0.0105 U	0.105 U	0.105 U	0.11 U	0.011 U	0.011 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.0105 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0095 UJ	0.01 UJ	0.095 U	0.0095 U	0.095 U	0.095 U	0.1 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0095 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.06 U	0.006 U	0.06 U	0.06 U	0.06 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.00021 U	0.000215 U	0.000215 U	0.00021 U	0.0065	0.0079 J	0.037 J	0.000275 U	0.00021 U	0.000215 U	0.000215 U	0.000235 U	0.00021 U	0.00035 U	0.000215 U	0.000215 U	0.00021 U
106-47-8	p-Chloroaniline	0.0135 U	0.014 U	0.14 U	0.014 U	0.135 U	0.135 U	0.14 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.0135 U
87-86-5	Pentachlorophenol	0.83 J	1.1 J	0.67 J	0.0037 UJ	0.31 J	0.089 J	0.038 U	0.021 J	0.0058 J	0.0027 J	0.0011 J	1.8	1.8 J	0.15 J	0.00375 U	0.098 J	0.000365 U
85-01-8	Phenanthrene	1.5	1.7	5.9	0.16 J	140	850	680	0.00175 U	0.00175 U	0.00175 U		0.54	0.76	0.23	0.045 J	0.0175 U	0.11
108-95-2	Phenol	0.0085 U	0.0085 U	0.085 U	0.0085 U	0.085 U	0.085 U	0.09 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.0085 U
100-01-6	p-Nitroaniline	0.0065 U	0.0065 U	0.065 U	0.0065 U	0.065 U	0.065 U	0.065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
129-00-0	Pyrene	8.3	11	41	1.2	74	290	250	0.15	0.045	0.03	0.015	2.8	4.9	0.76	0.23 J	0.14 J	0.033
7782-49-2	Selenium	0.42 U	0.44 U	0.43 U	0.43 U	0.46 U	0.415 U	0.445 U	0.43 U	0.43 U	0.42 U	0.44 U	0.41 U	0.435 U	0.45 U	0.44 U	0.44 U	0.425 U
7440-22-4	Silver	0.19 U	0.2 U	0.195 UJ	0.195 UJ	0.21 U	0.19 U	0.2 U	0.195 U	0.195 U	0.19 U	0.2 U	0.185 U	0.2 U	0.205 U	0.2 U	0.2 U	0.195 U
100-42-5	Styrene (monomer)	0.000225 U	0.00023 U	0.00023 U	0.000225 U	0.0028 J	0.0022 J	0.0088 J	0.000295 U	0.00023 U	0.00023 U	0.00023 U	0.00025 U	0.000225 U	0.000375 U	0.00023 U	0.00023 U	0.000225 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00018 U	0.000175 U	0.00019 U	0.00022 U	0.00017 U	0.00017 U	0.00017 U	0.00019 U	0.00017 U	0.00028 U	0.000175 U	0.00017 U	0.00017 U
127-18-4	Tetrachloroethylene	0.00021 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.000275 U	0.00021 U	0.000215 U	0.000215 U	0.000235 U	0.00021 U	0.00035 U	0.000215 U	0.000215 U	0.00021 U
156-60-5	trans-1,2-Dichloroethene	0.0002 U	0.000205 U	0.0002 U	0.0002 U	0.00021 U	0.000205 U	0.000225 U	0.00026 U	0.0002 U	0.000205 U	0.000205 U	0.000225 U	0.0002 U	0.000335 U	0.000205 U	0.000205 U	0.0002 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.000165 U	0.000165 U	0.00018 U	0.000205 U	0.00016 U	0.00016 U	0.00016 U	0.000175 U	0.00016 U	0.000265 U	0.00016 U	0.00016 U	0.00016 U
75-25-2	Tribromomethane	0.000205 U	0.00021 U	0.000205 U	0.000205 U	0.000215 U	0.00021 U	0.00023 U	0.000265 U	0.000205 U	0.00021 U	0.00021 U	0.00023 U	0.000205 U	0.00034 U	0.00021 U	0.00021 U	0.000205 U
79-01-6	Trichloroethylene	0.00021 U	0.000215 U	0.000215 U	0.00021 U	0.00022 U	0.000215 U	0.00024 U	0.000275 U	0.00021 U	0.000215 U	0.000215 U	0.000235 U	0.00021 U	0.00035 U	0.000215 U	0.000215 U	0.00021 U
7440-62-2	Vanadium	0.455 U	0.47 U	1.6	4.3	4.8 J	2.4 J	1.7 J	3.1 J	2.6 J	5.1 J	3.3 J	0.44 U	0.47 U	12	3.1	3.3	3.2
75-01-4	Vinyl chloride	0.000125 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.00013 U	0.000145 U	0.000165 U	0.00013 U	0.00013 U	0.00013 U	0.00014 U	0.00013 U	0.00021 U	0.00013 U	0.00013 U	0.000125 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.00472	0.00537												0.000403	3.55E-05	2.78E-05	1.02E-05
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.0308	0.0357												0.004082	0.000297	0.000224	7.28E-05
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.000397	0.000489												2.12E-05	1.7E-06 J	1.23E-06 J	4.87E-07 J
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.000156	0.000193												1.04E-05	8.26E-07 J	6.57E-07 J	2.12E-07 J
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.000397	0.000463												2.53E-05 J	1.96E-06 J	1.6E-06 J	5.24E-07 J
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.000133	0.000165												6.88E-06	6.05E-07 J	4.42E-07 J	1.58E-07 J
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000854	0.000885												7.6E-05 J	5.4E-06	3.84E-06 J	1.46E-06 J
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	0.0000438 J	0.0000572 J												8.4E-08 U	6.15E-08 U	6.1E-08 U	3E-08 U
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000603	0.000625												4.35E-05	3.73E-06 J	1.36E-06 U	1.75E-06 J
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	0.0000147 J	0.0000176 J												1.02E-06 J	9.5E-08 J	1.75E-08 U	1.15E-08 U
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.000126	0.000129												8.07E-06	6.39E-07 J	4.81E-07 J	1.85E-08 U
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	0.000215	0.000257												6.52E-06	6.14E-07 J	5.34E-07 J	1.33E-07 J
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	0.0000386 J	0.0000446 J												1.8E-06 J	1.51E-07 J	6.9E-08 U	1.3E-08 U
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	0.0016 U	0.000002615 U												6.47E-07 J	2.1E-08 U	1.3E-08 U	1.05E-08 U
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.0000126	0.0000127												1.8E-07 U	1.15E-08 U	1.05E-08 U	7.5E-09 U
39001-02-0	Octachlorodibenzofuran	0.0179	0.0226												0.002308	0.00016	0.000115	3.61E-05
3268-87-9	Octachlorodibenzo-p-dioxin	0.309	0.344												0.039639	0.00252	0.001887	0.000623

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS080DA	SS081AA	SS081BA	SS082AA	SS082BA	SS082CA	SS082DA	SS083AA	SS083BA	SS084AA	SS084BA	SS084CA	SS084DA	SS085AA	SS085BA	SS086AA	SS086BA	SS086BB
	Sample Date	06-Dec-06	01-Dec-06	01-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	01-Dec-06	01-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	09-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000075 U	0.000065 U	0.00007 U	0.000075 U	0.00007 U	0.000065 U	0.000105 U	0.000085 U	0.000085 U	0.000065 U	0.000065 U	0.000075 U	0.000065 U	0.00007 U	0.000065 U	0.00007 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	0.000035 U	0.00004 U	3.55E-05 U	3.75E-05 U	4.15E-05 U	0.000038 U	0.000036 U	0.00006 U	0.000047 U	0.000047 U	0.000035 U	0.000036 U	0.000039 U	0.000035 U	3.65E-05 U	0.000035 U	3.65E-05 U	3.55E-05 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00008 U	0.00007 U	0.000075 U	0.000085 U	0.000075 U	0.000075 U	0.000115 U	0.000095 U	0.000095 U	0.00007 U	0.000075 U	0.00008 U	0.00007 U	0.000075 U	0.00007 U	0.000075 U	0.00007 U
75-34-3	1,1-Dichloroethane	3.35E-05 U	0.000038 U	0.000034 U	0.000036 U	3.95E-05 U	3.65E-05 U	0.000034 U	0.000055 U	4.45E-05 U	4.45E-05 U	3.35E-05 U	3.45E-05 U	0.000037 U	3.35E-05 U	0.000035 U	3.35E-05 U	0.000035 U	0.000034 U
75-35-4	1,1-Dichloroethylene	0.00009 U	0.000105 U	0.000095 U	0.0001 U	0.00011 U	0.0001 U	0.000095 U	0.00015 U	0.000125 U	0.00012 U	0.00009 U	0.000095 U	0.0001 U	0.00009 U	0.000095 U	0.00009 U	0.000095 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.00009 U	0.000085 U	0.000085 U	0.000095 U	0.00009 U	0.000085 U	0.00013 U	0.00011 U	0.00011 U	0.00008 U	0.000085 U	0.00009 U	0.00008 UJ	0.000085 UJ	0.00008 U	0.000085 U	0.00008 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00026 U	0.000295 U	0.000265 U	0.00028 U	0.00031 U	0.000285 U	0.000265 U	0.00042 U	0.00035 U	0.00035 U	0.00026 U	0.00027 U	0.00029 U	0.00026 UJ	0.00027 UJ	0.00026 U	0.00027 U	0.000265 U
106-93-4	1,2-Dibromoethane	2.95E-05 U	0.000034 U	3.05E-05 U	0.000032 U	0.000035 U	3.25E-05 U	3.05E-05 U	0.000048 U	0.00004 U	0.00004 U	0.00003 U	3.05E-05 U	0.000033 U	0.00003 U	0.000031 U	0.00003 U	0.000031 U	0.00003 U
95-50-1	1,2-Dichlorobenzene	0.000041 U	0.000047 U	0.000042 U	0.000044 U	0.000049 U	0.000045 U	4.25E-05 U	0.00007 U	0.00006 U	0.00006 U	4.15E-05 U	4.25E-05 U	0.000046 U	4.15E-05 UJ	0.000043 UJ	4.15E-05 U	0.000043 U	0.000042 U
107-06-2	1,2-Dichloroethane	0.000055 U	0.00006 U	0.000055 U	0.00006 U	0.000065 U	0.00006 U	0.000055 U	0.00009 U	0.000075 U	0.000075 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U
78-87-5	1,2-Dichloropropane	2.85E-05 U	3.25E-05 U	2.95E-05 U	3.05E-05 U	0.000034 U	0.000031 U	2.95E-05 U	4.65E-05 U	3.85E-05 U	3.85E-05 U	0.000029 U	2.95E-05 U	0.000032 U	0.000029 U	0.00003 U	0.000029 U	0.00003 U	0.000029 U
106-46-7	1,4-Dichlorobenzene	0.000046 U	0.000055 U	0.000047 U	4.95E-05 U	0.000055 U	0.00005 U	0.000047 U	0.00057 J	0.000065 U	0.000065 U	4.65E-05 U	4.75E-05 U	0.000055 U	4.65E-05 UJ	0.000048 UJ	0.000046 U	0.000048 U	4.65E-05 U
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.0075 U	0.007 U	0.0075 U	0.29 J	0.075 UJ	0.007 U	0.0085 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
88-06-2	2,4,6-Trichlorophenol	0.019 U	0.0205 U	0.0195 U	0.0205 U	0.205 U	0.21 UJ	0.0195 U	0.023 U	0.021 U	0.0195 U	0.019 U	0.019 U	0.0215 U	0.0195 U	0.02 U	0.019 U	0.019 U	0.0195 U
120-83-2	2,4-Dichlorophenol	0.009 U	0.01 U	0.0095 U	0.01 U	0.095 U	0.1 UJ	0.0095 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.01 U	0.011 U	0.0105 U	0.011 U	0.11 U	0.11 UJ	0.0105 U	0.0125 U	0.011 U	0.0105 U	0.01 U	0.01 U	0.0115 U	0.0105 U	0.048 J	0.01 U	0.01 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.007 UJ	0.0065 U	0.007 U	0.07 U	0.07 UJ	0.0065 U	0.008 UJ	0.007 UJ	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 UJ	0.007 UJ	0.0065 U	0.0065 U	0.0065 U
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.006 U	0.0055 U	0.006 U	0.055 U	0.06 U	0.0055 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.019 U	0.0205 U	0.0195 U	0.0205 U	0.205 U	0.21 U	0.0195 U	0.023 U	0.021 U	0.0195 U	0.019 U	0.019 U	0.0215 U	0.0195 U	0.02 U	0.019 U	0.019 U	0.0195 U
91-58-7	2-Chloronaphthalene	0.0085 U	0.0095 U	0.009 U	0.009 U	0.09 U	0.095 U	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.0095 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U
95-57-8	2-Chlorophenol	0.0095 U	0.0105 U	0.01 U	0.0105 U	0.105 U	0.105 UJ	0.01 U	0.0115 U	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U
91-57-6	2-Methylnaphthalene	0.0008 U	0.22	0.11 J	0.13	11	5.1	0.054	0.16	0.22	0.025	0.12	0.011	0.0009 U	0.12 J	0.3 J	0.053	0.11	0.1
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.008 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
88-74-4	2-Nitroaniline	0.012 U	0.0125 UJ	0.012 UJ	0.0125 U	0.125 U	0.13 U	0.012 U	0.014 UJ	0.013 UJ	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
88-75-5	2-Nitrophenol	0.0075 U	0.008 U	0.008 U	0.008 U	0.08 U	0.085 UJ	0.008 U	0.009 U	0.0085 U	0.008 U	0.0075 U	0.0075 U	0.0085 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.0075 U
91-94-1	3,3'-Dichlorobenzidine	0.018 U	0.0195 U	0.0185 U	0.0195 U	0.19 U	0.2 U	0.0185 U	0.022 U	0.02 U	0.0185 U	0.018 U	0.018 U	0.02 U	0.018 U	0.0185 U	0.018 U	0.018 U	0.0185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.0075 U	0.007 UJ	0.0075 U	0.075 U	0.075 U	0.007 U	0.0085 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.007 U
99-09-2	3-Nitroaniline	0.009 U	0.01 U	0.0095 U	0.01 U	0.095 U	0.1 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.00495 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.055 UJ	0.0055 U	0.006 UJ	0.0055 UJ	0.0055 U	0.00495 U	0.00495 U	0.006 U	0.005 UJ	0.0055 UJ	0.00495 U	0.00495 UJ	0.005 UJ
101-55-3	4-Bromophenyl phenyl ether	0.0055 U	0.006 U	0.0055 U	0.006 U	0.055 U	0.06 U	0.0055 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 UJ	0.0055 UJ
59-50-7	4-Chloro-3-methylphenol	0.0085 U	0.0095 U	0.009 U	0.009 U	0.09 U	0.095 UJ	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.0095 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.012 U	0.0125 U	0.012 U	0.0125 U	0.125 U	0.13 U	0.012 U	0.014 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.015 U	0.014 U	0.015 U	0.145 U	0.15 U	0.014 U	0.0165 U	0.015 U	0.014 U	0.014 U	0.014 U	0.0155 U	0.014 U	0.0145 U	0.014 U	0.014 U	0.014 U
100-02-7	4-Nitrophenol	0.009 U	0.01 U	0.0095 UJ	0.01 UJ	0.095 UJ	0.1 UJ	0.0095 U	0.011 U	0.01 U	0.0095 UJ	0.009 UJ	0.009 UJ	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
83-32-9	Acenaphthene	0.023	0.08 U	0.04 J	0.16	190	53	0.2	0.0345 U	0.068 J	0.012	0.11	0.011	0.014	0.075 U	0.15 U	0.0145 U	0.096	0.11
208-96-8	Acenaphthylene	0.0014 U	0.95	0.68 J	1.3	7	3.5 J	0.0085	0.44	0.68	0.025	0.61	0.023	0.00155 U	1	5.6	0.53	0.95	0.99
67-64-1	Acetone	0.00135 U	0.0015 U	0.057 J	0.00145 U	0.0016 U	0.078 J	0.034 J	0.00215 U	0.0018 U	0.0018 U	0.018 J	0.0014 U	0.0015 U	0.00135 UJ	0.0014 UJ	0.00135 U	0.16 J	0.063 J
120-12-7	Anthracene	0.036	1.5	1.1 J	2.6	240	26	0.14	0.84	1.3	0.05	1.1	0.046	0.0048	2.2	13	0.86	1.9	1.8
7440-36-0	Antimony	0.165 UJ	0.63 J	0.175 U	0.41 J	0.71 J	1.3	0.175 U	1.1 J	1.1 J	0.18 UJ	0.175 UJ	0.175 UJ	0.2 UJ	0.86 J	1.7	0.56 J	0.43 J	0.57 J
7440-38-2	Arsenic	0.195 U	19 J	5.8 J	14	39	91	7.9	46 J	45 J	4.4	13	22	0.62	120 J	69 J	49	42	41
7440-39-3	Barium	8	32	23	25	59	21	13	15	13	16	16	4.7	12	30	55	15	21 J	14 J
71-43-2	Benzene	0.000205 U	0.000235 U	0.00021 U	0.00022 U	0.0029 J	0.00053 J	0.000215 U	0.000335 U	0.00028 U	0.00028 U	0.00021 U	0.000215 U	0.00023 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U
56-55-3	Benzo(a)anthracene	0.0039	2.4	0.95 J	2.3	120	39	0.073	0.93	1.6	0.063	0.92	0.022	0.0009 J	1.7	10	0.98	1.8	2.1
50-32-8	Benzo(a)pyrene	0.0028 J	2.8	1.5 J	4.4	43	19	0.033	0.91	1.3	0.058	1.1	0.027	0.00065 U	1.9	12	1	2.2	2.5
205-99-2	Benzo(b)fluoranthene	0.0053	5.2	2.6 J	8	63	22	0.044	1.8	2.9	0.12	1.8	0.046	0.002 J	3.7	25	2	7.6	8.2
191-24-2	Benzo(g,h,i)perylene	0.0025 J	2.8	1.5 J	2.2	8.9	6.7	0.0099	1.1	1.5	0.041	0.96	0.023	0.000385 U	2.1	11	1.1	1.8	1.8
207-08-9	Benzo(k)fluoranthene	0.0044	4.5	1.7 J	4.7	58	23	0.044	1.5	2	0.097	1.5	0.045	0.0017 J	2.7	15	1.5	3.5	4.3
85-68-7	Benzyl butyl phthalate	0.0095 U	0.0105 U	0.01 U	0.0105 U	0.105 U	0.105 U	0.01 U	0.0115 U	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U
92-52-4	Biphenyl	0.08 U	0.085 U	0.085 U	0.085 U	3 J	0.9 U	0.085 U	0.095 U	0.09 U	0.085 U	0.08 U	0.08 U	0.09 U	0.08 U	0.085 U	0.08 U	0.08 U	0.08 U
111-91-1	Bis(2-chlorethoxy)methane	0.009 U	0.01 U	0.0095 U	0.01 U	0.095 U	0.1 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.008 UJ	0.0085 UJ	0.0085 U	0.0085 U	0.085 U	0.09 U	0.0085 U	0.0095 UJ	0.009 UJ	0.0085 U	0.008 U	0.008 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.008 UJ	0.008 UJ
39638-32-9	Bis(2-chloroisopropyl) ether	0.0115 U	0.012 U	0.0115 UJ	0.012 UJ	0.12 UJ	0.125 UJ	0.0115 U	0.0135 U	0.0125 U	0.0115 UJ	0.0115 UJ	0.0115 UJ	0.0125 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.0085 U	0.027 J	0.009 U	0.027 J	0.09 U	0.095 U	0.009 U	0.024 J	0.026 J	0.009 U	0.0085 U	0.0085 U	0.0095 U	0.057 J	0.048 J	0.0085 U	0.0085 U	0.009 U
75-27-4	Bromodichloromethane	0.000155 U	0.000175 U	0.00016 U	0.000165 U	0.000185 U	0.00017 U	0.00016 U	0.00025 U	0.000205 U	0.000205 U	0.000155 U	0.00016 U	0.000175 U	0.000155 U	0.00016 U	0.000155 U	0.00016 U	0.000155 U
74-83-9	Bromomethane	0.00017 UJ	0.000195 U	0.000175 U	0.000185 U	0.0002 U	0.000185 U	0.000175 U	0.000275 U	0.00023 U	0.00023 U	0.00017 U	0.000175 U	0.00019 U	0.00017 U	0.00018 U	0.00017 U	0.00018 U	0.000175 U
7440-43-9	Cadmium	0.14 U	0.15 U	0.15 U	0.16 U	0.16 U	0.16 U	0.15 U	0.18 U	0.16 U	0.36 J	0.15 U	0.15 U	0.17 U	0.15 U	0.155 U	0.15 U	0.15 U	0.155 U
86-74-8	Carbazole	0.0085 U	0.16 J	0.18 J	0.39	24	4.1	0.009 U	0.11 J	0.14 J	0.009 U	0.065 J	0.073 J	0.0095 U	0.21	1.5	0.23	0.32 J	0.38 J
75-15-0	Carbon disulfide	0.00085 U	0.001 U	0.0009 U	0.00095 U	0.001 U	0.00095 U	0.0009 U	0.0014 U	0.00115 U	0.00115 U	0.00085 U	0.0009 U	0.00095 U	0.00085 U	0.0009 U	0.00085 U	0.0009 U	0.0009 U
56-23-5	Carbon tetrachloride	0.000185 U	0.00021 U	0.00019 U	0.0002 U	0.00022 U	0.000205 U	0.00019 U	0.0003 U	0.00025 U	0.00025 U	0.00019 U	0.00019 U	0.00021 U	0.00019 U	0.000195 U	0.000185 U	0.000195 U	0.00019 U
108-90-7	Chlorobenzene	0.000215 U	0.00024 U	0.00022 U	0.00023 U	0.00025 U	0.00023 U	0.00022 U	0.000345 U	0.000285 U	0.000285 U	0.000215 U	0.00022 U	0.000235 U	0.000215 U	0.00022 U	0.000215 U	0.00022 U	0.000215 U
124-48-1	Chlorodibromomethane	0.000135 U	0.00015 U	0.000135 U	0.000145 U	0.00016 U	0.000145 U	0.000135 U	0.000215 U	0.00018 U	0.00018 U	0.000135 U	0.00014 U	0.00015 U	0.000135 U	0.00014 U	0.000135 U	0.00014 U	0.000135 U
75-00-3	Chloroethane	0.00019 U	0.00022 U	0.000195 U	0.000205 U	0.000225 U	0.00021 U	0.000195 U	0.00031 U	0.000255 U	0.000255 U	0.000195 U	0.000195 U	0.000215 U	0.000195 U	0.0002 U	0.000195 U	0.0002 U	0.000195 U
67-66-3	Chloroform	0.00018 U	0.000205 U	0.000185 U	0.000195 U	0.000215 U	0.000195 U	0.000185 U	0.000295 U	0.000245 U	0.00024 U	0.00018 U	0.000185 U	0.0002 U	0.00018 U	0.00019 U	0.00018 U	0.00019 U	0.000185 U
74-87-3	Chloromethane	0.00024 U	0.00027 U	0.000245 U	0.000255 U	0.000285 U	0.00026 U	0.000245 U	0.000385 U	0.00032 U	0.00032 U	0.00024 U	0.000245 U	0.000265 U	0.00024 U	0.00025 U	0.00024 U	0.00025 U	0.00024 U
7440-47-3	Chromium	4.4	19 J	20 J	14	11	5.4	7.7	62 J	57 J	17	13	3.7	8.8	210 J	36 J	83 J	69 J	75 J
218-01-9	Chrysene	0.0054	4.1	1.5 J	4.2	110	37	0.073	1.3	2.2	0.097	1.2	0.029	0.0012 J	2.4	16	1.5	2.6 J	4.6 J
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.00016 U	0.00014 U	0.00015 U	0.000165 U	0.00015 U	0.000145 U	0.000225 U	0.000185 U	0.000185 U	0.00014 U	0.000145 U	0.000155 U	0.00014 U	0.000145 U	0.00014 U	0.000145 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.000175 U	0.00016 U	0.000165 U	0.000185 U	0.00017 U	0.00016 U	0.00025 U	0.000205 U	0.000205 U	0.000155 U	0.00016 U	0.000175 U	0.000155 U	0.00016 U	0.000155 U	0.00016 U	0.000155 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS080DA	SS081AA	SS081BA	SS082AA	SS082BA	SS082CA	SS082DA	SS083AA	SS083BA	SS084AA	SS084BA	SS084CA	SS084DA	SS085AA	SS085BA	SS086AA	SS086BA	SS086BB
	Sample Date	06-Dec-06	01-Dec-06	01-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	01-Dec-06	01-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	09-Dec-06
	Sample Depth (feet)	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.34 J	18	8.2	13	19	11	0.155 U	43	43	4.7	6	0.68 J	0.175 U	120	41	44	36 J	50 J
110-82-7	Cyclohexane	0.0002 U	0.00023 U	0.000205 U	0.000215 U	0.00024 U	0.00022 U	0.000205 U	0.000325 U	0.00027 U	0.00027 U	0.000205 U	0.00021 U	0.000225 U	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.000205 U
53-70-3	Dibenzo(a,h)anthracene	0.0007 J	0.88	0.5 J	0.79	4.4	0.51	0.0039	0.33	0.48	0.015	0.32	0.0075	0.0003 U	0.64	4	0.3	0.62	0.6
132-64-9	Dibenzofuran	0.007 U	0.094 J	0.072 J	0.2 J	46	17	0.021 J	0.14 J	0.15 J	0.007 U	0.017 J	0.017 J	0.008 U	0.067 J	0.18 J	0.066 J	0.19	0.25
75-09-2	Dichloromethane	0.000205 U	0.000235 U	0.00021 U	0.00022 U	0.000245 U	0.000225 U	0.000215 U	0.000335 U	0.00028 U	0.00028 U	0.00021 U	0.000215 U	0.00023 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U
84-66-2	Diethyl phthalate	0.0065 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.008 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
131-11-3	Dimethyl phthalate	0.0055 U	0.006 U	0.0055 U	0.006 U	0.055 U	0.06 U	0.0055 U	0.0065 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.0325 U	0.0345 U	0.033 U	0.0345 U	0.34 U	0.355 U	0.033 U	0.039 U	0.0355 U	0.033 U	0.0325 U	0.0325 U	0.036 U	0.0325 U	0.0335 U	0.0325 U	0.0325 UJ	0.0325 UJ
117-84-0	di-n-Octyl-phthalate	0.008 U	0.0085 U	0.0085 U	0.0085 U	0.085 U	0.09 U	0.0085 U	0.0095 U	0.009 U	0.0085 U	0.008 U	0.008 U	0.009 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.008 U
100-41-4	Ethylbenzene	0.000225 U	0.000255 U	0.00023 U	0.00024 U	0.02 J	0.005 J	0.00023 U	0.00036 U	0.0003 U	0.0003 U	0.000225 U	0.00023 U	0.00025 U	0.000225 U	0.000235 U	0.000225 U	0.000235 U	0.000225 U
206-44-0	Fluoranthene	0.045	5.1	1.7 J	5.9	600	230	0.42	1.8	2.8	0.14	1	0.000315 U	0.00035 U	2.8	14	1.8	4	4
86-73-7	Fluorene	0.048	0.0425 U	0.055 J	0.13	170	35	0.11	0.051 J	0.068 J	0.0093	0.078	0.0087	0.011	0.12 J	0.51	0.02 J	0.081	0.1
87-68-3	Hexachloro-1,3-butadiene	0.009 U	0.01 U	0.0095 U	0.01 U	0.095 U	0.1 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0044 U	0.0047 U	0.0045 U	0.0047 U	0.0465 U	0.048 U	0.0045 U	0.0055 U	0.0048 U	0.0045 U	0.0044 U	0.0044 U	0.0049 U	0.0044 U	0.00455 U	0.0044 U	0.0044 UJ	0.00445 UJ
77-47-4	Hexachlorocyclopentadiene	0.006 U	0.0065 UJ	0.006 U	0.0065 U	0.065 U	0.065 U	0.006 U	0.007 UJ	0.0065 UJ	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 UJ	0.006 UJ	0.006 U	0.006 UJ	0.006 UJ
67-72-1	Hexachloroethane	0.009 U	0.01 U	0.0095 U	0.01 U	0.095 U	0.1 U	0.0095 U	0.011 U	0.01 U	0.0095 U	0.009 U	0.009 U	0.01 U	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.0028 J	3.2	1.6 J	2.6	13	8.8	0.014	1.2	1.8	0.052	1.1	0.025	0.00055 U	2.4	14	1.1	2	2.1
98-82-8	Isopropylbenzene	0.000245 U	0.00028 U	0.00025 U	0.00026 U	0.00029 U	0.000265 U	0.00025 U	0.000395 U	0.000325 U	0.000325 U	0.000245 U	0.00025 U	0.00027 U	0.000245 UJ	0.000255 UJ	0.000245 U	0.000255 U	0.000245 U
7439-92-1	Lead	4.4	20	15	18	39	36	3.8	16	14	3	9.1	2	3.7	15	69	11	18	19
136777-61-2	m,p-Xylenes	0.00046 U	0.00055 U	0.00047 U	0.000495 U	0.026 J	0.0046 J	0.00047 U	0.00075 U	0.00065 U	0.00065 U	0.000465 U	0.000475 U	0.00055 U	0.000465 U	0.00048 U	0.00046 U	0.00048 U	0.000465 U
541-73-1	m-Dichlorobenzene	2.65E-05 U	0.00003 U	0.000027 U	2.85E-05 U	3.15E-05 U	0.000029 U	0.000027 U	0.000043 U	3.55E-05 U	3.55E-05 U	2.65E-05 U	2.75E-05 U	2.95E-05 U	2.65E-05 UJ	2.75E-05 UJ	2.65E-05 U	2.75E-05 U	0.000027 U
7439-97-6	Mercury	0.027	0.25 J	0.66	0.22	0.83	0.4	0.021 J	0.19 J	0.23 J	0.018 J	0.13 J	0.027 J	0.011 J	0.2	0.35	0.54	0.69	0.57
79-20-9	Methyl acetate	0.0001 U	0.000115 U	0.000105 U	0.00011 U	0.00012 U	0.00011 U	0.000105 U	0.000165 U	0.000135 U	0.000135 U	0.000105 U	0.000105 U	0.000115 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0007 U	0.0006 U	0.00065 U	0.022	0.012	0.0006 U	0.00095 U	0.0008 U	0.0008 U	0.0006 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.0006 U	0.00065 U	0.0006 U
108-10-1	Methyl isobutyl ketone	0.000375 U	0.000425 U	0.000385 U	0.000405 U	0.000445 U	0.00041 U	0.000385 U	0.00065 U	0.00055 U	0.00055 U	0.00038 U	0.000385 U	0.00042 U	0.00038 U	0.000395 U	0.00038 U	0.000395 U	0.00038 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.0006 U	0.00055 U	0.0006 U	0.00065 U	0.0006 U	0.00055 U	0.0009 U	0.00075 U	0.00075 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
108-88-3	Methylbenzene	0.000225 U	0.000255 U	0.00023 U	0.00024 U	0.013 J	0.0013 J	0.00023 U	0.00036 U	0.0003 U	0.0003 U	0.000225 U	0.00023 U	0.00025 U	0.000225 U	0.000235 U	0.000225 U	0.000235 U	0.000225 U
108-87-2	Methylcylohexane	0.000235 U	0.000265 U	0.00024 U	0.00025 U	0.003 J	0.000255 U	0.00024 U	0.00038 U	0.000315 U	0.000315 U	0.000235 U	0.00024 U	0.00026 U	0.000235 U	0.000245 U	0.000235 U	0.000245 U	0.000235 U
91-20-3	Naphthalene	0.00027 U	0.33	0.16 J	0.0029 U	5.5	0.15 U	0.097	0.27	0.38	0.061	0.21	0.00027 U	0.0003 U	0.17 J	0.45	0.078	0.14	0.13
98-95-3	Nitrobenzene	0.011 U	0.0115 U	0.011 U	0.0115 U	0.115 U	0.115 U	0.011 U	0.013 U	0.012 U	0.011 U	0.011 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0095 U	0.0105 U	0.01 UJ	0.0105 U	0.105 U	0.105 U	0.01 U	0.0115 U	0.0105 U	0.01 U	0.0095 U	0.0095 U	0.011 U	0.01 U	0.01 U	0.0095 U	0.0095 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.0065 U	0.006 U	0.0065 U	0.065 U	0.065 U	0.006 U	0.007 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 UJ	0.006 UJ
95-47-6	o-Xylene	0.000215 U	0.00024 U	0.00022 U	0.00023 U	0.014 J	0.0021 J	0.00022 U	0.000345 U	0.000285 U	0.000285 U	0.000215 U	0.00022 U	0.000235 U	0.000215 U	0.00022 U	0.000215 U	0.00022 U	0.000215 U
106-47-8	p-Chloroaniline	0.014 U	0.015 U	0.014 U	0.015 U	0.145 U	0.15 U	0.014 U	0.0165 U	0.015 U	0.014 U	0.014 U	0.014 U	0.0155 U	0.014 U	0.0145 U	0.014 UJ	0.014 U	0.014 U
87-86-5	Pentachlorophenol	0.00037 U	0.14 J	0.12 J	0.91	3.3 J	0.77	0.00038 U	0.66 J	0.99	0.072	0.91	0.00037 U	0.000415 U	2.6	13	0.85 J	3.1 J	2.8 J
85-01-8	Phenanthrene	0.19 J	0.71	0.55 J	0.89	460	74	0.22	0.5	0.78	0.059	0.18	0.009	0.0086	0.44	1.8	0.27	0.61	0.62
108-95-2	Phenol	0.0085 U	0.0095 U	0.009 U	0.009 U	0.09 U	0.095 UJ	0.009 U	0.0105 U	0.0095 U	0.009 U	0.0085 U	0.0085 U	0.0095 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U
100-01-6	p-Nitroaniline	0.0065 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.008 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.0075 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0065 U
129-00-0	Pyrene	0.032	4.9	1.7 J	6.1	430	140	0.24	1.7	2.5	0.12	1.2	0.000275 U	0.00031 U	2.8	15	1.8	4.6	4.9
7782-49-2	Selenium	0.405 U	0.435 U	0.44 U	0.465 U	0.465 U	0.47 U	0.43 U	0.5 U	0.46 U	0.445 U	0.435 U	0.43 U	0.49 U	0.44 U	0.445 U	0.43 U	0.43 U	0.445 U
7440-22-4	Silver	0.185 U	0.195 U	0.2 U	0.21 U	0.21 U	0.21 U	0.195 U	0.235 U	0.205 U	0.2 U	0.195 U	0.195 U	0.225 U	0.2 U	0.2 U	0.195 UJ	0.195 UJ	0.2 UJ
100-42-5	Styrene (monomer)	0.00023 U	0.00026 U	0.000235 U	0.000245 U	0.0044 J	0.00025 U	0.000235 U	0.00037 U	0.000305 U	0.000305 U	0.00023 U	0.000235 U	0.000255 U	0.00023 U	0.00024 U	0.00023 U	0.00024 U	0.00023 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.000195 U	0.000175 U	0.000185 U	0.0002 U	0.000185 U	0.000175 U	0.000275 U	0.00023 U	0.00023 U	0.00017 U	0.000175 U	0.00019 U	0.00017 U	0.00018 U	0.00017 U	0.00018 U	0.000175 U
127-18-4	Tetrachloroethylene	0.000215 U	0.00024 U	0.00022 U	0.00023 U	0.00025 U	0.00023 U	0.00022 U	0.000345 U	0.000285 U	0.000285 U	0.000215 U	0.00022 U	0.000235 U	0.000215 U	0.00022 U	0.000215 U	0.00022 U	0.000215 U
156-60-5	trans-1,2-Dichloroethene	0.0002 U	0.00023 U	0.000205 U	0.000215 U	0.00024 U	0.00022 U	0.000205 U	0.000325 U	0.00027 U	0.00027 U	0.000205 U	0.00021 U	0.000225 U	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.00018 U	0.000165 U	0.00017 U	0.00019 U	0.000175 U	0.000165 U	0.00026 U	0.000215 U	0.000215 U	0.00016 U	0.000165 U	0.00018 U	0.00016 U	0.000165 U	0.00016 U	0.000165 U	0.00016 U
75-25-2	Tribromomethane	0.000205 U	0.000235 U	0.00021 U	0.00022 U	0.000245 U	0.000225 U	0.000215 U	0.000335 U	0.00028 U	0.00028 U	0.00021 U	0.000215 U	0.00023 U	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.00021 U
79-01-6	Trichloroethylene	0.000215 U	0.00024 U	0.00022 U	0.00023 U	0.00025 U	0.00023 U	0.00022 U	0.000345 U	0.000285 U	0.000285 U	0.000215 U	0.00022 U	0.000235 U	0.000215 U	0.00022 U	0.000215 U	0.00022 U	0.000215 U
7440-62-2	Vanadium	2.5	6.9	13	9.9	9.3	5	5.8	2.4	2.9	6.8	5.5	3.8	9	1.8	7.9	2.8	2.3 J	1.6 J
75-01-4	Vinyl chloride	0.00013 U	0.000145 U	0.00013 U	0.00014 U	0.00015 U	0.00014 U	0.00013 U	0.000205 U	0.00017 U	0.00017 U	0.00013 U	0.00013 U	0.000145 U	0.00013 U	0.000135 U	0.00013 U	0.000135 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	2.3E-06 J	0.00141	0.000606	0.00487	0.0141	0.00228	7.68E-06			0.000248	0.00292					0.00816	0.0152	0.012186 J
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1.89E-05	0.0143	0.00905	0.0499	0.168	0.119	7.77E-05			0.002217 J	0.028					0.0734	0.145	0.112844
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	1.79E-07 J	9.93E-05	4.21E-05 J	0.000354	0.00105	0.000161	8.58E-07 J			1.45E-05	0.000233					0.000621	0.00109	0.001325
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	4.5E-08 U	4.47E-05 J	2.79E-05 J	0.000158	0.000491	4.96E-05 J	1.25E-07 U			5.95E-06	9.76E-05					0.000296	0.000559	0.000626
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	1.43E-07 J	0.000171	9.75E-05	0.000203	0.000341	0.000281	1.29E-07 U			2.42E-05	0.000119					0.000903	0.000872	0.000725
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	3.15E-08 U	3.29E-05 J	1.38E-05 J	6.63E-05 J	0.000105	1.39E-05 J	2.9E-08 U			5.47E-06	3.89E-05 J					0.000209	0.000263	0.000269
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	3.85E-07 J	0.000366	0.000224	0.000847	0.0021	0.00164	1.13E-06 J			5.09E-05	0.000483					0.00211	0.00324	0.00307 J
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	3.95E-08 U	1.16E-05 J	9.21E-06 J	0.000035 J	0.000118	1.32E-05 J	2.8E-08 U			3.32E-07 J	2.66E-05 J					6.84E-05	0.000106	8.58E-06
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	4.75E-07 J	0.000283	0.000179	0.000336	0.000507	0.000596	1.02E-06 J			6.01E-05	0.00019					0.00149	0.00142	0.001421
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	8E-09 U	0.00235 U	2.2E-06 U	1.03E-05 J	2.73E-05 J	2.16E-06 U	1.4E-07 J			8.7E-07 J	5.92E-06 J					2.84E-05 J	2.57E-05 J	2.5E-05
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	9.5E-09 U	6.24E-05 J	3.68E-05 J	4.63E-05 J	3.94E-05 J	1.08E-05 J	1.83E-07 J			9.01E-06	2.65E-05 J					0.00031	0.000296	0.000261
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	3.25E-08 U	6.49E-05 J	2.65E-05 J	0.000135	0.000193	2.55E-05 J	2.9E-08 U			2.31E-06 U	8.48E-05					0.000417	0.000529	0.000181
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	9E-09 U	0.000015 J	9.86E-06 J	3.56E-05 J	0.00009	7.04E-06 J	5.9E-08 U			1.15E-06 J	0.000026 J					8.02E-05	9.19E-05	4.18E-05
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	1E-08 U	1.12E-06 U	1.04E-06 U	0.00182 U	5.34E-06 J	1.09E-06 U	1.15E-08 U			3.47E-06	3.92E-06 J					0.000016 J	1.31E-05 J	1.18E-05
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	6E-09 U	0.003275 U	0.001705 U	5.42E-06 J	0.00321 U	1.64E-06 U	3.1E-08 U			9.56E-07 J	1.65E-06 U					2.66E-05	2.82E-05	2.13E-05
39001-02-0	Octachlorodibenzofuran	8.71E-06	0.00579	0.00277	0.0272	0.081	0.0156	5.1E-05			0.001211	0.0165					0.0298	0.0632	0.04605 J
3268-87-9	Octachlorodibenzo-p-dioxin	0.000148	0.129	0.069	0.649	1.94	0.44	0.000913			0.022319 J	0.332					0.828	1.97	0.760787 J

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS086CA	SS086DA	SS087AA	SS087BA	SS088AA	SS088BA	SS088CA	SS088DA	SS089AA	SS089BA	SS090AA	SS090BA	SS090BC	SS091AA	SS091BA	SS091CA	SS091DA	SS092AA
	Sample Date	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.00007 U	0.00007 U	0.000065 U	0.00007 U	0.00009 U	0.000065 U	0.00007 U	0.00007 UJ	0.00007 UJ	0.000105 U	0.00007 U	0.00007 U	0.000065 U	0.00009 U
79-34-5	1,1,2,2-Tetrachloroethane	3.45E-05 U	3.55E-05 U	0.000035 U	0.000035 U	0.000037 U	3.65E-05 U	3.55E-05 U	0.000036 U	4.95E-05 UJ	3.45E-05 UJ	0.000037 UJ	0.000036 UJ	3.85E-05 UJ	0.00006 U	0.000038 U	0.000037 U	0.000035 U	0.000048 U
79-00-5	1,1,2-Trichloroethane	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.00007 U	0.000075 U	0.0001 UJ	0.00007 UJ	0.000075 UJ	0.000075 UJ	0.00008 UJ	0.000115 U	0.000075 U	0.000075 U	0.00007 U	0.000095 U
75-34-3	1,1-Dichloroethane	0.000033 U	0.000034 U	3.35E-05 U	3.35E-05 U	3.55E-05 U	3.45E-05 U	0.000034 U	3.45E-05 U	0.000047 U	0.000033 U	3.55E-05 U	3.45E-05 UJ	3.65E-05 UJ	0.000055 U	3.65E-05 U	0.000035 U	3.35E-05 U	4.55E-05 U
75-35-4	1,1-Dichloroethylene	0.00009 U	0.000095 U	0.00009 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.00013 U	0.00009 U	0.0001 U	0.000095 UJ	0.0001 UJ	0.00015 U	0.0001 U	0.000095 U	0.00009 U	0.000125 U
120-82-1	1,2,4-Trichlorobenzene	0.00008 U	0.000085 U	0.00008 UJ	0.00008 U	0.000085 UJ	0.000085 UJ	0.00008 U	0.000085 U	0.000115 UJ	0.00008 UJ	0.000085 UJ	0.000085 UJ	0.00009 UJ	0.00013 UJ	0.00009 U	0.000085 U	0.00008 U	0.00011 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.000255 U	0.000265 U	0.00026 UJ	0.00026 U	0.000275 UJ	0.00027 UJ	0.000265 U	0.00027 U	0.000365 UJ	0.000255 UJ	0.000275 UJ	0.00027 UJ	0.000285 UJ	0.00042 UJ	0.000285 U	0.000275 U	0.00026 U	0.000355 UJ
106-93-4	1,2-Dibromoethane	2.95E-05 U	3.05E-05 U	2.95E-05 U	0.00003 U	3.15E-05 U	0.000031 U	0.00003 U	0.000031 U	0.000042 UJ	2.95E-05 UJ	3.15E-05 UJ	3.05E-05 UJ	3.25E-05 UJ	0.000048 U	3.25E-05 U	0.000031 U	2.95E-05 U	4.05E-05 U
95-50-1	1,2-Dichlorobenzene	0.000041 U	0.000042 U	0.000041 U	4.15E-05 U	4.35E-05 UJ	0.000043 UJ	0.000042 U	0.000043 U	0.00006 UJ	0.000041 UJ	0.000044 UJ	4.25E-05 UJ	4.55E-05 UJ	0.00007 UJ	0.000045 U	4.35E-05 U	4.15E-05 U	0.00006 UJ
107-06-2	1,2-Dichloroethane	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.000055 U	0.000075 U	0.000055 U	0.00006 U	0.000055 UJ	0.00006 UJ	0.00009 U	0.00006 U	0.00006 U	0.000055 U	0.000075 U
78-87-5	1,2-Dichloropropane	2.85E-05 U	0.000029 U	2.85E-05 U	2.85E-05 U	3.05E-05 U	0.00003 U	0.000029 U	2.95E-05 U	4.05E-05 U	2.85E-05 U	3.05E-05 U	2.95E-05 UJ	3.15E-05 UJ	4.65E-05 U	0.000031 U	0.00003 U	2.85E-05 U	0.000039 U
106-46-7	1,4-Dichlorobenzene	4.55E-05 U	0.000047 U	0.000046 U	0.00051 J	4.85E-05 UJ	0.000048 UJ	4.65E-05 U	4.75E-05 U	0.000065 UJ	4.55E-05 UJ	0.000049 UJ	4.75E-05 UJ	0.000055 UJ	0.000075 UJ	0.00005 U	4.85E-05 U	0.000046 U	0.000065 UJ
95-95-4	2,4,5-Trichlorophenol	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.009 U	0.0075 U	0.007 U	0.007 U	0.0075 U
88-06-2	2,4,6-Trichlorophenol	0.019 U	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 U	0.0205 U	0.0195 U	0.019 U	0.0205 U	0.0195 U	0.019 U	0.025 U	0.02 U	0.019 U	0.019 U	0.0205 U
120-83-2	2,4-Dichlorophenol	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
105-67-9	2,4-Dimethylphenol	0.01 U	0.0105 U	0.01 U	0.01 U	0.011 U	0.0105 U	0.01 U	0.011 U	0.026 J	0.01 U	0.011 U	0.0105 U	0.01 U	0.0135 U	0.0105 U	0.01 U	0.01 U	0.011 U
51-28-5	2,4-Dinitrophenol	0.0065 U	0.007 U	0.0065 UJ	0.0065 UJ	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 UJ	0.0065 UJ	0.007 UJ	0.0065 UJ	0.0065 UJ	0.0085 U	0.007 U	0.0065 U	0.0065 U	0.007 UJ
121-14-2	2,4-Dinitrotoluene	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.007 U	0.0055 U	0.0055 U	0.0055 U	0.006 U
606-20-2	2,6-Dinitrotoluene	0.019 U	0.02 U	0.019 U	0.019 U	0.02 U	0.02 U	0.019 U	0.0205 U	0.0195 U	0.019 U	0.0205 U	0.0195 U	0.019 U	0.025 U	0.02 U	0.019 U	0.019 U	0.0205 U
91-58-7	2-Chloronaphthalene	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.011 U	0.009 U	0.0085 U	0.0085 U	0.0095 U
95-57-8	2-Chlorophenol	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.01 U	0.0095 U	0.0105 U	0.01 U	0.0095 U	0.0125 U	0.01 U	0.0095 U	0.0095 U	0.0105 U
91-57-6	2-Methylnaphthalene	7.1 J	0.00085 U	0.042 J	0.043 J	0.21	0.035 J	0.016 J	0.018 J	0.39	0.23 J	0.27 J	0.08 U	0.08 U	0.36	0.096	0.00085 U	0.002 J	0.29 J
95-48-7	2-Methylphenol (o-cresol)	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0085 U	0.007 U	0.0065 U	0.0065 U	0.007 U
88-74-4	2-Nitroaniline	0.0115 U	0.012 U	0.0115 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.0155 U	0.012 U	0.012 U	0.012 U	0.0125 UJ
88-75-5	2-Nitrophenol	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.008 U	0.0075 U	0.008 U	0.0075 U	0.0075 U	0.01 U	0.008 U	0.0075 U	0.0075 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.018 U	0.0185 U	0.018 U	0.018 U	0.019 U	0.0185 U	0.018 U	0.0195 U	0.0185 U	0.018 U	0.0195 U	0.018 U	0.018 U	0.0235 U	0.0185 U	0.018 U	0.018 U	0.0195 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.007 U	0.009 U	0.0075 U	0.007 U	0.007 U	0.0075 U
99-09-2	3-Nitroaniline	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0049 UJ	0.0055 U	0.0049 UJ	0.0049 UJ	0.0055 UJ	0.0055 U	0.00495 U	0.0055 U	0.0055 UJ	0.0049 UJ	0.0055 UJ	0.005 UJ	0.00495 UJ	0.0065 UJ	0.0055 UJ	0.00495 U	0.00495 U	0.0055 UJ
101-55-3	4-Bromophenyl phenyl ether	0.0055 UJ	0.0055 U	0.0055 U	0.0055 U	0.0055 UJ	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.007 UJ	0.0055 UJ	0.0055 U	0.0055 U	0.006 U
59-50-7	4-Chloro-3-methylphenol	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.011 U	0.009 U	0.0085 U	0.0085 U	0.0095 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0115 U	0.012 U	0.0115 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.0125 U	0.012 U	0.0115 U	0.0125 U	0.012 U	0.012 U	0.0155 U	0.012 U	0.012 U	0.012 U	0.0125 U
106-44-5	4-Methylphenol (m/p-cresol)	0.014 U	0.0145 U	0.0135 U	0.0135 U	0.0145 U	0.0145 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.018 U	0.0145 U	0.014 U	0.014 U	0.015 U
100-02-7	4-Nitrophenol	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
83-32-9	Acenaphthene	27	1.6	0.014 UJ	0.0145 UJ	0.076	0.015 U	0.032 J	0.033 J	0.34 J	0.145 U	0.155 U	0.145 U	0.145 U	0.15	0.04 J	0.0015 U		0.155 U
208-96-8	Acenaphthylene	0.7	0.063	0.41 J	0.37 J	1.4	0.37	0.035	0.015	5.7	4.4	3.4	2.5	2.2	2.7	1.1	0.03	0.0058 J	2.3
67-64-1	Acetone	0.017 J	0.12 J	0.1 J	0.15	0.26	0.047 J	0.1 J	0.041 J	0.0019 UJ	0.00135 UJ	0.00145 UJ	0.0014 UJ	0.00145 UJ	0.00215 U	0.12 J	0.0041 J	0.003 J	0.00185 U
120-12-7	Anthracene	39	1.8	0.7	0.63	2	0.52	0.052	0.026	12	10	9.5	13	12	3.4	1.7	0.1	0.000325 U	3.7
7440-36-0	Antimony	0.17 UJ	0.18 UJ	0.175 U	0.165 U	0.96 J	0.73 J	0.38 J	0.175 UJ	2.1	1.3	1.8	0.69 J	0.51 J	4.5 J	0.74 J	0.185 UJ	1.75 UJ	2
7440-38-2	Arsenic	7.6	57	17 J	18 J	120	50	2.5	0.79	170 J	86 J	120 J	41 J	35 J	600	110	58 J	5.2 J	130 J
7440-39-3	Barium	3.5	11	6.4	12	28	26	15	14	32	24	23	13	11	58	37	43 J	47 J	22
71-43-2	Benzene	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.00022 U	0.000215 U	0.00021 U	0.000215 U	0.00029 U	0.000205 U	0.00022 U	0.000215 UJ	0.00023 UJ	0.000335 U	0.000225 U	0.00022 U	0.00021 U	0.000285 U
56-55-3	Benzo(a)anthracene	13	0.78	1.5 J	0.98 J	4.2	0.66	0.054	0.032	11	9.7	3.7	2.7	2.1	4.4	2.6	0.09	0.0096	4.9
50-32-8	Benzo(a)pyrene	4.6	0.26	1.1 J	0.87 J	5.2	0.89	0.054	0.036	9.8	8.1	4.8	2.9	2.4	5.7	3.1	0.089	0.011	5.9
205-99-2	Benzo(b)fluoranthene	6.7 J	0.48 J	2.3 J	1.9 J	12	1.7	0.15 J	0.079 J	21	16	9.2	5.4	4.4	13	7.3 J	0.19 J	0.028 J	11
191-24-2	Benzo(g,h,i)perylene	1.4	0.1	1.1 J	1 J	2.6	0.76	0.06	0.037	9	7.1	5.3	3.4	2.9	5.3	2.7	0.074	0.013	6.3
207-08-9	Benzo(k)fluoranthene	2.9	0.22	1.9 J	1.4 J	5.7	1.3	0.071	0.045	14	11	6.9	4.4	3.5	6.9	3	0.097	0.015	8.1
85-68-7	Benzyl butyl phthalate	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.01 U	0.0095 U	0.0105 U	0.023 J	0.0095 U	0.0125 U	0.01 U	0.0095 U	0.0095 U	0.0105 U
92-52-4	Biphenyl	2.4	0.085 U	0.08 U	0.08 U	0.085 U	0.085 U	0.08 U	0.085 U	0.085 U	0.08 U	0.085 U	0.08 U	0.08 U	0.105 U	0.085 U	0.08 U	0.08 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
111-44-4	Bis(2-chloroethyl)ether	0.008 U	0.0085 U	0.008 U	0.008 U	0.0085 UJ	0.0085 UJ	0.008 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0105 UJ	0.0085 UJ	0.008 U	0.008 U	0.0085 UJ
39638-32-9	Bis(2-chloroisopropyl) ether	0.011 U	0.0115 U	0.011 U	0.011 U	0.012 U	0.0115 U	0.0115 U	0.012 U	0.0115 U	0.011 U	0.012 U	0.0115 U	0.011 U	0.0145 U	0.0115 U	0.0115 U	0.0115 UJ	0.012 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.0085 U	0.009 U	0.033 J	0.037 J	0.009 U	0.009 U	0.0085 U	0.009 U	0.062 J	0.035 J	0.033 J	0.026 J	0.027 J	0.011 U	0.009 U	0.0085 U	0.0085 U	0.032 J
75-27-4	Bromodichloromethane	0.000155 U	0.00016 U	0.000155 U	0.000155 U	0.000165 U	0.00016 U	0.000155 U	0.00016 U	0.00022 U	0.000155 U	0.000165 U	0.00016 UJ	0.00017 UJ	0.00025 U	0.00017 U	0.000165 U	0.000155 U	0.00021 U
74-83-9	Bromomethane	0.00017 UJ	0.000175 UJ	0.00017 U	0.00017 U	0.00018 U	0.000175 U	0.000175 UJ	0.000175 UJ	0.00024 U	0.00017 U	0.00018 U	0.000175 UJ	0.00019 UJ	0.000275 U	0.000185 U	0.00018 UJ	0.00017 UJ	0.000235 U
7440-43-9	Cadmium	0.145 U	0.155 U	0.15 U	0.14 U	0.36 J	0.155 U	0.15 U	0.15 U	0.145 U	0.14 U	0.165 U	0.15 U	0.14 U	0.8	0.155 U	0.16 U	1.5 U	0.35 J
86-74-8	Carbazole	12	0.98 J	0.084 J	0.099 J	0.73 J	0.2	0.0085 U	0.009 U	1.2	0.73	0.67	0.43	0.34	1.6 J	0.86 J	0.0085 U	0.0085 U	0.49
75-15-0	Carbon disulfide	0.00085 U	0.0009 U	0.00085 U	0.00085 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0012 U	0.00085 U	0.0009 U	0.0009 UJ	0.00095 UJ	0.0014 U	0.00095 U	0.0009 U	0.00085 U	0.0012 U
56-23-5	Carbon tetrachloride	0.000185 U	0.00019 U	0.000185 U	0.000185 U	0.000195 U	0.000195 U	0.00019 U	0.000195 U	0.00026 U	0.000185 U	0.0002 U	0.00019 UJ	0.000205 UJ	0.0003 U	0.000205 U	0.000195 U	0.000185 U	0.000255 U
108-90-7	Chlorobenzene	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000215 U	0.00022 U	0.0003 UJ	0.00021 UJ	0.000225 UJ	0.00022 UJ	0.000235 UJ	0.000345 U	0.00023 U	0.000225 U	0.000215 U	0.00029 U
124-48-1	Chlorodibromomethane	0.00013 U	0.000135 U	0.000135 U	0.000135 U	0.00014 U	0.00014 U	0.000135 U	0.00014 U	0.00019 UJ	0.000135 UJ	0.000145 UJ	0.00014 UJ	0.000145 UJ	0.000215 U	0.000145 U	0.00014 U	0.000135 U	0.000185 U
75-00-3	Chloroethane	0.00019 U	0.000195 U	0.00019 U	0.00019 U	0.000205 U	0.0002 U	0.000195 U	0.0002 U	0.00027 U	0.00019 U	0.000205 U	0.0002 UJ	0.00021 UJ	0.00031 U	0.00021 U	0.0002 U	0.00019 U	0.00026 U
67-66-3	Chloroform	0.00018 U	0.000185 U	0.00018 U	0.00018 U	0.00019 U	0.00019 U	0.000185 U	0.00019 U	0.000255 U	0.00018 U	0.000195 U	0.000185 UJ	0.0002 UJ	0.000295 U	0.000195 U	0.00019 U	0.00018 U	0.00025 U
74-87-3	Chloromethane	0.000235 U	0.000245 U	0.00024 U	0.00024 U	0.000255 U	0.00025 U	0.00024 U	0.00025 U	0.000335 U	0.000235 U	0.000255 U	0.000245 UJ	0.000265 UJ	0.000385 U	0.00026 U	0.00025 U	0.00024 U	0.000325 U
7440-47-3	Chromium	3.9	8.9	34 J	32 J	190 J	45 J	6	7.3	260 J	110 J	180 J	43 J	38 J	880	100 J	7.4	27	230 J
218-01-9	Chrysene	12	0.73	2.1 J	1.4 J	5.9	0.96	0.074	0.039	15	13	5.7	3.9	2.9	7.5	4.6	0.13	0.016	7.2
156-59-2	cis-1,2-Dichloroethylene	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.000145 U	0.00014 U	0.000145 U	0.000195 U	0.00014 U	0.00015 U	0.000145 UJ	0.000155 UJ	0.000225 U	0.00015 U	0.000145 U	0.00014 U	0.00019 U
10061-01-5	cis-1,3-Dichloropropene	0.000155 U	0.00016 U	0.000155 U	0.000155 U	0.000165 U	0.00016 U	0.000155 U	0.00016 U	0.00022 UJ	0.000155 UJ	0.000165 UJ	0.00016 UJ	0.00017 UJ	0.00025 U	0.00017 U	0.000165 U	0.000155 U	0.00021 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS086CA	SS086DA	SS087AA	SS087BA	SS088AA	SS088BA	SS088CA	SS088DA	SS089AA	SS089BA	SS090AA	SS090BA	SS090BC	SS091AA	SS091BA	SS091CA	SS091DA	SS092AA
	Sample Date	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	30-Nov-06	09-Dec-06	09-Dec-06	11-Dec-06	11-Dec-06	30-Nov-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0-0.25	0.25-0.5	0.25-0.5	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	3.7	1.4	17	18	110	24	2	1.6	160	73	120	30	27	490	66	4.9 J	5.2 J	130
110-82-7	Cyclohexane	0.0002 U	0.000205 U	0.0002 U	0.000205 U	0.000215 U	0.00021 U	0.000205 U	0.00021 U	0.000285 U	0.0002 U	0.000215 U	0.00021 UJ	0.000225 UJ	0.000325 U	0.00022 U	0.000215 U	0.0002 U	0.000275 U
53-70-3	Dibenzo(a,h)anthracene	0.63	0.047	0.34 J	0.31 J	0.91	0.23	0.019	0.012	3.1	2.4	1.4	0.79	0.69	1.8	1 J	0.027	0.0035 J	2
132-64-9	Dibenzofuran	37	1.3 J	0.029 J	0.025 J	0.21	0.042 J	0.007 U	0.0075 U	0.26	0.14 J	0.18 J	0.076 J	0.061 J	0.37	0.12 J	0.007 U	0.007 U	0.12 J
75-09-2	Dichloromethane	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.00022 U	0.000215 U	0.00021 U	0.000215 U	0.00029 U	0.000205 U	0.00022 U	0.000215 UJ	0.00023 UJ	0.000335 U	0.000225 U	0.00022 U	0.00021 U	0.000285 U
84-66-2	Diethyl phthalate	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0085 U	0.007 U	0.0065 U	0.0065 U	0.007 U
131-11-3	Dimethyl phthalate	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.007 U	0.0055 U	0.0055 U	0.0055 U	0.006 U
84-74-2	di-n-Butyl-phthalate	0.032 UJ	0.0335 U	0.032 U	0.032 U	0.034 UJ	0.0335 U	0.0325 U	0.0345 U	0.033 U	0.032 U	0.0345 U	0.0325 U	0.032 U	0.042 UJ	0.0335 UJ	0.0325 U	0.0325 U	0.0345 U
117-84-0	di-n-Octyl-phthalate	0.008 U	0.0085 U	0.008 U	0.008 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.0085 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.0105 U	0.0085 U	0.008 U	0.008 U	0.0085 U
100-41-4	Ethylbenzene	0.00022 U	0.00023 U	0.000225 U	0.000225 U	0.000235 U	0.00023 U	0.000225 U	0.00023 U	0.000315 UJ	0.00022 UJ	0.00024 UJ	0.00023 UJ	0.000245 UJ	0.00036 U	0.000245 U	0.000235 U	0.000225 U	0.000305 U
206-44-0	Fluoranthene	66	3.5	3.2	1.9	6.3	1	0.084	0.04	20	17	6.5	4.4	3.3	5.9	5	0.13	0.019	7.1
86-73-7	Fluorene	32	1.8	0.008 UJ	0.008 UJ	0.067	0.022 J	0.043 J	0.024 J	0.46	0.34 J	0.26 J	0.2 J	0.21 J	0.14	0.045	0.00085 U		0.085 U
87-68-3	Hexachloro-1,3-butadiene	0.009 U	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
118-74-1	Hexachlorobenzene	0.00435 UJ	0.00455 U	0.0043 U	0.00435 U	0.00465 UJ	0.00455 U	0.0044 U	0.0047 U	0.0045 U	0.00435 U	0.0047 U	0.0044 U	0.00435 U	0.006 UJ	0.00455 UJ	0.0044 U	0.0044 U	0.0047 U
77-47-4	Hexachlorocyclopentadiene	0.006 UJ	0.006 U	0.006 UJ	0.006 UJ	0.0065 UJ	0.006 UJ	0.006 U	0.0065 U	0.006 UJ	0.006 UJ	0.0065 UJ	0.006 UJ	0.006 UJ	0.008 UJ	0.006 UJ	0.006 U	0.006 U	0.0065 UJ
67-72-1	Hexachloroethane	0.009 UJ	0.0095 U	0.009 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.01 U	0.0095 U	0.009 U	0.01 U	0.009 U	0.009 U	0.012 U	0.0095 U	0.009 U	0.009 U	0.01 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	0.11	1.3 J	1.2 J	4.7	0.87	0.056	0.035	11	8.4	6	3.7	3.1	5.1	2.6 J	0.071	0.012	7.2
98-82-8	Isopropylbenzene	0.00024 U	0.00025 U	0.000245 U	0.000245 U	0.00026 UJ	0.000255 UJ	0.00025 U	0.000255 U	0.000345 UJ	0.00024 UJ	0.00026 UJ	0.00025 UJ	0.00027 UJ	0.000395 UJ	0.000265 U	0.000255 U	0.000245 U	0.000335 UJ
7439-92-1	Lead	62	6.2	4.3	5	32	25	5.9	13	41	27	30	13	11	88	21	5.2 J	22 J	29
136777-61-2	m,p-Xylenes	0.000455 U	0.00047 U	0.00046 U	0.00046 U	0.000485 U	0.00048 U	0.000465 U	0.000475 U	0.00065 UJ	0.000455 UJ	0.00049 UJ	0.000475 UJ	0.00055 UJ	0.00075 U	0.0005 U	0.000485 U	0.00046 U	0.00065 U
541-73-1	m-Dichlorobenzene	0.000026 U	0.000027 U	2.65E-05 U	2.65E-05 U	0.000028 UJ	2.75E-05 UJ	0.000027 U	2.75E-05 U	3.75E-05 UJ	2.65E-05 UJ	2.85E-05 UJ	2.75E-05 UJ	0.000029 UJ	0.000043 UJ	0.000029 U	0.000028 U	2.65E-05 U	3.65E-05 UJ
7439-97-6	Mercury	0.081	0.044	0.14	0.17	0.88	0.14	0.036	0.069	0.8	0.42	0.5	0.27	0.26	1.3	0.26	0.059	0.015 J	0.53 J
79-20-9	Methyl acetate	0.0001 U	0.000105 U	0.0001 U	0.000105 UJ	0.00011 U	0.000105 U	0.000105 U	0.000105 U	0.000145 U	0.0001 U	0.00011 U	0.000105 UJ	0.000115 UJ	0.000165 U	0.00011 U	0.00011 U	0.0001 U	0.00014 U
78-93-3	Methyl ethyl ketone	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.00085 U	0.0006 U	0.00065 U	0.0006 UJ	0.00065 UJ	0.00095 U	0.00065 U	0.00065 U	0.0006 U	0.0008 U
108-10-1	Methyl isobutyl ketone	0.00037 U	0.000385 U	0.000375 U	0.000375 U	0.0004 U	0.00039 U	0.00038 U	0.00039 U	0.00055 UJ	0.00037 UJ	0.0004 UJ	0.000385 UJ	0.000415 UJ	0.00065 U	0.00041 U	0.000395 U	0.000375 U	0.00055 U
591-78-6	Methyl n-butyl ketone	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.00055 U	0.00075 UJ	0.00055 UJ	0.0006 UJ	0.00055 UJ	0.0006 UJ	0.0009 U	0.0006 U	0.0006 U	0.00055 U	0.00075 U
108-88-3	Methylbenzene	0.00022 U	0.00023 U	0.000225 U	0.00058 J	0.000235 U	0.00023 U	0.000225 U	0.00023 U	0.000315 UJ	0.00022 UJ	0.00024 UJ	0.00023 UJ	0.000245 UJ	0.00036 U	0.000245 U	0.000235 U	0.000225 U	0.000305 U
108-87-2	Methylcylohexane	0.00023 U	0.00024 U	0.000235 U	0.000235 U	0.000245 U	0.000245 U	0.000235 U	0.00024 U	0.00033 UJ	0.00023 UJ	0.00025 UJ	0.00024 UJ	0.000255 UJ	0.00038 U	0.000255 U	0.000245 U	0.000235 U	0.00032 U
91-20-3	Naphthalene	1.4 J	0.000275 U	0.065 J	0.071 J	0.31	0.051	0.022 J	0.014 J	0.51	0.3 J	0.36 J	0.23 J	0.19 J	0.52	0.15	0.000285 U	0.0038 J	0.39
98-95-3	Nitrobenzene	0.0105 U	0.011 U	0.0105 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.0115 U	0.011 U	0.0105 U	0.0115 U	0.011 U	0.0105 U	0.014 U	0.011 U	0.011 U	0.011 U	0.0115 U
621-64-7	n-Nitroso-di-n-Propylamine	0.0095 U	0.01 U	0.0095 U	0.0095 U	0.01 U	0.01 U	0.0095 U	0.0105 U	0.01 U	0.0095 U	0.0105 U	0.01 U	0.0095 U	0.0125 U	0.01 U	0.0095 U	0.0095 U	0.0105 U
86-30-6	n-Nitrosodiphenylamine	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 UJ	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.008 UJ	0.006 UJ	0.006 U	0.006 U	0.0065 U
95-47-6	o-Xylene	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000215 U	0.00022 U	0.0003 UJ	0.00021 UJ	0.000225 UJ	0.00022 UJ	0.000235 UJ	0.000345 U	0.00023 U	0.000225 U	0.000215 U	0.00029 U
106-47-8	p-Chloroaniline	0.014 U	0.0145 U	0.0135 U	0.0135 U	0.0145 U	0.0145 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U	0.014 U	0.018 U	0.0145 U	0.014 U	0.014 U	0.015 U
87-86-5	Pentachlorophenol	1.7	0.12	0.59	0.53	2.4 J	0.58 J	0.026 J	0.015 J	8.6	12	2.5 J	1.9 J	1.5 J	8.1 J	3.2	0.051	0.0091 J	4.1
85-01-8	Phenanthrene	110	6.7	0.45	0.34	0.98	0.23	0.15 J	0.023 J	3.3	2.3	1.2	0.65 J	0.55 J	1.6	0.71	0.00185 U		1.4
108-95-2	Phenol	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.0085 U	0.011 U	0.009 U	0.0085 U	0.0085 U	0.0095 U
100-01-6	p-Nitroaniline	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.0065 U	0.0085 U	0.007 U	0.0065 U	0.0065 U	0.007 U
129-00-0	Pyrene	49	2.7	3 J	1.9 J	7.2	1.1	0.092	0.049	19	16	6.9	4.5	3.4	7.9	6.8	0.19	0.022	7.9
7782-49-2	Selenium	0.42 UJ	0.45 UJ	0.43 U	0.405 U	0.455 U	0.455 U	0.425 UJ	0.44 UJ	0.415 U	0.405 U	0.47 U	0.44 U	0.41 U	1.2 J	0.45 U	0.46 U	4.35 U	0.47 U
7440-22-4	Silver	0.19 U	0.205 U	0.195 U	0.185 U	0.205 UJ	0.205 UJ	0.195 U	0.2 U	0.19 U	0.185 U	0.215 U	0.2 U	0.185 U	0.25 UJ	0.205 UJ	0.21 U	1.95 U	0.21 U
100-42-5	Styrene (monomer)	0.000225 U	0.00073 J	0.00023 U	0.00023 U	0.00024 U	0.000235 U	0.00023 U	0.000235 U	0.00032 UJ	0.000225 UJ	0.000245 UJ	0.000235 UJ	0.00025 UJ	0.00037 U	0.00025 U	0.00024 U	0.00023 U	0.00031 U
1634-04-4	tert-Butyl methyl ether	0.00017 U	0.000175 U	0.00017 U	0.00017 U	0.00018 U	0.000175 U	0.000175 U	0.000175 U	0.00024 U	0.00017 U	0.00018 U	0.000175 UJ	0.00019 UJ	0.000275 U	0.000185 U	0.00018 U	0.00017 U	0.000235 U
127-18-4	Tetrachloroethylene	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000215 U	0.00022 U	0.0003 UJ	0.00021 UJ	0.000225 UJ	0.00022 UJ	0.000235 UJ	0.000345 U	0.00023 U	0.000225 U	0.000215 U	0.00029 U
156-60-5	trans-1,2-Dichloroethene	0.0002 U	0.000205 U	0.0002 U	0.000205 U	0.000215 U	0.00021 U	0.000205 U	0.00021 U	0.000285 U	0.0002 U	0.000215 U	0.00021 UJ	0.000225 UJ	0.000325 U	0.00022 U	0.000215 U	0.0002 U	0.000275 U
10061-02-6	trans-1,2-Dichloropropene	0.00016 U	0.000165 U	0.00016 U	0.00016 U	0.00017 U	0.000165 U	0.00016 U	0.000165 U	0.000225 UJ	0.00016 UJ	0.00017 UJ	0.000165 UJ	0.000175 UJ	0.00026 U	0.000175 U	0.00017 U	0.00016 U	0.00022 U
75-25-2	Tribromomethane	0.000205 U	0.00021 U	0.000205 U	0.00021 U	0.00022 U	0.000215 U	0.00021 U	0.000215 U	0.00029 UJ	0.000205 UJ	0.00022 UJ	0.000215 UJ	0.00023 UJ	0.000335 U	0.000225 U	0.00022 U	0.00021 U	0.000285 U
79-01-6	Trichloroethylene	0.00021 U	0.000215 U	0.00021 U	0.000215 U	0.000225 U	0.00022 U	0.000215 U	0.00022 U	0.0003 U	0.00021 U	0.000225 U	0.00022 UJ	0.000235 UJ	0.000345 U	0.00023 U	0.000225 U	0.000215 U	0.00029 U
7440-62-2	Vanadium	1 J	6.3 J	0.46 UJ	2	2.6	2.9	3 J	2.7 J	1.4	0.435 UJ	1.7	1.9 J	1.3 J	1.5	3.3	4 J	11 J	3.2
75-01-4	Vinyl chloride	0.000125 U	0.00013 U	0.00013 U	0.00013 U	0.000135 U	0.000135 U	0.00013 U	0.000135 U	0.00018 U	0.000125 U	0.000135 U	0.000135 UJ	0.00014 UJ	0.00021 U	0.00014 U	0.000135 U	0.00013 U	0.000175 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000533	0.000159			0.0165	0.002619	0.000187	8.22E-05										
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.00697	0.001634			0.147	0.015559 J	0.001541	0.000659										
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	4.14E-05	1E-05			0.00136	0.000217	1.26E-05	5.14E-06										
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	1.45E-05	4.52E-06 J			0.000516	9.53E-05	3.96E-06 J	1.89E-06 J										
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	2.67E-05	1.36E-05			0.00136	0.00021	1.56E-05	6.14E-06										
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	6.4E-06	1.59E-06 U			0.000429 J	7.73E-05	3.47E-06 J	1.53E-06 J										
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000089	3.66E-05			0.0035	0.000582	3.74E-05	1.54E-05										
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	2.67E-06	3.41E-07 U			0.000146	2.84E-06 J	8.7E-08 U	4.65E-08 U										
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	4.21E-05	3.75E-05			0.00209	0.000513	3.61E-05	1.49E-05										
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	9.19E-07 J	4.11E-07 J			5.38E-05 J	8.83E-06 J	4.93E-07 J	1.97E-07 J										
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	7.62E-06	5.72E-06			0.000445	7.45E-05	4.88E-06 J	1.85E-06 J										
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	1.17E-05	6.93E-06			0.000827	0.000119	8.82E-06	3.56E-06 J										
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	2.24E-06 J	8.05E-07 J			0.000161	1.33E-05	7.16E-07 J	2.97E-07 J										
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	8.25E-07 J	1.65E-07 U			2.33E-05 J	3.14E-06	4.55E-08 U	2.4E-08 U										
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	8.54E-07	6.54E-07 J			4.12E-05	5.86E-06	1.99E-07 U	7.8E-08 U										
39001-02-0	Octachlorodibenzofuran	0.00341	0.000924 J			0.0782	0.009811 J	0.000961 J	0.000388										
3268-87-9	Octachlorodibenzo-p-dioxin	0.0706	0.017748 J			1.69	0.184493	0.017447 J	0.007625 J										

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS092BA	SS093AA	SS093BA	SS094AA	SS094AB	SS094BA	SS094CA	SS094DA	SS095AA	SS095BA	SS095CA	SS095DA	SS096AA	SS096BA	SS096CA	SS096DA	SS097AA	SS097BA
	Sample Date	30-Nov-06	01-Dec-06	01-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.00007 U	0.00007 U	0.000065 U	0.00008 U	0.000085 U	0.00007 U	0.000065 U	0.000065 U	0.000075 U	0.00007 U	0.000065 U	0.00007 U	0.00007 U	0.00007 U	0.000065 U	0.000065 U	0.000095 U	0.00007 U
79-34-5	1,1,2,2-Tetrachloroethane	3.85E-05 U	0.000036 U	3.55E-05 U	0.000042 U	0.000045 U	0.000037 U	0.000035 U	0.000035 U	0.000039 U	3.65E-05 U	0.000036 U	0.000037 U	0.000038 U	3.65E-05 U	0.000035 U	3.55E-05 U	0.000055 U	3.85E-05 U
79-00-5	1,1,2-Trichloroethane	0.00008 U	0.000075 U	0.00007 U	0.000085 U	0.00009 U	0.000075 U	0.00007 U	0.00007 U	0.00008 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.00007 U	0.00007 U	0.0001 U	0.00008 U
75-34-3	1,1-Dichloroethane	0.000037 U	3.45E-05 U	0.000034 U	0.00004 U	0.000043 U	0.000035 U	0.000033 U	0.000033 U	0.000037 U	0.000035 U	3.45E-05 U	3.55E-05 U	3.65E-05 U	0.000035 U	3.35E-05 U	0.000034 U	0.000048 U	3.65E-05 U
75-35-4	1,1-Dichloroethylene	0.0001 U	0.000095 U	0.000095 U	0.00011 U	0.00012 U	0.000095 U	0.00009 U	0.00009 U	0.0001 U	0.000095 U	0.000095 U	0.000095 U	0.0001 U	0.000095 U	0.00009 U	0.000095 U	0.00013 U	0.0001 U
120-82-1	1,2,4-Trichlorobenzene	0.00009 UJ	0.000085 U	0.000085 U	0.000095 U	0.000105 U	0.000085 U	0.00008 U	0.00008 UJ	0.00009 UJ	0.000085 U	0.000085 U	0.000085 U	0.00009 U	0.000085 U	0.00008 U	0.00008 U	0.000115 U	0.00009 U
96-12-8	1,2-Dibromo-3-chloropropane	0.00029 UJ	0.00027 U	0.000265 U	0.00031 U	0.000335 U	0.000275 U	0.00026 U	0.00026 UJ	0.00029 UJ	0.00027 U	0.000265 U	0.000275 U	0.000285 U	0.00027 U	0.00026 U	0.000265 U	0.000375 U	0.000285 U
106-93-4	1,2-Dibromoethane	0.000033 U	3.05E-05 U	3.05E-05 U	3.55E-05 U	0.000038 U	3.15E-05 U	2.95E-05 U	2.95E-05 U	0.000033 U	0.000031 U	3.05E-05 U	3.15E-05 U	3.25E-05 U	0.000031 U	0.00003 U	0.00003 U	4.25E-05 U	3.25E-05 U
95-50-1	1,2-Dichlorobenzene	4.55E-05 UJ	4.25E-05 U	0.000042 U	4.95E-05 U	0.000055 U	4.35E-05 U	0.000041 U	0.000041 UJ	0.000046 UJ	0.000043 U	4.25E-05 U	4.35E-05 U	0.000045 U	0.000043 U	4.15E-05 U	0.000042 U	0.00006 U	4.55E-05 U
107-06-2	1,2-Dichloroethane	0.00006 U	0.000055 U	0.000055 U	0.000065 U	0.00007 U	0.00006 U	0.000055 U	0.000055 U	0.00006 U	0.000055 U	0.000055 U	0.00006 U	0.00006 U	0.00006 U	0.000055 U	0.000055 U	0.00008 U	0.00006 U
78-87-5	1,2-Dichloropropane	3.15E-05 U	2.95E-05 U	2.95E-05 U	3.45E-05 U	0.000037 U	0.00003 U	2.85E-05 U	2.85E-05 U	0.000032 U	0.00003 U	2.95E-05 U	3.05E-05 U	3.15E-05 U	0.00003 U	2.85E-05 U	0.000029 U	0.000041 U	3.15E-05 U
106-46-7	1,4-Dichlorobenzene	0.000055 UJ	4.75E-05 U	0.000047 U	0.000055 U	0.00006 U	4.85E-05 U	0.000046 U	0.00072 J	0.000055 UJ	0.000048 U	4.75E-05 U	4.85E-05 U	0.00005 U	0.000048 U	0.000046 U	4.65E-05 U	0.00007 U	0.000055 U
95-95-4	2,4,5-Trichlorophenol	0.0075 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.07 U	0.008 U	0.0075 U	0.007 U	0.0075 U	0.075 U	0.075 U	0.007 U	0.007 U	0.0075 U	0.0075 U
88-06-2	2,4,6-Trichlorophenol	0.021 U	0.02 U	0.0195 U	0.0195 U	0.019 U	0.02 U	0.019 U	0.19 U	0.021 U	0.02 U	0.0195 U	0.02 U	0.21 U	0.2 U	0.019 U	0.0195 U	0.02 U	0.02 U
120-83-2	2,4-Dichlorophenol	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 U	0.095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
105-67-9	2,4-Dimethylphenol	0.011 U	0.0105 U	0.0105 U	0.0105 U	0.01 U	0.011 U	0.01 U	0.1 U	0.0115 U	0.0105 U	0.0105 U	0.011 U	0.11 U	0.105 U	0.01 U	0.0105 U	0.0105 U	0.0105 U
51-28-5	2,4-Dinitrophenol	0.007 UJ	0.007 UJ	0.0065 UJ	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U
121-14-2	2,4-Dinitrotoluene	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
606-20-2	2,6-Dinitrotoluene	0.021 U	0.02 U	0.0195 U	0.0195 U	0.019 U	0.02 U	0.019 U	0.19 U	0.021 U	0.02 U	0.0195 U	0.02 U	0.21 U	0.2 U	0.019 U	0.0195 U	0.02 U	0.02 U
91-58-7	2-Chloronaphthalene	0.0095 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.085 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.095 U	0.09 U	0.0085 U	0.009 U	0.009 U	0.009 U
95-57-8	2-Chlorophenol	0.0105 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.0095 U	0.095 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.105 U	0.1 U	0.0095 U	0.01 U	0.01 U	0.01 U
91-57-6	2-Methylnaphthalene	0.3 J	0.064 J	0.0165 U	0.04	0.031 J	0.04	13 J	610 J	0.84	0.061	0.0023 J	0.0048	0.28 J	0.085 U	0.016 U	0.008 U	0.0085 U	0.00085 U
95-48-7	2-Methylphenol (o-cresol)	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U
88-74-4	2-Nitroaniline	0.013 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.0125 U	0.0115 U	0.115 U	0.013 U	0.0125 U	0.012 U	0.0125 U	0.13 U	0.125 U	0.012 U	0.012 U	0.0125 UJ	0.0125 UJ
88-75-5	2-Nitrophenol	0.0085 U	0.008 U	0.008 U	0.0075 U	0.0075 U	0.008 U	0.0075 U	0.075 U	0.0085 U	0.008 U	0.008 U	0.008 U	0.085 U	0.08 U	0.0075 U	0.0075 U	0.008 U	0.008 U
91-94-1	3,3'-Dichlorobenzidine	0.02 U	0.0185 U	0.0185 U	0.0185 U	0.018 U	0.019 U	0.018 U	0.18 U	0.02 U	0.019 U	0.0185 U	0.019 U	0.2 U	0.19 U	0.018 U	0.0185 U	0.019 U	0.019 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.0075 U	0.0075 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.007 U	0.07 U	0.008 U	0.0075 U	0.007 U	0.0075 U	0.075 U	0.075 U	0.007 U	0.007 U	0.0075 U	0.0075 U
99-09-2	3-Nitroaniline	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 U	0.095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.005 U	0.00495 U	0.0055 U	0.0049 UJ	0.049 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.055 U	0.00495 U	0.005 U	0.0055 U	0.0055 U
101-55-3	4-Bromophenyl phenyl ether	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 UJ	0.055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
59-50-7	4-Chloro-3-methylphenol	0.0095 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.085 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.095 U	0.09 U	0.0085 U	0.009 U	0.009 U	0.009 U
7005-72-3	4-Chlorophenyl phenyl ether	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.0125 U	0.0115 U	0.115 U	0.013 U	0.0125 U	0.012 U	0.0125 U	0.13 U	0.125 U	0.012 U	0.012 U	0.0125 U	0.0125 U
106-44-5	4-Methylphenol (m/p-cresol)	0.015 U	0.0145 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.14 U	0.0155 U	0.0145 U	0.014 U	0.0145 U	0.15 U	0.145 U	0.014 U	0.014 U	0.0145 U	0.0145 U
100-02-7	4-Nitrophenol	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 UJ	0.095 UJ	0.009 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ
83-32-9	Acenaphthene	0.16 U	0.0295 U	0.0295 U	0.03 J	0.0145 U	0.044 J	350 J	610 J	0.08 U	0.015 U	0.0031 J	0.02	0.52 J	0.47 J	0.0285 U	0.0145 U	0.015 U	0.0015 U
208-96-8	Acenaphthylene	2.7	0.84	0.37	0.32	0.3	0.7	1.7	5.9	2.1	0.22	0.014	0.01	8.6	7.1	0.68	0.22	0.097	0.0043 J
67-64-1	Acetone	0.0015 U	0.0014 U	0.00135 U	0.0055 J	0.0049 J	0.0014 U	0.02 J	0.055 J	0.0015 U	0.098 J	0.0014 U	0.13 J	0.00145 U	0.0014 U	0.00135 U	0.00135 U	0.0019 U	0.00145 U
120-12-7	Anthracene	4.3	1.8	0.93	0.69	0.65	2.3	370	1300	4.6	0.57	0.043	0.04	11	11	1.2	0.33	0.11	0.0059
7440-36-0	Antimony	1.7	0.63 J	0.52 J	0.18 UJ	0.175 UJ	0.19 UJ	0.17 UJ	0.16 UJ	160	190	42	4.3	11	2.2	0.175 U	0.18 U	0.185 U	0.18 UJ
7440-38-2	Arsenic	130 J	57 J	16 J	30	25	28	6.5	1.3	3600	720	430	280	450	140	31	16	2.7	1.9
7440-39-3	Barium	31	14	23	8.7 J	6.3 J	9.3	13	8.8	27	6.7	5.7	15	37	11	8.8	17	27	8.7
71-43-2	Benzene	0.00023 U	0.000215 U	0.00021 U	0.00025 U	0.000265 U	0.00022 U	0.0026 J	0.019	0.00023 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U	0.00021 U	0.00021 U	0.0003 U	0.00023 U
56-55-3	Benzo(a)anthracene	5.7	1.8	0.86	0.77	0.62	1.2	15	610	3.1	0.24	0.0063	0.0096	23	26	1.7	0.7	0.17	0.0073
50-32-8	Benzo(a)pyrene	6.2	1.9	1.1	0.79	0.61	1.5	6.3	210	5.2	0.5	0.014	0.03	26	25	1.8	0.65	0.22	0.0085
205-99-2	Benzo(b)fluoranthene	11	3.8	2	2 J	1.4 J	3.4 J	12	350	8.7	0.79	0.02	0.037	41	37	2.4	0.91	0.32	0.014
191-24-2	Benzo(g,h,i)perylene	6.7	2	1.1	0.73	0.66	1.4	3.5	9	6.5	0.6	0.019	0.026	19	15	1.4	0.47	0.18	0.0091
207-08-9	Benzo(k)fluoranthene	9.5	2.6	1.5	0.92	0.73	1.7	5.8	13	7.2	0.64	0.000355 U	0.023	37	27	2.1	0.78	0.28	0.013
85-68-7	Benzyl butyl phthalate	0.026 J	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.0095 U	0.095 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.105 U	0.1 U	0.0095 U	0.01 U	0.01 U	0.01 U
92-52-4	Biphenyl	0.09 U	0.085 U	0.085 U	0.08 UJ	0.08 UJ	0.085 UJ	4.8	55	0.09 U	0.085 U	0.085 U	0.085 U	0.9 U	0.85 U	0.08 U	0.08 U	0.085 U	0.085 U
111-91-1	Bis(2-chlorethoxy)methane	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 U	0.095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
111-44-4	Bis(2-chloroethyl)ether	0.009 UJ	0.0085 UJ	0.0085 UJ	0.008 U	0.008 U	0.0085 U	0.008 U	0.08 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.09 U	0.085 U	0.008 U	0.008 U	0.0085 U	0.0085 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.0125 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.012 U	0.011 U	0.11 U	0.0125 U	0.012 U	0.0115 U	0.012 U	0.125 UJ	0.12 UJ	0.0115 UJ	0.0115 UJ	0.012 UJ	0.012 UJ
117-81-7	Bis(2-ethylhexyl)phthalate	0.025 J	0.009 U	0.009 U	0.009 U	0.024 J	0.056 J	0.0085 U	0.085 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.095 U	0.09 U	0.0085 U	0.009 U	0.009 U	0.009 U
75-27-4	Bromodichloromethane	0.00017 U	0.00016 U	0.00016 U	0.000185 U	0.0002 U	0.000165 U	0.000155 U	0.000155 U	0.00017 U	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.00016 U	0.000155 U	0.000155 U	0.000225 U	0.00017 U
74-83-9	Bromomethane	0.00019 U	0.000175 U	0.000175 U	0.000205 UJ	0.00022 UJ	0.00018 UJ	0.00017 UJ	0.00017 UJ	0.00019 UJ	0.00018 UJ	0.000175 UJ	0.00018 UJ	0.000185 U	0.00018 U	0.00017 U	0.000175 U	0.000245 U	0.00019 U
7440-43-9	Cadmium	0.37 J	0.15 U	0.15 U	0.155 U	0.15 U	0.16 U	0.145 U	0.14 U	1.3	0.15 U	0.155 U	0.16 U	0.76	0.16 U	0.15 U	0.15 U	0.46 J	0.155 U
86-74-8	Carbazole	0.61	0.27	0.16 J	0.074 J	0.065 J	0.26	19	99	0.86	0.098 J	0.009 U	0.009 U	1.5 J	0.98 J	0.11 J	0.009 U	0.037 J	0.009 U
75-15-0	Carbon disulfide	0.00095 U	0.0009 U	0.0009 U	0.00105 U	0.0011 U	0.0009 U	0.00085 U	0.00085 UJ	0.00095 U	0.0009 U	0.0009 U	0.0009 U	0.00095 U	0.0009 U	0.00085 U	0.0009 U	0.00125 U	0.00095 U
56-23-5	Carbon tetrachloride	0.000205 U	0.00019 U	0.00019 U	0.000225 U	0.00024 U	0.000195 U	0.000185 U	0.000185 U	0.000205 U	0.000195 U	0.00019 U	0.000195 U	0.000205 U	0.000195 U	0.000185 U	0.00019 U	0.00027 U	0.000205 U
108-90-7	Chlorobenzene	0.000235 U	0.00022 U	0.00022 U	0.000255 U	0.000275 U	0.000225 U	0.00021 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000225 U	0.00023 U	0.000225 U	0.000215 U	0.000215 U	0.000305 U	0.000235 U
124-48-1	Chlorodibromomethane	0.00015 U	0.00014 U	0.000135 U	0.00016 U	0.00017 U	0.00014 U	0.000135 U	0.000135 U	0.00015 U	0.00014 U	0.00014 U	0.00014 U	0.000145 U	0.00014 U	0.000135 U	0.000135 U	0.00019 U	0.000145 U
75-00-3	Chloroethane	0.00021 U	0.0002 U	0.000195 U	0.00023 U	0.000245 U	0.0002 U	0.00019 UJ	0.00019 UJ	0.000215 U	0.0002 U	0.000195 U	0.000205 U	0.00021 U	0.0002 U	0.00019 U	0.000195 U	0.000275 U	0.00021 U
67-66-3	Chloroform	0.0002 U	0.000185 U	0.000185 U	0.000215 U	0.000235 U	0.00019 U	0.00018 U	0.00018 U	0.0002 U	0.00019 U	0.000185 U	0.00019 U	0.0002 U	0.00019 U	0.00018 U	0.000185 U	0.00026 U	0.0002 U
74-87-3	Chloromethane	0.000265 U	0.000245 U	0.000245 U	0.000285 U	0.000305 U	0.00025 U	0.00024 U	0.00024 U	0.000265 U	0.00025 U	0.000245 U	0.000255 U	0.00026 U	0.00025 U	0.00024 U	0.00024 U	0.000345 U	0.000265 U
7440-47-3	Chromium	200 J	87 J	14 J	39	35	34	11	7.4	3700	1700	420	190	650 J	140 J	32 J	33 J	5.1	3.8
218-01-9	Chrysene	8.2	2.6	1.5	1	0.83	1.5	14	520	4.8	0.34	0.0074	0.015	27	29	1.6	0.66	0.26	0.013
156-59-2	cis-1,2-Dichloroethylene	0.000155 U	0.000145 U	0.00014 U	0.000165 U	0.00018 U	0.000145 U	0.00014 U	0.00014 U	0.000155 U	0.000145 U	0.000145 U	0.000145 U	0.00015 U	0.000145 U	0.00014 U	0.00014 U	0.0002 U	0.000155 U
10061-01-5	cis-1,3-Dichloropropene	0.00017 U	0.00016 U	0.00016 U	0.000185 U	0.0002 U	0.000165 U	0.000155 U	0.000155 U	0.00017 U	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.00016 U	0.000155 U	0.000155 U	0.000225 U	0.00017 U

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS092BA	SS093AA	SS093BA	SS094AA	SS094AB	SS094BA	SS094CA	SS094DA	SS095AA	SS095BA	SS095CA	SS095DA	SS096AA	SS096BA	SS096CA	SS096DA	SS097AA	SS097BA
	Sample Date	30-Nov-06	01-Dec-06	01-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	06-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06	07-Dec-06
	Sample Depth (feet)	0.25-0.5	0-0.25	0.25-0.5	0-0.25	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	120	46	4.3	23	20	24	7.1	1.2	2200	130	94	2.2	510 J	79 J	13 J	5.5 J	24	4.3
110-82-7	Cyclohexane	0.000225 U	0.00021 U	0.000205 U	0.00024 U	0.00026 U	0.000215 U	0.0002 U	0.0002 UJ	0.000225 U	0.00021 U	0.00021 U	0.000215 U	0.00022 U	0.00021 U	0.000205 U	0.000205 U	0.00029 U	0.00022 U
53-70-3	Dibenzo(a,h)anthracene	2.1	0.63	0.37	0.25 J	0.21 J	0.5 J	1.4	3.7	2	0.19	0.0066	0.0081	6.6	5.7	0.45	0.15	0.05	0.0024 J
132-64-9	Dibenzofuran	0.13 J	0.04 J	0.019 J	0.025 J	0.026 J	0.039 J	29	270	0.27	0.027 J	0.007 U	0.021 J	0.24 J	0.075 U	0.018 J	0.007 U	0.0075 U	0.0075 U
75-09-2	Dichloromethane	0.00023 U	0.000215 U	0.00021 U	0.00025 U	0.000265 U	0.00022 U	0.000205 U	0.000205 U	0.00023 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U	0.00021 U	0.00021 U	0.0003 U	0.00023 U
84-66-2	Diethyl phthalate	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U
131-11-3	Dimethyl phthalate	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.055 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.06 U	0.055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.0355 U	0.0335 U	0.033 U	0.0325 U	0.0325 U	0.034 U	0.032 UJ	0.32 U	0.0355 U	0.034 U	0.033 U	0.034 U	0.355 U	0.34 U	0.0325 U	0.0325 U	0.034 U	0.034 U
117-84-0	di-n-Octyl-phthalate	0.009 U	0.0085 U	0.0085 U	0.008 U	0.008 U	0.0085 U	0.008 U	0.08 U	0.009 U	0.0085 U	0.0085 U	0.0085 U	0.09 U	0.085 U	0.008 U	0.008 U	0.0085 U	0.0085 U
100-41-4	Ethylbenzene	0.000245 U	0.00023 U	0.00023 U	0.00027 U	0.000285 U	0.000235 U	0.033	0.0011	0.00025 U	0.000235 U	0.00023 U	0.00091 J	0.000245 U	0.000235 U	0.000225 U	0.000225 U	0.00032 U	0.000245 U
206-44-0	Fluoranthene	9.5	2.8	1.2	1.1	0.97	1.8	790	790	4.1	0.33	0.0067	0.032	24	24	1.4	0.51	0.3	0.015
86-73-7	Fluorene	0.09 U	0.056 J	0.0165 U	0.032 J	0.027 J	0.065	330	520	0.16 J	0.022 J	0.0032 J	0.048	0.3 J	0.31 J	0.016 U	0.008 U	0.0085 U	0.00085 U
87-68-3	Hexachloro-1,3-butadiene	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 U	0.095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
118-74-1	Hexachlorobenzene	0.0048 U	0.00455 U	0.0045 U	0.00445 UJ	0.0044 UJ	0.00465 UJ	0.00435 UJ	0.0435 U	0.00485 U	0.0046 U	0.0045 U	0.00465 U	0.048 U	0.046 U	0.0044 U	0.00445 U	0.0046 U	0.0046 U
77-47-4	Hexachlorocyclopentadiene	0.0065 UJ	0.006 UJ	0.006 UJ	0.006 U	0.006 U	0.0065 U	0.006 U	0.06 U	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.065 U	0.065 U	0.006 U	0.006 U	0.0065 U	0.0065 U
67-72-1	Hexachloroethane	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.009 U	0.0095 U	0.009 U	0.09 U	0.01 U	0.0095 U	0.0095 U	0.0095 U	0.1 U	0.095 U	0.009 U	0.0095 U	0.0095 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	7.7	2.3	1.2	0.71	0.62	1.4	3.7	10	7.3	0.71	0.024	0.03	22	18	1.6	0.52	0.21	0.01
98-82-8	Isopropylbenzene	0.00027 UJ	0.00025 U	0.00025 U	0.000295 U	0.000315 U	0.000255 U	0.000245 U	0.000245 UJ	0.00027 UJ	0.000255 U	0.00025 U	0.00074 J	0.000265 U	0.000255 U	0.000245 U	0.00025 U	0.00035 U	0.00027 U
7439-92-1	Lead	30	11	11	3.7	3.3	5.8	6	4.9	65	7.2	4.5	13	78	17	4.4	6.5	180 J	24 J
136777-61-2	m,p-Xylenes	0.00055 U	0.000475 U	0.00047 U	0.00055 U	0.0006 U	0.000485 U	0.082	0.003	0.00055 U	0.00048 U	0.000475 U	0.000485 U	0.0005 U	0.00048 U	0.00046 U	0.000465 U	0.0007 U	0.00055 U
541-73-1	m-Dichlorobenzene	2.95E-05 UJ	2.75E-05 U	0.000027 U	0.000032 U	0.000034 U	0.000028 U	2.65E-05 U	2.65E-05 UJ	2.95E-05 UJ	2.75E-05 U	2.75E-05 U	0.000028 U	0.000029 U	0.000028 U	2.65E-05 U	0.000027 U	0.000038 U	0.000029 U
7439-97-6	Mercury	0.51	0.073 J	0.046 J	0.058	0.058	0.12	0.18 J	0.068 J	3.2	0.45	0.031	0.12	0.5 J	0.25 J	0.045 J	0.045 J	0.21	0.09
79-20-9	Methyl acetate	0.000115 U	0.000105 U	0.000105 U	0.00012 U	0.00013 U	0.00011 U	0.0001 U	0.0001 U	0.000115 U	0.000105 U	0.000105 U	0.00011 U	0.00011 U	0.000105 U	0.000105 U	0.000105 U	0.000145 U	0.00011 U
78-93-3	Methyl ethyl ketone	0.00065 U	0.0006 U	0.0006 U	0.0007 U	0.00075 U	0.00065 U	0.0006 U	0.0035 J	0.00065 U	0.00065 U	0.0006 U	0.02	0.00065 U	0.00065 U	0.0006 U	0.0006 U	0.00085 U	0.00065 U
108-10-1	Methyl isobutyl ketone	0.000415 U	0.00039 U	0.000385 U	0.00045 U	0.000485 U	0.000395 U	0.000375 U	0.000375 U	0.000415 U	0.00039 U	0.000385 U	0.0004 U	0.00041 U	0.000395 U	0.000375 U	0.00038 U	0.00055 U	0.000415 U
591-78-6	Methyl n-butyl ketone	0.0006 U	0.00055 U	0.00055 U	0.00065 U	0.0007 U	0.0006 U	0.00055 U	0.00055 U	0.0006 U	0.00055 U	0.00055 U	0.0006 U	0.0006 U	0.0006 U	0.00055 U	0.00055 U	0.0008 U	0.0006 U
108-88-3	Methylbenzene	0.000245 U	0.00023 U	0.00023 U	0.00027 U	0.000285 U	0.000235 U	0.035	0.00071	0.00025 U	0.000235 U	0.00023 U	0.000235 U	0.000245 U	0.000235 U	0.000225 U	0.000225 U	0.00032 U	0.000245 U
108-87-2	Methylcylohexane	0.00026 U	0.00024 U	0.00024 U	0.00028 U	0.0003 U	0.000245 U	0.000235 U	0.00087 J	0.00026 U	0.000245 U	0.00024 U	0.000245 U	0.000255 U	0.000245 U	0.000235 U	0.000235 U	0.000335 U	0.000255 U
91-20-3	Naphthalene	0.41	0.085	0.038 J	0.066 J	0.038 J	0.046	14 J	1100 J	0.78	0.056	0.00028 U	0.01	0.4	0.25 J	0.0055 U	0.00275 U	0.00285 U	0.000285 U
98-95-3	Nitrobenzene	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0115 U	0.0105 U	0.105 U	0.012 U	0.011 U	0.011 U	0.0115 U	0.115 U	0.11 U	0.011 U	0.011 U	0.011 UJ	0.011 UJ
621-64-7	n-Nitroso-di-n-Propylamine	0.0105 U	0.01 U	0.01 U	0.01 U	0.0095 U	0.01 U	0.0095 U	0.095 U	0.0105 U	0.01 U	0.01 U	0.01 U	0.105 U	0.1 U	0.0095 U	0.01 U	0.01 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.0065 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0065 U	0.006 UJ	0.06 U	0.0065 U	0.0065 U	0.006 U	0.0065 U	0.065 U	0.065 U	0.006 U	0.006 U	0.0065 U	0.0065 U
95-47-6	o-Xylene	0.000235 U	0.00022 U	0.00022 U	0.000255 U	0.000275 U	0.000225 U	0.038	0.0015	0.000235 U	0.00022 U	0.00022 U	0.000225 U	0.00023 U	0.000225 U	0.000215 U	0.000215 U	0.000305 U	0.000235 U
106-47-8	p-Chloroaniline	0.015 U	0.0145 U	0.014 U	0.014 U	0.014 U	0.0145 U	0.014 U	0.14 U	0.0155 U	0.0145 U	0.014 U	0.0145 U	0.15 U	0.145 U	0.014 U	0.014 U	0.0145 U	0.0145 U
87-86-5	Pentachlorophenol	5.1	0.83	0.15 J	0.18 J	0.17 J	0.75	2.9	120 J	15	1	0.026 J	0.042	9	2.9 J	0.58 J	0.00375 U	0.18 J	0.017 J
85-01-8	Phenanthrene	1.6	0.43	0.14 J	0.15	0.14	0.23	1300	1800	1.6	0.11	0.005 J	0.045	1.7	1.3	0.071 J	0.018 U	0.081	0.0052 J
108-95-2	Phenol	0.0095 U	0.009 U	0.009 U	0.009 U	0.0085 U	0.009 U	0.0085 U	0.085 U	0.0095 U	0.009 U	0.009 U	0.009 U	0.095 U	0.09 U	0.0085 U	0.009 U	0.009 U	0.009 U
100-01-6	p-Nitroaniline	0.007 U	0.007 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.0065 U	0.065 U	0.007 U	0.007 U	0.0065 U	0.007 U	0.07 U	0.07 U	0.0065 U	0.0065 U	0.007 U	0.007 U
129-00-0	Pyrene	9.8	3	1.6	1.3	1	2	620	550	4.1	0.34	0.0061	0.026	44	37	2.2	0.85	0.29	0.014
7782-49-2	Selenium	0.465 U	0.44 U	0.44 U	0.445 UJ	0.43 UJ	0.465 UJ	0.425 U	0.4 U	0.47 UJ	0.425 UJ	0.45 U	0.46 U	0.48 U	0.455 U	0.43 U	0.44 U	0.46 U	0.45 U
7440-22-4	Silver	0.21 U	0.2 U	0.2 U	0.2 U	0.195 U	0.21 U	0.19 U	0.18 U	0.61	0.195 U	0.205 U	0.21 U	0.215 U	0.205 U	0.195 U	0.2 U	0.205 U	0.205 U
100-42-5	Styrene (monomer)	0.000255 U	0.000235 U	0.000235 U	0.000275 U	0.000295 U	0.00024 U	0.0097	0.11	0.000255 U	0.00024 U	0.000235 U	0.00024 U	0.00025 U	0.00024 U	0.00023 U	0.00023 U	0.00033 U	0.00025 U
1634-04-4	tert-Butyl methyl ether	0.00019 U	0.000175 U	0.000175 U	0.000205 U	0.00022 U	0.00018 U	0.00017 U	0.00017 U	0.00019 U	0.00018 U	0.000175 U	0.00018 U	0.000185 U	0.00018 U	0.00017 U	0.000175 U	0.000245 U	0.00019 U
127-18-4	Tetrachloroethylene	0.000235 U	0.00022 U	0.00022 U	0.000255 U	0.000275 U	0.000225 U	0.00021 U	0.00021 UJ	0.000235 U	0.00022 U	0.00022 U	0.000225 U	0.00023 U	0.000225 U	0.000215 U	0.000215 U	0.000305 U	0.000235 U
156-60-5	trans-1,2-Dichloroethene	0.000225 U	0.00021 U	0.000205 U	0.00024 U	0.00026 U	0.000215 U	0.0002 U	0.0002 U	0.000225 U	0.00021 U	0.00021 U	0.000215 U	0.00022 U	0.00021 U	0.000205 U	0.000205 U	0.00029 U	0.00022 U
10061-02-6	trans-1,2-Dichloropropene	0.000175 U	0.000165 U	0.000165 U	0.00019 U	0.000205 U	0.00017 U	0.00016 U	0.00016 U	0.00018 U	0.000165 U	0.000165 U	0.00017 U	0.000175 U	0.00017 U	0.00016 U	0.00016 U	0.00023 U	0.000175 U
75-25-2	Tribromomethane	0.00023 U	0.000215 U	0.00021 U	0.00025 U	0.000265 U	0.00022 U	0.000205 U	0.000205 UJ	0.00023 U	0.000215 U	0.000215 U	0.00022 U	0.000225 U	0.000215 U	0.00021 U	0.00021 U	0.0003 U	0.00023 U
79-01-6	Trichloroethylene	0.000235 U	0.00022 U	0.00022 U	0.000255 U	0.000275 U	0.000225 U	0.00021 U	0.00021 U	0.000235 U	0.00022 U	0.00022 U	0.000225 U	0.00023 U	0.000225 U	0.000215 U	0.000215 U	0.000305 U	0.000235 U
7440-62-2	Vanadium	5.4	0.47 U	3.9	2.8 J	2.3 J	2.4 J	0.455 U	0.43 U	0.5 UJ	0.46 UJ	0.48 UJ	8.6	5.3	2	2.5	7	0.49 UJ	0.48 UJ
75-01-4	Vinyl chloride	0.00014 U	0.000135 U	0.00013 U	0.000155 U	0.000165 U	0.000135 U	0.00013 U	0.00013 U	0.000145 U	0.000135 U	0.00013 U	0.000135 U	0.00014 U	0.000135 U	0.00013 U	0.00013 U	0.000185 U	0.00014 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran		0.00656	0.0011	0.001215	0.001524	0.00371	0.00358	0.00298	0.0382	0.00203	4.84E-05	6.21E-05	0.0411	0.002784 J	0.00131 J	0.000509	0.000379	1.96E-05
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		0.0528	0.00741	0.011169	0.012503	0.0306	0.0355	0.0328	0.252	0.014	0.000356	0.000438	0.299	0.02671 J	0.0102	0.003203 J	0.002564 J	7.95E-05
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran		0.000584	9.32E-05	6.34E-05	6.95E-05	0.000221	0.000231	0.000185	0.00227	0.000125	3.33E-06 U	3.31E-06 J	0.00269	0.000248 J	8.34E-05	3.17E-05	2.38E-05	6.35E-07 U
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran		0.00025	0.000051	3.3E-05	3.87E-05	0.000108	0.0001	8.76E-05	0.00146	0.000115	2.26E-06 J	1.98E-06 J	0.00107	9.79E-05 J	3.17E-05	1.3E-05	0.000018	1.88E-06 J
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		0.000597	0.000063	0.000112	0.000106	0.000231	0.000134	5.68E-05	0.00156	0.000131	3.38E-06 J	3.95E-06 J	0.00254	0.000205	8.23E-05	3.31E-05	1.82E-05	5.78E-07 J
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran		0.000182	2.98E-05	2.86E-05	3.75E-05	7.01E-05	4.08E-05 J	1.86E-05	0.00053	3.83E-05 J	7.75E-07 J	1.24E-06 J	0.000734	7.82E-05 J	2.37E-05	9.73E-06	1.07E-05	8.21E-07 J
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		0.00143	0.000186	0.000252	0.000281	0.000686	0.000587	0.000455	0.00723	0.000418	1.06E-05	1.26E-05	0.00928	0.001048	0.000303	0.000129	6.66E-05	2.45E-06 J
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran		8.53E-05	1.26E-05	4.22E-07 U	1.9E-06 U	2.33E-05	2.18E-05	1.77E-05	0.000251	1.48E-05 J	1.24E-07 U	6.55E-08 U	0.000263	2.04E-05 J	8.11E-06	4.92E-07 J	4.14E-07 J	2.55E-08 U
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		0.000836	0.000109	0.00026	0.000273	0.000396	0.000209	6.57E-05	0.0031	0.000225	8.66E-06	1.01E-05	0.0045	0.000375	0.000151	6.42E-05	5.16E-05	1.67E-06 J
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran		2.57E-05 J	3.25E-06	3.23E-06 J	3.51E-06 J	7.94E-06	5.04E-06	3.13E-06	6.06E-05 J	0.000005 J	2E-08 U	1.42E-07 J	7.95E-05	9.84E-06	2.85E-06	1.29E-06 J	1.13E-06 J	1.33E-07 J
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin		0.000188	1.74E-05	3.69E-05	3.78E-05	6.73E-05	0.000026	4.79E-06	0.000507	4.66E-05 J	6.26E-07 U	1.74E-06 J	0.000739	7.92E-05	2.53E-05	1.12E-05	5.77E-06 J	2.56E-07 J
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran		0.000358	0.000059	6.22E-05	6.24E-05	0.000134	8.04E-05	3.78E-05	0.0011	6.82E-05	8.02E-07 J	9.28E-07 J	0.00143	0.000175	4.91E-05	8.63E-06	8.12E-06	5.22E-07 J
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran		8.35E-05	2.19E-05	5.04E-06	5.02E-06	2.55E-05	1.72E-05	1.13E-05	0.000191	1.28E-05 J	1.42E-07 U	2.62E-07 J	0.000278	1.26E-05	9.57E-06	1.69E-06 J	3.25E-06 J	3.28E-07 J
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran		5.71E-06 J	1.08E-06	9.6E-07	9.65E-07	1.76E-06	1.13E-06	5.37E-07 J	4.47E-05	3.93E-06 J	2.05E-08 U	1.03E-07 U	3.37E-05	2.22E-06	1.08E-06	5.56E-07 J	4.86E-07 U	3.85E-07 U
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin		1.72E-05	7.5E-07	2.78E-06	2.98E-06	4.72E-06	2.22E-06	1.18E-06	4.47E-05	5.53E-06 J	1.7E-08 U	4.7E-08 U	4.97E-05	7.83E-06 J	1.61E-06	7.03E-07 J	3.6E-07 J	1.75E-08 U
39001-02-0	Octachlorodibenzofuran		0.0288	0.00528	0.007795	0.008728	0.0162	0.0186	0.0185	0.148	0.00762	0.000173	0.000261	0.161	0.015112 J	0.00596	0.003139 J	0.001686	4.85E-05
3268-87-9	Octachlorodibenzo-p-dioxin		0.526	0.0802	0.114969 J	0.12597 J	0.342 J	0.463	0.398 J	2.44	0.138	0.002961	0.003852	2.75	0.217716 J	0.101	0.03306 J	0.022686 J	0.000734

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS097CA	SS097DA	SS098AA	SS098BA	SS098CA	SS098DA	SS099AA	SS099BA	SS099CA	SS099DA	SS100AA	SS100BA	SS100CA	SS100DA	SS100DB	SS101AA	SS101BA	SS101CA
	Sample Date	07-Dec-06	07-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000075 U	0.000065 U	0.000065 U	0.00008 U	0.000065 U	0.00007 U	0.00007 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.000075 U	0.000065 U	0.00008 U	0.000075 U	0.000145 U	0.00008 U	0.000065 U
79-34-5	1,1,2,2-Tetrachloroethane	0.00004 U	3.55E-05 U	3.55E-05 U	0.000042 U	3.55E-05 U	3.65E-05 U	0.000037 U	0.000039 U	0.000041 U	4.05E-05 U	0.000041 U	4.05E-05 U	3.55E-05 UJ	0.000042 UJ	4.05E-05 UJ	0.00008 U	4.35E-05 U	3.55E-05 UJ
79-00-5	1,1,2-Trichloroethane	0.00008 U	0.00007 U	0.00007 U	0.000085 U	0.00007 U	0.000075 U	0.000075 U	0.00008 U	0.000085 U	0.00008 U	0.000085 U	0.00008 U	0.00007 UJ	0.000085 UJ	0.00008 UJ	0.00016 U	0.00009 U	0.00007 UJ
75-34-3	1,1-Dichloroethane	3.85E-05 U	0.000034 U	3.35E-05 U	0.00004 U	0.000034 U	0.000035 U	0.000035 U	0.000037 U	0.000039 U	3.85E-05 U	3.95E-05 U	3.85E-05 U	0.000034 U	0.00004 U	0.000039 U	0.00008 U	4.15E-05 U	3.35E-05 U
75-35-4	1,1-Dichloroethylene	0.000105 U	0.000095 U	0.000095 U	0.00011 U	0.000095 U	0.000095 U	0.000095 U	0.0001 U	0.000105 U	0.000105 U	0.00011 U	0.000105 U	0.000095 U	0.00011 U	0.000105 U	0.000205 U	0.000115 U	0.000095 U
120-82-1	1,2,4-Trichlorobenzene	0.000095 U	0.00008 U	0.00008 U	0.000095 U	0.000085 U	0.000085 U	0.000085 U	0.00009 U	0.000095 U	0.000095 U	0.000095 U	0.000095 UJ				0.00018 UJ	0.0001 UJ	0.00008 UJ
96-12-8	1,2-Dibromo-3-chloropropane	0.0003 U	0.000265 U	0.000265 U	0.00031 U	0.000265 U	0.00027 U	0.000275 U	0.00029 U	0.000305 U	0.0003 U	0.000305 U	0.0003 UJ				0.0006 UJ	0.000325 UJ	0.000265 UJ
106-93-4	1,2-Dibromoethane	0.000034 U	0.00003 U	0.00003 U	3.55E-05 U	3.05E-05 U	0.000031 U	0.000031 U	0.000033 U	3.45E-05 U	3.45E-05 U	0.000035 U	3.45E-05 U	0.00003 UJ	3.55E-05 UJ	3.45E-05 UJ	0.00007 U	0.000037 U	0.00003 UJ
95-50-1	1,2-Dichlorobenzene	4.75E-05 U	0.000042 U	0.00052 J	4.95E-05 U	0.000042 U	0.000043 U	4.35E-05 U	0.000046 U	4.85E-05 U	0.000048 U	4.85E-05 U	0.000048 UJ				0.000095 UJ	0.000055 UJ	4.15E-05 UJ
107-06-2	1,2-Dichloroethane	0.000065 U	0.000055 U	0.000055 U	0.000065 U	0.000055 U	0.000055 U	0.00006 U	0.00006 U	0.000065 U	0.000065 U	0.000065 U	0.000065 U	0.000055 U	0.000065 U	0.000065 U	0.00012 U	0.00007 U	0.000055 U
78-87-5	1,2-Dichloropropane	0.000033 U	0.000029 U	0.000029 U	3.45E-05 U	2.95E-05 U	0.00003 U	0.00003 U	0.000032 U	3.35E-05 U	0.000033 U	0.000034 U	0.000033 U	0.000029 U	3.45E-05 U	3.35E-05 U	0.000065 U	3.55E-05 U	0.000029 U
106-46-7	1,4-Dichlorobenzene	0.000055 U	4.65E-05 U	4.65E-05 U	0.000055 U	0.000047 U	0.000048 U	4.85E-05 U	0.000055 U	0.000055 U	0.000055 U	0.000055 U	0.000055 UJ				0.000105 UJ	0.00006 UJ	4.65E-05 UJ
95-95-4	2,4,5-Trichlorophenol	0.008 U	0.007 U	0.007 U	0.0085 U	0.007 U	0.0075 U	0.0075 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.075 U	0.07 U	0.085 U	0.08 U	0.009 U	0.09 U	0.07 U
88-06-2	2,4,6-Trichlorophenol	0.022 U	0.0195 U	0.0195 U	0.023 U	0.0195 U	0.02 U	0.02 U	0.021 U	0.0225 U	0.022 U	0.0215 U	0.2 U	0.195 U	0.23 U	0.22 U	0.025 U	0.24 U	0.195 U
120-83-2	2,4-Dichlorophenol	0.0105 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.095 U	0.095 U	0.11 UJ	0.105 UJ	0.012 U	0.115 U	0.095 U
105-67-9	2,4-Dimethylphenol	0.0115 U	0.0105 U	0.0105 U	0.0125 U	0.0105 U	0.17 J	0.011 U	0.0115 U	0.012 U	0.012 U	0.0115 U	0.11 U	0.105 U	3.8 J	2.3 J	0.0135 U	0.125 U	0.105 U
51-28-5	2,4-Dinitrophenol	0.0075 U	0.0065 U	0.0065 U	0.008 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.07 U	0.065 U	0.08 U	0.075 U	0.0085 U	0.08 U	0.065 U
121-14-2	2,4-Dinitrotoluene	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.055 U	0.055 U	0.065 U	0.06 U	0.007 U	0.065 U	0.055 U
606-20-2	2,6-Dinitrotoluene	0.022 U	0.0195 U	0.0195 U	0.023 U	0.0195 U	0.02 U	0.02 U	0.021 U	0.0225 U	0.022 U	0.0215 U	0.2 U	0.195 U	0.23 U	0.22 U	0.025 U	0.24 U	0.195 U
91-58-7	2-Chloronaphthalene	0.01 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.09 U	0.09 U	0.105 U	0.1 U	0.011 U	0.11 U	0.09 U
95-57-8	2-Chlorophenol	0.011 U	0.01 U	0.01 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.1 U	0.1 U	0.115 U	0.11 U	0.0125 U	0.12 U	0.1 U
91-57-6	2-Methylnaphthalene	0.00095 U	0.0008 U	0.026	0.012	0.00085 U	0.0085 U	0.031	0.25	0.0095 U	0.0048	0.13	0.2	150	250	230	0.28	0.28	590 J
95-48-7	2-Methylphenol (o-cresol)	0.0075 U	0.0065 U	0.0065 U	0.008 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.07 U	0.065 U	0.08 U	0.075 U	0.0085 U	0.08 U	0.065 U
88-74-4	2-Nitroaniline	0.0135 U	0.012 U	0.012 U	0.014 U	0.012 U	0.0125 U	0.0125 U	0.013 U	0.014 U	0.0135 U	0.0135 U	0.125 U	0.12 U	0.14 U	0.135 U	0.0155 U	0.145 U	0.12 U
88-75-5	2-Nitrophenol	0.0085 U	0.0075 U	0.0075 U	0.009 U	0.008 U	0.008 U	0.008 U	0.0085 U	0.009 U	0.009 U	0.0085 U	0.08 U	0.08 U	0.09 UJ	0.09 UJ	0.01 U	0.095 U	0.075 U
91-94-1	3,3'-Dichlorobenzidine	0.0205 U	0.0185 U	0.0185 U	0.022 U	0.0185 U	0.019 U	0.019 U	0.02 U	0.021 U	0.021 U	0.0205 U	0.19 U	0.185 U	0.22 U	0.21 U	0.0235 U	0.225 U	0.185 U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.008 U	0.007 U	0.007 U	0.0085 U	0.007 U	0.0075 U	0.0075 U	0.008 U	0.0085 U	0.008 U	0.008 U	0.075 U	0.07 U	0.085 UJ	0.08 UJ	0.009 U	0.09 U	0.07 U
99-09-2	3-Nitroaniline	0.0105 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.095 U	0.095 U	0.11 U	0.105 U	0.012 U	0.115 U	0.095 U
534-52-1	4,6-Dinitro-2-Methylphenol	0.006 U	0.005 U	0.005 U	0.006 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.006 U	0.006 U	0.055 U	0.055 UJ	0.06 UJ	0.06 UJ	0.0065 U	0.065 U	0.055 UJ
101-55-3	4-Bromophenyl phenyl ether	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.055 U	0.055 UJ	0.065 UJ	0.06 UJ	0.007 U	0.065 U	0.055 UJ
59-50-7	4-Chloro-3-methylphenol	0.01 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.09 U	0.09 U	0.105 UJ	0.1 UJ	0.011 U	0.11 U	0.09 U
7005-72-3	4-Chlorophenyl phenyl ether	0.0135 U	0.012 U	0.012 U	0.014 U	0.012 U	0.0125 U	0.0125 U	0.013 U	0.014 U	0.0135 U	0.0135 U	0.125 U	0.12 U	0.14 U	0.135 U	0.0155 U	0.145 U	0.12 U
106-44-5	4-Methylphenol (m/p-cresol)	0.016 U	0.014 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0145 U	0.0155 U	0.0165 U	0.016 U	0.0155 U	0.145 U	0.14 U	0.165 U	0.16 U	0.018 U	0.175 U	3.3
100-02-7	4-Nitrophenol	0.0105 UJ	0.0095 UJ	0.0095 UJ	0.011 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.01 UJ	0.0105 UJ	0.0105 UJ	0.0105 U	0.095 U	0.095 U	0.11 U	0.105 U	0.012 U	0.115 U	0.095 U
83-32-9	Acenaphthene	0.00165 U	0.00145 U	0.033	0.016	0.0076	0.065 J	0.033	0.33	0.097	0.042	0.065 J	0.16	200	310	280	0.52	0.59	810 J
208-96-8	Acenaphthylene	0.0016 U	0.0014 U	0.25 J	0.11	0.057	1.1	0.53 J	2.5	1	0.035	0.98	4.5	11	17	16	7.9	8.5	6.5
67-64-1	Acetone	0.00155 U	0.00135 U	0.00135 U	0.0016 U	0.00135 U	0.0014 U	0.0033 J	0.0015 U	0.035 J	0.00155 U	0.0016 U	0.00155 U	0.062 J	0.14 J	0.089 J	0.012 J	0.0041 J	0.089 J
120-12-7	Anthracene	0.0017 J	0.0012 J	1.2	1.1	0.71 J	2.5	1	5.3	2.3	0.076	1.4	4.7	230	190	170	17	19	1400
7440-36-0	Antimony	0.2 U	0.165 U	0.18 U	0.205 U	0.17 U	0.17 U	0.19 U	0.19 U	0.2 U	0.205 UJ	2.1	0.9 J	0.18 U	0.2 U	0.205 U	0.8 J	0.77 J	0.17 UJ
7440-38-2	Arsenic	0.24 U	0.2 U	7.7	2.1	2.1	0.66	1.8	15	3.1	0.25 U	290 J	120 J	3.6 J	0.83 J	3.2 J	57	55	1.5
7440-39-3	Barium	5.9	9	16	20	13	4.9	9.8	47	18	8	19	19	11	4.9	5.2	28	24	8.9
71-43-2	Benzene	0.00024 U	0.00021 U	0.00021 U	0.00025 U	0.00021 U	0.000215 U	0.00022 U	0.00023 U	0.000245 U	0.00024 U	0.000245 U	0.00024 U	0.00021 U	0.0019 J	0.0017 J	0.00047 U	0.00026 U	0.11
56-55-3	Benzo(a)anthracene	0.00073 J	0.00027 U	0.55	0.15	0.082	0.24	0.76	2.9	0.93	0.071	4.9	5.7	87	120	110	12	14	910
50-32-8	Benzo(a)pyrene	0.0007 U	0.0006 U	0.68	0.058	0.028	0.31	1.1	6.2	2.6	0.06	2.9	12	44	54	46	22	28	370
205-99-2	Benzo(b)fluoranthene	0.000485 U	0.00043 U	1.2	0.099	0.045	0.38	1.7	10	5	0.11	9.9	20	55	68	62	40 J	49 J	560
191-24-2	Benzo(g,h,i)perylene	0.000395 U	0.00035 U	0.75	0.039	0.027	0.41	0.89	6.6	2.6	0.045	2.3	9.3	14	16	14	18	19	13
207-08-9	Benzo(k)fluoranthene	0.000395 U	0.00035 U	0.89	0.086	0.035	0.23	1.4	5.2	2.2	0.095	5.5	9	36	47	40	16	17	17
85-68-7	Benzyl butyl phthalate	0.011 U	0.01 U	0.01 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.1 U	0.1 U	0.115 U	0.11 U	0.0125 U	0.12 U	0.1 U
92-52-4	Biphenyl	0.095 U	0.08 U	0.08 U	0.095 U	0.085 U	0.085 U	0.085 U	0.09 U	0.095 U	0.095 U	0.09 U	0.85 U	38	93	57 J	0.105 UJ	1 UJ	110
111-91-1	Bis(2-chlorethoxy)methane	0.0105 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.095 U	0.095 U	0.11 UJ	0.105 UJ	0.012 U	0.115 U	0.095 U
111-44-4	Bis(2-chloroethyl)ether	0.0095 U	0.008 U	0.008 U	0.0095 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.085 U	0.085 U	0.095 U	0.095 U	0.0105 U	0.1 U	0.08 U
39638-32-9	Bis(2-chloroisopropyl) ether	0.013 UJ	0.0115 UJ	0.0115 UJ	0.0135 UJ	0.0115 UJ	0.012 UJ	0.012 UJ	0.0125 UJ	0.013 UJ	0.013 UJ	0.0125 U	0.12 U	0.115 U	0.135 U	0.13 U	0.0145 U	0.14 U	0.115 U
117-81-7	Bis(2-ethylhexyl)phthalate	0.01 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.009 U	0.14 J	0.48	0.12 J	0.01 U	0.01 U	0.09 U	0.09 U	0.105 U	0.1 UJ	0.044 J	0.11 U	0.09 U
75-27-4	Bromodichloromethane	0.00018 U	0.000155 U	0.000155 U	0.000185 U	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00016 U	0.000185 U	0.00018 U	0.00035 U	0.000195 U	0.000155 U
74-83-9	Bromomethane	0.000195 U	0.000175 U	0.000175 U	0.000205 U	0.000175 U	0.00018 U	0.00018 U	0.00019 U	0.0002 U	0.0002 U	0.0002 UJ	0.000195 UJ	0.000175 UJ	0.000205 UJ	0.0002 UJ	0.000385 UJ	0.00021 UJ	0.00017 UJ
7440-43-9	Cadmium	0.17 U	0.145 U	0.155 U	0.175 U	0.145 U	0.145 U	0.16 U	0.43 J	0.17 U	0.175 U	0.17 U	0.155 U	0.155 U	0.17 U	0.175 U	0.19 U	0.19 U	0.145 U
86-74-8	Carbazole	0.01 U	0.009 U	0.074 J	0.026 J	0.009 U	0.11 J	0.12 J	0.44	0.26	0.01 U	0.31	0.88 J	120	140	160	0.32	1.7 J	130
75-15-0	Carbon disulfide	0.001 U	0.0009 U	0.0009 U	0.00105 U	0.0009 U	0.0009 U	0.0009 U	0.00095 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0009 U	0.00105 U	0.001 U	0.00195 U	0.00105 U	0.00085 UJ
56-23-5	Carbon tetrachloride	0.000215 U	0.00019 U	0.00019 U	0.000225 U	0.00019 U	0.000195 U	0.000195 U	0.000205 U	0.00022 U	0.000215 U	0.00022 U	0.000215 U	0.00019 U	0.000225 U	0.000215 U	0.00042 U	0.00023 U	0.00019 U
108-90-7	Chlorobenzene	0.000245 U	0.000215 U	0.000215 U	0.000255 U	0.000215 U	0.00022 U	0.000225 U	0.000235 U	0.00025 U	0.000245 U	0.00025 U	0.000245 U	0.000215 UJ	0.000255 UJ	0.00025 UJ	0.00048 U	0.000265 U	0.000215 UJ
124-48-1	Chlorodibromomethane	0.000155 U	0.000135 U	0.000135 U	0.00016 U	0.000135 U	0.00014 U	0.00014 U	0.00015 U	0.000155 U	0.000155 U	0.00016 U	0.000155 U	0.000135 UJ	0.00016 UJ	0.000155 UJ	0.0003 U	0.000165 U	0.000135 UJ
75-00-3	Chloroethane	0.00022 U	0.000195 U	0.000195 U	0.00023 U	0.000195 U	0.0002 U	0.0002 U	0.000215 U	0.000225 U	0.00022 U	0.000225 U	0.00022 U	0.000195 U	0.00023 U	0.000225 U	0.000435 U	0.00024 U	0.000195 UJ
67-66-3	Chloroform	0.00021 U	0.000185 U	0.000185 U	0.000215 U	0.000185 U	0.00019 U	0.00019 U	0.0002 U	0.00021 U	0.00021 U	0.000215 U	0.00021 U	0.000185 U	0.000215 U	0.00021 U	0.00041 U	0.000225 U	0.000185 U
74-87-3	Chloromethane	0.000275 U	0.00024 U	0.00024 U	0.000285 U	0.000245 U	0.00025 U	0.00025 U	0.000265 U	0.00028 U	0.000275 U	0.00028 U	0.000275 U	0.000245 U	0.000285 U	0.00028 U	0.00055 U	0.0003 U	0.00024 U
7440-47-3	Chromium	3.1	6.2	15	3.4	4.3	5.2	5.8	25	6.7	2.2	440 J	160 J	7.9 J	2.2 J	5.9 J	99	94	4.8
218-01-9	Chrysene	0.00097 J	0.00026 U	0.71	0.073	0.022	0.073	1.1	4.1	1.1	0.094	6.1	7.5	84	100	93	14	16	780
156-59-2	cis-1,2-Dichloroethylene	0.00016 U	0.00014 U	0.00014 U	0.000165 U	0.00014 U	0.000145 U	0.000145 U	0.000155 U	0.000165 U	0.00016 U	0.000165 U	0.00016 U	0.00014 U	0.000165 U	0.00016 U	0.000315 U	0.000175 U	0.00014 U
10061-01-5	cis-1,3-Dichloropropene	0.00018 U	0.000155 U	0.000155 U	0.000185 U	0.00016 U	0.00016 U	0.000165 U	0.00017 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00016 UJ	0.000185 UJ	0.00018 UJ	0.00035 U	0.000195 U	0.000155 UJ

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KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS097CA	SS097DA	SS098AA	SS098BA	SS098CA	SS098DA	SS099AA	SS099BA	SS099CA	SS099DA	SS100AA	SS100BA	SS100CA	SS100DA	SS100DB	SS101AA	SS101BA	SS101CA
	Sample Date	07-Dec-06	07-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	08-Dec-06	11-Dec-06	11-Dec-06	11-Dec-06
	Sample Depth (feet)	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	0-0.25	0.25-0.5	0.5-2	2-6	2-6	0-0.25	0.25-0.5	0.5-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	0.59 J	0.62 J	10	4.9	1.4	1 J	8.9	44	13	0.98 J	210 J	86 J	5.6 J	1 J	3 J	82	85	1.9
110-82-7	Cyclohexane	0.000235 U	0.000205 U	0.000205 U	0.00024 U	0.000205 U	0.00021 U	0.000215 U	0.000225 U	0.000235 U	0.000235 U	0.00024 U	0.000235 U	0.000205 U	0.000245 U	0.000235 U	0.00046 U	0.00025 U	0.00086 J
53-70-3	Dibenzo(a,h)anthracene	0.00031 U	0.000275 U	0.15	0.016	0.0073	0.081	0.2	1.5	0.92	0.014	0.93	2	6.4	6.8	5.6	7.7 J	8.5 J	6.7
132-64-9	Dibenzofuran	0.008 U	0.007 U	0.018 J	0.0085 U	0.007 U	0.0075 U	0.033 J	0.24	0.13 J	0.048 J	0.12 J	0.26 J	220	340 J	340	0.045 J	0.28 J	350
75-09-2	Dichloromethane	0.00024 U	0.00021 U	0.00021 U	0.00025 U	0.00021 U	0.000215 U	0.00022 U	0.00023 U	0.000245 U	0.00024 U	0.000245 U	0.00024 U	0.00021 U	0.00025 U	0.00024 U	0.00047 U	0.00026 U	0.00021 U
84-66-2	Diethyl phthalate	0.0075 U	0.0065 U	0.0065 U	0.008 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.07 U	0.065 U	0.08 U	0.075 U	0.0085 U	0.08 U	0.065 U
131-11-3	Dimethyl phthalate	0.006 U	0.0055 U	0.0055 U	0.0065 U	0.0055 U	0.0055 U	0.0055 U	0.006 U	0.0065 U	0.006 U	0.006 U	0.055 U	0.055 U	0.065 U	0.06 UJ	0.007 U	0.065 U	0.055 U
84-74-2	di-n-Butyl-phthalate	0.037 U	0.0325 U	0.0325 U	0.039 U	0.033 U	0.034 U	0.034 U	0.0355 U	0.038 U	0.0375 U	0.0365 U	0.34 U	0.33 UJ	0.39 UJ	0.375 UJ	0.042 U	0.405 U	0.325 UJ
117-84-0	di-n-Octyl-phthalate	0.0095 U	0.008 U	0.008 U	0.0095 U	0.0085 U	0.0085 U	0.0085 U	0.009 U	0.0095 U	0.0095 U	0.009 U	0.085 U	0.085 U	0.095 U	0.095 U	0.0105 U	0.1 U	0.08 U
100-41-4	Ethylbenzene	0.000255 U	0.000225 U	0.000225 U	0.000265 U	0.00023 U	0.000235 U	0.000235 U	0.00025 U	0.00026 U	0.00026 U	0.000265 U	0.00026 U	0.083 J	0.00047	0.00042	0.00055 U	0.00028 U	0.0014
206-44-0	Fluoranthene	0.00036 U	0.000315 U	0.91	0.26	0.042	0.11	1.3	8.1	2.2	0.18	7.8	7.5	330	700 J	400 J	15	16	1000
86-73-7	Fluorene	0.00095 U	0.0008 U	0.027	0.011	0.008	0.041	0.025	0.35	0.091	0.057	0.067	0.16	230	340	300	0.57	0.66	810
87-68-3	Hexachloro-1,3-butadiene	0.0105 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.095 U	0.095 U	0.11 UJ	0.105 UJ	0.012 U	0.115 U	0.095 U
118-74-1	Hexachlorobenzene	0.005 U	0.00445 U	0.00445 U	0.0055 U	0.0045 U	0.0046 U	0.00465 U	0.00485 U	0.0055 U	0.0055 U	0.00495 U	0.0465 U	0.045 UJ	0.055 UJ	0.055 UJ	0.006 UJ	0.055 UJ	0.0445 UJ
77-47-4	Hexachlorocyclopentadiene	0.007 U	0.006 U	0.006 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.065 U	0.06 U	0.07 U	0.07 U	0.008 U	0.075 U	0.06 U
67-72-1	Hexachloroethane	0.0105 U	0.0095 U	0.0095 U	0.011 U	0.0095 U	0.0095 U	0.0095 U	0.01 U	0.0105 U	0.0105 U	0.0105 U	0.095 U	0.095 U	0.11 U	0.105 U	0.012 U	0.115 U	0.095 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.00055 U	0.000465 U	0.77	0.05	0.029	0.42	1	7.6	3.8	0.053	2.9	9.5	15	17	15	19	20	15
98-82-8	Isopropylbenzene	0.00028 U	0.00025 U	0.000245 U	0.00029 U	0.00025 U	0.000255 U	0.000255 U	0.00027 U	0.000285 U	0.000285 U	0.00029 U	0.000285 UJ				0.0006 UJ	0.000305 UJ	0.000245 UJ
7439-92-1	Lead	3 J	7.3 J	10	5.9	3.7	3.3	4.2	25	9.3	1.5	12 J	10 J	4.8 J	2.1 J	2.2 J	21	19	5.2
136777-61-2	m,p-Xylenes	0.00055 U	0.000465 U	0.000465 U	0.00055 U	0.00047 U	0.00048 U	0.000485 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.21 J	0.0011	0.001	0.00105 U	0.0006 U	0.0036
541-73-1	m-Dichlorobenzene	3.05E-05 U	0.000027 U	0.000027 U	3.15E-05 U	0.000027 U	2.75E-05 U	0.000028 U	2.95E-05 U	0.000031 U	0.000031 U	3.15E-05 U	3.05E-05 UJ				0.00006 UJ	0.000033 UJ	0.000027 UJ
7439-97-6	Mercury	0.021 J	0.042	0.15	0.13	0.056	0.034	0.54	1.8	0.87 J	0.029 J	0.35 J	0.32 J	0.052 J	0.022 J	0.018 J	1.4	1.2 J	0.099 J
79-20-9	Methyl acetate	0.00012 U	0.000105 U	0.000105 U	0.00012 U	0.000105 U	0.000105 U	0.00011 U	0.000115 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.000105 U	0.000125 U	0.00012 U	0.00023 U	0.000125 U	0.000105 U
78-93-3	Methyl ethyl ketone	0.0007 U	0.0006 U	0.0006 U	0.0007 U	0.0006 U	0.00065 U	0.00065 U	0.00065 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0006 U	0.015 J	0.0072 J	0.00135 U	0.00075 U	0.016
108-10-1	Methyl isobutyl ketone	0.00043 U	0.00038 U	0.00038 U	0.00045 U	0.000385 U	0.00039 U	0.000395 U	0.000415 U	0.00044 U	0.000435 U	0.000445 U	0.000435 U	0.000385 UJ	0.00045 UJ	0.00044 UJ	0.0009 U	0.00047 U	0.022 J
591-78-6	Methyl n-butyl ketone	0.00065 U	0.00055 U	0.00055 U	0.00065 U	0.00055 U	0.00055 U	0.0006 U	0.0006 U	0.00065 U	0.00065 U	0.00065 UJ	0.00065 UJ	0.00055 UJ	0.00065 UJ	0.00065 UJ	0.0012 U	0.0007 U	0.00055 UJ
108-88-3	Methylbenzene	0.000255 U	0.000225 U	0.000225 U	0.000265 U	0.00023 U	0.000235 U	0.000235 U	0.00025 U	0.00026 U	0.00026 U	0.000265 U	0.00065 J	0.023 J	0.14 J	0.12 J	0.00055 U	0.00028 U	0.00085
108-87-2	Methylcylohexane	0.00027 U	0.000235 U	0.000235 U	0.00028 U	0.00024 U	0.000245 U	0.000245 U	0.00026 U	0.000275 U	0.00027 U	0.000275 U	0.00027 U	0.00024 UJ	0.0021 J	0.0016 J	0.00055 U	0.00029 U	0.0065 J
91-20-3	Naphthalene	0.00031 U	0.000275 U	0.045	0.019	0.000275 U	0.0028 U	0.073	0.47	0.00315 U	0.000315 U	0.23	0.47	260	770	570	0.5	0.48	930 J
98-95-3	Nitrobenzene	0.0125 U	0.011 U	0.011 U	0.013 U	0.011 U	0.011 U	0.0115 U	0.012 U	0.0125 U	0.0125 U	0.012 U	0.115 U	0.11 U	0.13 UJ	0.125 UJ	0.014 U	0.135 U	0.11 U
621-64-7	n-Nitroso-di-n-Propylamine	0.011 U	0.01 U	0.01 U	0.0115 U	0.01 U	0.01 U	0.01 U	0.0105 U	0.0115 U	0.011 U	0.011 U	0.1 U	0.1 U	0.115 U	0.11 U	0.0125 U	0.12 U	0.1 U
86-30-6	n-Nitrosodiphenylamine	0.007 U	0.006 U	0.006 U	0.007 U	0.006 U	0.0065 U	0.0065 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.065 U	0.06 UJ	0.07 UJ	0.07 UJ	0.008 U	0.075 U	0.06 UJ
95-47-6	o-Xylene	0.000245 U	0.000215 U	0.000215 U	0.000255 U	0.000215 U	0.00022 U	0.000225 U	0.000235 U	0.00025 U	0.000245 U	0.00025 U	0.000245 U	0.13 J	0.00075	0.00064	0.00048 U	0.000265 U	0.0019
106-47-8	p-Chloroaniline	0.016 U	0.014 U	0.014 U	0.0165 U	0.014 U	0.0145 U	0.0145 U	0.0155 U	0.0165 U	0.016 U	0.0155 UJ	0.145 UJ	0.14 UJ	0.165 UJ	0.16 UJ	0.018 U	0.175 U	0.14 U
87-86-5	Pentachlorophenol	0.000425 U	0.000375 U	0.00375 U	0.000445 U	0.00038 U	0.00385 U	0.008 U	20	15	0.068	0.9 J	3.3 J	0.93 J	0.445 U	0.43 U	3.1	3.1	160 J
85-01-8	Phenanthrene	0.0042 J	0.0043 J	0.13	0.028	0.015	0.08	0.19	1.2	0.41	0.025	0.59	0.85	1300	1300	960	2	1.9	2100
108-95-2	Phenol	0.01 U	0.009 U	0.009 U	0.0105 U	0.009 U	0.009 U	0.009 U	0.0095 U	0.01 U	0.01 U	0.01 U	0.09 U	0.09 U	0.105 U	0.1 U	0.011 U	0.11 U	0.09 U
100-01-6	p-Nitroaniline	0.0075 U	0.0065 U	0.0065 U	0.008 U	0.0065 U	0.007 U	0.007 U	0.007 U	0.0075 U	0.0075 U	0.0075 U	0.07 U	0.065 U	0.08 U	0.075 U	0.0085 U	0.08 U	0.065 U
129-00-0	Pyrene	0.0021 J	0.0015 J	1	0.23	0.04	0.097	1.1	7.5	2	0.14	8.7	8.7	260	350	310	17	19	730
7782-49-2	Selenium	0.495 U	0.415 U	0.44 U	0.5 U	0.42 U	0.425 U	0.465 U	0.47 U	0.49 U	0.5 U	0.495 U	0.45 U	0.445 U	0.49 U	0.5 U	0.55 UJ	0.55 UJ	0.42 U
7440-22-4	Silver	0.225 U	0.185 U	0.2 U	0.225 U	0.19 U	0.19 U	0.21 U	0.21 U	0.22 U	0.23 U	0.225 U	0.205 U	0.2 U	0.22 U	0.23 U	0.25 U	0.25 U	0.19 U
100-42-5	Styrene (monomer)	0.000265 U	0.00023 U	0.00023 U	0.000275 U	0.000235 U	0.00024 U	0.00024 U	0.000255 U	0.000265 U	0.000265 U	0.00027 U	0.000265 U	0.05 J	0.23 J	0.2 J	0.00055 U	0.000285 U	0.056 J
1634-04-4	tert-Butyl methyl ether	0.000195 U	0.000175 U	0.000175 U	0.000205 U	0.000175 U	0.00018 U	0.00018 U	0.00019 U	0.0002 U	0.0002 U	0.0002 U	0.000195 U	0.000175 U	0.000205 U	0.0002 U	0.000385 U	0.00021 U	0.00017 U
127-18-4	Tetrachloroethylene	0.000245 U	0.000215 U	0.000215 U	0.000255 U	0.000215 U	0.00022 U	0.000225 U	0.000235 U	0.00025 U	0.000245 U	0.00025 U	0.000245 U	0.000215 UJ	0.000255 UJ	0.00025 UJ	0.00048 U	0.000265 U	0.000215 UJ
156-60-5	trans-1,2-Dichloroethene	0.000235 U	0.000205 U	0.000205 U	0.00024 U	0.000205 U	0.00021 U	0.000215 U	0.000225 U	0.000235 U	0.000235 U	0.00024 U	0.000235 U	0.000205 U	0.000245 U	0.000235 U	0.00046 U	0.00025 U	0.000205 U
10061-02-6	trans-1,2-Dichloropropene	0.000185 U	0.00016 U	0.00016 U	0.00019 U	0.000165 U	0.000165 U	0.00017 U	0.00018 U	0.000185 U	0.000185 U	0.00019 U	0.000185 U	0.000165 UJ	0.00019 UJ	0.000185 UJ	0.00036 U	0.0002 U	0.00016 UJ
75-25-2	Tribromomethane	0.00024 U	0.00021 U	0.00021 U	0.00025 U	0.00021 U	0.000215 U	0.00022 U	0.00023 U	0.000245 U	0.00024 U	0.000245 U	0.00024 U	0.00021 UJ	0.00025 UJ	0.00024 UJ	0.00047 U	0.00026 U	0.00021 UJ
79-01-6	Trichloroethylene	0.000245 U	0.000215 U	0.000215 U	0.000255 U	0.000215 U	0.00022 U	0.000225 U	0.000235 U	0.00025 U	0.000245 U	0.00025 U	0.000245 U	0.000215 U	0.000255 U	0.00025 U	0.00048 U	0.000265 U	0.000215 U
7440-62-2	Vanadium	1.2	2.7	1.8	1.5	2.3	2.7	2.6	11	2.9	1.3	0.55 U	3.5	1.7	0.55 U	0.55 U	6.6 J	5.3 J	0.45 U
75-01-4	Vinyl chloride	0.00015 U	0.00013 U	0.00013 U	0.000155 U	0.00013 U	0.000135 U	0.000135 U	0.000145 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00013 U	0.000155 U	0.00015 U	0.00029 U	0.00016 U	0.00013 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.48E-06 J	8.98E-07 J	0.001329	0.000155	6.09E-05	1.91E-05	0.001124	0.0405	0.0317	7.94E-05	0.0091	0.0109	0.000769	9.81E-05	0.000216	0.027	0.0244	0.00559
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	1.28E-05 J	2.37E-06 U	0.013552	0.001811	0.000671	0.000269	0.011014 J	0.375	0.295	0.001125	0.0906	0.105	0.00625	0.00115	0.00214	0.228	0.203	0.0501
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	8.05E-08 U	8.7E-08 U	7.64E-05	8.49E-06	3.09E-06 J	1.23E-06 J	9.9E-05	0.00226	0.00155	5.85E-06	0.000601	0.000809	4.33E-05	6.49E-06	1.49E-05	0.00179	0.00165	0.00033
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	7.85E-08 U	6.93E-07 J	3.16E-05	1.11E-05	3.34E-06 J	9.55E-07 J	2.95E-05	0.000761	0.000459	2.23E-06 J	0.000276	0.000316	1.98E-05	2.77E-06 J	5.94E-06	0.000771	0.00067	0.00015
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	3.7E-08 U	3.2E-08 U	0.000121	1.45E-05	5.15E-06 J	1.31E-06 J	9.52E-05	0.00109	0.000631	5.66E-06	0.000985	0.000897	3.05E-05	1.03E-05	2.08E-05	0.00184	0.00157	0.000108
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	4.9E-08 U	2.59E-07 J	2.34E-05	3.74E-06 J	1.43E-06 J	4.57E-07 J	1.55E-05	0.000241 J	0.00011	2.34E-07 U	0.000242	0.000236	1.14E-05	2.22E-06 J	5.42E-06	0.000541	0.000466	3.46E-05
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	4.54E-07 J	1.05E-07 U	0.000368	3.39E-05	1.16E-05	4.55E-06	0.000293	0.00809	0.00574	2.28E-05	0.00218	0.00261	0.000194	2.43E-05	5.32E-05	0.00442	0.00402	0.00078
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	6E-08 U	3.05E-08 U	1.07E-06 J	3.72E-07 J	1.37E-07 U	4.35E-08 U	1.19E-06 J	0.000245 J	8.75E-05	1.98E-07 U	9.74E-05	0.000125	7.57E-06	1.11E-06 J	2.16E-06 J	0.000197	0.000173	3.08E-05
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	2.42E-07 J	3.5E-08 U	0.00041	6.29E-05	2.07E-05	5.59E-06	0.000372	0.0018	0.000926	1.64E-05	0.00127	0.00115	6.23E-05	1.49E-05	2.85E-05	0.00264	0.00239	0.000145
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	1.2E-08 U	3.25E-07 J	3.01E-06 J	5.9E-07 J	3.06E-07 J	1.78E-07 J	2.93E-06 J	5.46E-05 J	9.91E-06 J	4.21E-07 J	3.36E-05 J	4.55E-05 J	3.65E-06	4.77E-07 J	U	5.25E-05 J	5.43E-05 J	5.23E-06
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1.85E-08 U	2.05E-08 U	5.01E-05	3.01E-06 J	1.2E-06 J	4.54E-07 J	2.9E-05	0.000247 J	0.000103	1.61E-06 J	0.00024	0.000207	8.76E-06	2.58E-06 J	5.9E-06	0.000475	0.000406	9.72E-06
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	4.9E-08 U	2.45E-08 U	2.21E-05	3.07E-06 J	1.23E-06 J	6.77E-07 J	1.36E-05	0.000576 J	0.000275	2.15E-06 J	0.000469	0.000481	0.00003	4.89E-06	1.08E-05	0.000956	0.000863	7.32E-05
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	1.2E-08 U	1.45E-07 J	3.6E-06 J	1.39E-06 J	5.64E-07 J	2.38E-07 J	2.99E-06 J	0.000139 J	3.52E-05 J	3.73E-07 J	9.65E-05	0.000126	8.36E-06	1.04E-06 J	2.24E-06 J	0.000163	0.00014	2.01E-05
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	2.2E-08 U	2.9E-07 U	4.44E-07	1.95E-08 U	1.6E-07 U	1.22E-07 U	7.86E-07 J	7.81E-06 J	2.47E-06 U	2.61E-07 U	1.47E-05 J	1.54E-05 J	9.2E-07 J	1.66E-07 U	U	1.37E-05 J	0.00585 U	9.3E-07
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1.45E-08 U	1.25E-08 U	1.95E-06	1.1E-08 U	5.05E-08 U	7.3E-08 U	3.69E-06	3.63E-05 J	1.62E-05	2.91E-07 J	2.14E-05	1.82E-05	8.09E-07	1.9E-07 U	5.46E-07 J	0.0148 U	3.32E-05	1.9E-06
39001-02-0	Octachlorodibenzofuran	5.87E-06 J	2.72E-06 J	0.009725 J	0.000561	0.000201	0.000106	0.008581 J	0.257	0.209	0.000646	0.0381	0.0537	0.00407	0.000447	0.000963	0.117	0.109	0.0342
3268-87-9	Octachlorodibenzo-p-dioxin	0.000148	4.31E-05 J	0.111245 J	0.013169 J	0.005262 J	0.002296	0.119068 J	4.65	5.62	0.015413 J	0.83	1.01	0.071	0.012	0.0214	2.09	1.92	0.648

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS101DA	TC	TP1	TP1	TP10	TP11	TP12	TP13	TP13	TP4	TP4	TP4_5	TP8	TP8	TP8_5.5	TP9
	Sample Date	11-Dec-06	24-Aug-95	21-Aug-95	21-Aug-95	22-Aug-95	22-Aug-95	23-Aug-95	23-Aug-95	23-Aug-95	21-Aug-95	21-Aug-95	21-Aug-95	22-Aug-95	22-Aug-95	22-Aug-95	22-Aug-95
	Sample Depth (feet)	2-6	0-1	1.5-1.5	2-2	3.5-3.5	3-3	3-3	2.5-2.5	3.5-3.5	2-2	5-5	5-5	2-2	5.5-5.5	5.5-5.5	2-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
71-55-6	1,1,1-Trichloroethane	0.000085 U															
79-34-5	1,1,2,2-Tetrachloroethane	0.000046 UJ															
79-00-5	1,1,2-Trichloroethane	0.000095 UJ															
75-34-3	1,1-Dichloroethane	0.000044 U															
75-35-4	1,1-Dichloroethylene	0.00012 U															
120-82-1	1,2,4-Trichlorobenzene	0.000105 UJ															
96-12-8	1,2-Dibromo-3-chloropropane	0.000345 UJ															
106-93-4	1,2-Dibromoethane	0.000039 UJ															
95-50-1	1,2-Dichlorobenzene	0.000055 UJ															
107-06-2	1,2-Dichloroethane	0.00007 U															
78-87-5	1,2-Dichloropropane	0.000038 U															
106-46-7	1,4-Dichlorobenzene	0.000065 UJ															
95-95-4	2,4,5-Trichlorophenol	0.07 U															
88-06-2	2,4,6-Trichlorophenol	0.195 U															
120-83-2	2,4-Dichlorophenol	0.095 U															
105-67-9	2,4-Dimethylphenol	0.105 U															
51-28-5	2,4-Dinitrophenol	0.065 U															
121-14-2	2,4-Dinitrotoluene	0.055 U															
606-20-2	2,6-Dinitrotoluene	0.195 U															
91-58-7	2-Chloronaphthalene	0.09 U															
95-57-8	2-Chlorophenol	0.1 U															
91-57-6	2-Methylnaphthalene	700 J	650		560	10000	0.365 U		17.5 U		2600	550			33		1.95 U
95-48-7	2-Methylphenol (o-cresol)	0.065 U															
88-74-4	2-Nitroaniline	0.12 U															
88-75-5	2-Nitrophenol	0.08 U															
91-94-1	3,3'-Dichlorobenzidine	0.185 U															
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.07 U															
99-09-2	3-Nitroaniline	0.095 U															
534-52-1	4,6-Dinitro-2-Methylphenol	0.055 UJ															
101-55-3	4-Bromophenyl phenyl ether	0.055 UJ															
59-50-7	4-Chloro-3-methylphenol	0.09 U															
7005-72-3	4-Chlorophenyl phenyl ether	0.12 U															
106-44-5	4-Methylphenol (m/p-cresol)	3.8															
100-02-7	4-Nitrophenol	0.095 U															
83-32-9	Acenaphthene	910 J	340		1100	9600	0.15 J		640		1700	280			2.5 J		1.4 J
208-96-8	Acenaphthylene	6.8	15 J		15 J	150 J	2.5		25		130	25			1.9 U		4.1
67-64-1	Acetone	0.13 J															
120-12-7	Anthracene	1100	4590		450	19000	0.15 J		520		23000	220			1.6 J		8
7440-36-0	Antimony	0.17 UJ															
7440-38-2	Arsenic	1.1			5.4	32	2.9	2.1	0.5 U		180		8100	4.9		2.1	7.8
7440-39-3	Barium	7.8															
71-43-2	Benzene	0.13															
56-55-3	Benzo(a)anthracene	930	210		230	1200	7.8		130		560	120			0.86 J		3.9
50-32-8	Benzo(a)pyrene	400	59 J		83	390	9.6		49		310	68			0.55 J		11
205-99-2	Benzo(b)fluoranthene	650	130		160	730	33		74		440	100			0.94 J		19
191-24-2	Benzo(g,h,i)perylene	17	17 J		25 J	86	4.7		11 J		130 J	17 J			1.9 U		11
207-08-9	Benzo(k)fluoranthene	17	47 J		45	250	8.4		33		180 J	35			0.4 J		7.2
85-68-7	Benzyl butyl phthalate	0.1 U															
92-52-4	Biphenyl	110															
111-91-1	Bis(2-chlorethoxy)methane	0.095 U															
111-44-4	Bis(2-chloroethyl)ether	0.085 U															
39638-32-9	Bis(2-chloroisopropyl) ether	0.115 U															
117-81-7	Bis(2-ethylhexyl)phthalate	0.09 U															
75-27-4	Bromodichloromethane	0.000205 U															
74-83-9	Bromomethane	0.000225 UJ															
7440-43-9	Cadmium	0.145 U															
86-74-8	Carbazole	94															
75-15-0	Carbon disulfide	0.00115 UJ															
56-23-5	Carbon tetrachloride	0.000245 U															
108-90-7	Chlorobenzene	0.00028 UJ															
124-48-1	Chlorodibromomethane	0.000175 UJ															
75-00-3	Chloroethane	0.000255 UJ															
67-66-3	Chloroform	0.00024 U															
74-87-3	Chloromethane	0.000315 U															
7440-47-3	Chromium	6.4		6.2		94	3.7	1.7	2.7		103	14000		13	7.2		19
218-01-9	Chrysene	790	250		230	1200	13		140		870	110			1 J		7
156-59-2	cis-1,2-Dichloroethylene	0.000185 U															
10061-01-5	cis-1,3-Dichloropropene	0.000205 UJ															

APPENDIX A
SUMMARY OF SITE SOIL DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SS101DA	TC	TP1	TP1	TP10	TP11	TP12	TP13	TP13	TP4	TP4	TP4_5	TP8	TP8	TP8_5.5	TP9
	Sample Date	11-Dec-06	24-Aug-95	21-Aug-95	21-Aug-95	22-Aug-95	22-Aug-95	23-Aug-95	23-Aug-95	23-Aug-95	21-Aug-95	21-Aug-95	21-Aug-95	22-Aug-95	22-Aug-95	22-Aug-95	22-Aug-95
	Sample Depth (feet)	2-6	0-1	1.5-1.5	2-2	3.5-3.5	3-3	3-3	2.5-2.5	3.5-3.5	2-2	5-5	5-5	2-2	5.5-5.5	5.5-5.5	2-2
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
7440-50-8	Copper	1.2		11		130	1.25 U	1.25 U	1.25 U		400	5800		1.25 U	1.25 U		23
110-82-7	Cyclohexane	0.0012 J															
53-70-3	Dibenzo(a,h)anthracene	8.3	9.8 J		8.2 J	21 J	2.4		3.3 J		29 J	3.7 J			1.9 U		2.6
132-64-9	Dibenzofuran	340															
75-09-2	Dichloromethane	0.000275 U															
84-66-2	Diethyl phthalate	0.065 U															
131-11-3	Dimethyl phthalate	0.055 U															
84-74-2	di-n-Butyl-phthalate	0.33 UJ															
117-84-0	di-n-Octyl-phthalate	0.085 U															
100-41-4	Ethylbenzene	0.0016															
206-44-0	Fluoranthene	1200	980		2000	9800	17		970		2600	660			4.7		12
86-73-7	Fluorene	900	380		900	13000	0.29 J		440		2300	300			3.1 J		1 J
87-68-3	Hexachloro-1,3-butadiene	0.095 U															
118-74-1	Hexachlorobenzene	0.045 UJ															
77-47-4	Hexachlorocyclopentadiene	0.06 U															
67-72-1	Hexachloroethane	0.095 U															
193-39-5	Indeno(1,2,3-cd)pyrene	220	19 J		25 J	100 J	5.1		14 J		110 J	16 J			1.9 U		8.1
98-82-8	Isopropylbenzene	0.00032 UJ															
7439-92-1	Lead	8.9															
136777-61-2	m,p-Xylenes	0.0041															
541-73-1	m-Dichlorobenzene	0.000035 UJ															
7439-97-6	Mercury	0.068 J															
79-20-9	Methyl acetate	0.000135 U															
78-93-3	Methyl ethyl ketone	0.019															
108-10-1	Methyl isobutyl ketone	0.02 J															
591-78-6	Methyl n-butyl ketone	0.0007 UJ															
108-88-3	Methylbenzene	0.00099															
108-87-2	Methylcylohexane	0.0088 J															
91-20-3	Naphthalene	1200 J	110		1700	13000	7.6		7.2 J		13000	1500			0.5 J		1.5 J
98-95-3	Nitrobenzene	0.11 U															
621-64-7	n-Nitroso-di-n-Propylamine	0.1 U															
86-30-6	n-Nitrosodiphenylamine	0.06 UJ															
95-47-6	o-Xylene	0.0021															
106-47-8	p-Chloroaniline	0.14 U															
87-86-5	Pentachlorophenol	150 J	71 J		36 U	265 U	0.4 J		72		275 U		19 U			5.3	0.71 J
85-01-8	Phenanthrene	2500	820		2200	26000	0.15 J		180		11000	1200			6.8		3.6
108-95-2	Phenol	0.09 U															
100-01-6	p-Nitroaniline	0.065 U															
129-00-0	Pyrene	810															
7782-49-2	Selenium	0.425 U															
7440-22-4	Silver	0.19 U															
100-42-5	Styrene (monomer)	0.053 J															
1634-04-4	tert-Butyl methyl ether	0.000225 U															
127-18-4	Tetrachloroethylene	0.00028 UJ															
156-60-5	trans-1,2-Dichloroethene	0.000265 U															
10061-02-6	trans-1,2-Dichloropropene	0.00021 UJ															
75-25-2	Tribromomethane	0.000275 UJ															
79-01-6	Trichloroethylene	0.00028 U															
7440-62-2	Vanadium	0.455 U															
75-01-4	Vinyl chloride	0.00017 U															
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.001938 J	0.0493						0.000119 U	0.285	0.00431				0.0195		
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.017358 J	0.635						0.000225 U	3.42	0.00087 U				0.167		
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.00022 J	0.00891						0.000221 U	0.02	0.001895 U				0.000312 U		
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	8.55E-05	0.000295 U						0.000136 U	0.014	0.001355 U				0.000762		
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	6.51E-05	0.00288						0.000153 U	0.00799	0.00064 U				0.00029 U		
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	1.95E-05	0.000175 U						0.000085 U	0.000206 U	0.00089 U				0.000147 U		
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000595	0.00802						0.000102 U	0.0506	0.000491 U				0.00433		
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	5.8E-07 U	0.000241 U						0.000145 U	0.000337 U	0.001455 U				0.00024 U		
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000367	0.00915						0.000128 U	0.0261	0.00056 U				0.000253 U		
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	4.69E-06 J	0.000235 U						5.05E-05 U	0.000104 U	0.000087 U				8.95E-05 U		
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	9.29E-06	0.000253 U						0.000139 U	0.000244 U	0.000168 U				0.000188 U		
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	1.08E-05															
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	7.81E-06															
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran		3.01E-05 U						2.67E-05 U	8.25E-05 U	6.95E-05 U				7.15E-05 U		
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin		2.41E-05 U						0.000054 U	0.000162 U	0.000112 U				0.000125 U		
39001-02-0	Octachlorodibenzofuran	0.013715	1.62						0.000414 U	1.96	0.00921				0.174		
3268-87-9	Octachlorodibenzo-p-dioxin	0.169191 J	10.5						0.00047 U	20.2	0.289				1.16		

APPENDIX A
SUMMARY OF SITE SEDIMENT DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SD001AA		SD001AB		SD002AA		SD003AA		SD004AA		SD004BA		SD005AA		SD006AA		SD006AC		SD006BA		SD007AA		SD008AA		SD009AA	
	Sample Date	12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06		12-Dec-06	
	Sample Depth (feet)	0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0.5-2		0-0.5		0-0.5		0-0.5		0.5-2		0-0.5		0-0.5		0-0.5	
	Concentration Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
71-55-6	1,1,1-Trichloroethane	0.000075	U	0.000075	U	0.000175	U	0.00017	U	0.000075	U	0.000155	U	0.000125	U	0.000105	U	0.0001	U	0.0001	U	0.00007	U	0.000065	U	0.00007	U
79-34-5	1,1,2,2-Tetrachloroethane	0.0000405	U	0.0000415	U	0.0001	U	0.000095	U	0.00004	U	0.000085	U	0.00007	U	0.00006	U	0.000055	U	0.000055	U	0.0000375	U	0.0000345	U	0.000038	U
79-00-5	1,1,2-Trichloroethane	0.00008	U	0.000085	U	0.00019	U	0.000185	U	0.00008	U	0.00017	U	0.000135	U	0.000115	U	0.000105	U	0.00011	U	0.000075	U	0.00007	U	0.000075	U
75-34-3	1,1-Dichloroethane	0.0000385	U	0.0000395	U	0.000095	U	0.00009	U	0.000038	U	0.000085	U	0.000065	U	0.000055	U	0.000055	U	0.000055	U	0.000036	U	0.000033	U	0.0000365	U
75-35-4	1,1-Dichloroethylene	0.000105	U	0.00011	U	0.00025	U	0.00024	U	0.000105	U	0.00022	U	0.000175	U	0.00015	U	0.00014	U	0.00014	U	0.0001	U	0.00009	U	0.0001	U
120-82-1	1,2,4-Trichlorobenzene	0.000095	U	0.000095	UJ	0.00022	UJ	0.000215	UJ	0.000095	U	0.000195	UJ	0.000155	UJ	0.00013	UJ			0.000125	U	0.00009	UJ	0.00008	UJ	0.00009	U
96-12-8	1,2-Dibromo-3-chloropropane	0.0003	U	0.000305	UJ	0.00075	UJ	0.0007	UJ	0.0003	U	0.00065	UJ	0.000495	UJ	0.00042	UJ			0.000405	U	0.00028	UJ	0.000255	UJ	0.000285	U
106-93-4	1,2-Dibromoethane	0.0000345	U	0.000035	U	0.000085	U	0.00008	U	0.000034	U	0.000075	U	0.00006	U	0.000048	U	0.000045	U	0.000046	U	0.000032	U	0.0000295	U	0.0000325	U
95-50-1	1,2-Dichlorobenzene	0.000048	U	0.000049	UJ	0.000115	UJ	0.00011	UJ	0.000047	U	0.0001	UJ	0.00008	UJ	0.00007	UJ			0.000065	U	0.0000445	UJ	0.000041	UJ	0.000045	U
107-06-2	1,2-Dichloroethane	0.000065	U	0.000065	U	0.00015	U	0.000145	U	0.000065	U	0.00013	U	0.000105	U	0.00009	U	0.00008	U	0.000085	U	0.00006	U	0.000055	U	0.00006	U
78-87-5	1,2-Dichloropropane	0.000033	U	0.000034	U	0.00008	U	0.00008	U	0.000033	U	0.00007	U	0.000055	U	0.0000465	U	0.0000435	U	0.0000445	U	0.000031	U	0.0000285	U	0.0000315	U
106-46-7	1,4-Dichlorobenzene	0.000055	U	0.000055	UJ	0.00013	UJ	0.000125	UJ	0.000055	U	0.000115	UJ	0.00009	UJ	0.000075	UJ			0.000075	U	0.0000495	UJ	0.0000455	UJ	0.00005	U
95-95-4	2,4,5-Trichlorophenol	0.08	U	0.08	U	0.0125	U	0.155	U	0.008	U	0.1	U	0.0095	U	0.009	U	0.009	U	0.0075	U	0.0075	U	0.007	U	0.0075	U
88-06-2	2,4,6-Trichlorophenol	0.22	U	0.215	U	0.035	U	0.43	U	0.022	U	0.28	U	0.026	U	0.025	U	0.024	U	0.02	U	0.0205	U	0.019	U	0.02	U
120-83-2	2,4-Dichlorophenol	0.105	U	0.1	U	0.0165	U	0.205	U	0.0105	U	0.135	U	0.0125	U	0.012	U	0.0115	U	0.0095	U	0.01	U	0.009	U	0.0095	U
105-67-9	2,4-Dimethylphenol	0.12	U	0.115	U	0.0185	U	0.23	U	0.0115	U	0.15	U	0.014	U	0.0135	U	0.013	U	0.0105	U	0.011	U	0.01	U	0.0105	U
51-28-5	2,4-Dinitrophenol	0.075	U	0.075	U	0.012	U	0.145	U	0.0075	U	0.095	U	0.009	U	0.0085	U	0.008	U	0.007	U	0.007	U	0.0065	U	0.007	U
121-14-2	2,4-Dinitrotoluene	0.06	U	0.06	U	0.0095	U	0.12	U	0.006	U	0.08	U	0.007	U	0.007	U	0.007	U	0.0055	U	0.006	U	0.0055	U	0.0055	U
606-20-2	2,6-Dinitrotoluene	0.22	U	0.215	U	0.035	U	0.43	U	0.022	U	0.28	U	0.026	U	0.025	U	0.024	U	0.02	U	0.0205	U	0.019	U	0.02	U
91-58-7	2-Chloronaphthalene	0.1	U	0.095	U	0.0155	U	0.195	U	0.01	U	0.125	U	0.0115	U	0.011	U	0.011	U	0.009	U	0.009	U	0.0085	U	0.009	U
95-57-8	2-Chlorophenol	0.11	U	0.11	U	0.0175	U	0.215	U	0.011	U	0.14	U	0.013	U	0.0125	U	0.012	U	0.01	U	0.0105	U	0.0095	U	0.01	U
91-57-6	2-Methylnaphthalene	0.095	UJ	0.09	UJ	0.145	UJ	0.18	UJ	0.0095	UJ	0.12	U	0.055	U	0.055	U	0.055	U	0.0085	U	0.0425	U	0.0395	U	0.041	U
95-48-7	2-Methylphenol (o-cresol)	0.075	U	0.075	U	0.012	U	0.145	U	0.0075	U	0.095	U	0.009	U	0.0085	U	0.008	U	0.007	U	0.007	U	0.0065	U	0.007	U
88-74-4	2-Nitroaniline	0.135	U	0.13	U	0.0215	U	0.265	U	0.0135	U	0.17	U	0.016	U	0.0155	U	0.015	U	0.012	U	0.0125	U	0.0115	U	0.012	U
88-75-5	2-Nitrophenol	0.09	U	0.085	U	0.0135	U	0.17	U	0.0085	U	0.11	U	0.01	U	0.01	U	0.0095	U	0.008	U	0.008	U	0.0075	U	0.008	U
91-94-1	3,3'-Dichlorobenzidine	0.21	U	0.2	U	0.033	U	0.405	U	0.0205	U	0.265	U	0.0245	U	0.0235	U	0.023	U	0.0185	U	0.0195	U	0.018	U	0.0185	U
78-59-1	3,5,5-Trimethyl-2-cyclohexene-1-one	0.08	U	0.08	U	0.0125	U	0.155	U	0.008	U	0.1	U	0.0095	U	0.009	U	0.009	U	0.0075	U	0.0075	U	0.007	U	0.0075	U
99-09-2	3-Nitroaniline	0.105	U	0.1	U	0.0165	U	0.205	U	0.0105	U	0.135	U	0.0125	U	0.012	U	0.0115	U	0.0095	U	0.01	U	0.009	U	0.0095	U
534-52-1	4,6-Dinitro-2-Methylphenol	0.06	U	0.06	U	0.0095	U	0.115	U	0.006	U	0.075	U	0.007	U	0.0065	U	0.0065	U	0.0055	U	0.0055	U	0.0049	U	0.0055	U
101-55-3	4-Bromophenyl phenyl ether	0.06	U	0.06	U	0.0095	U	0.12	U	0.006	U	0.08	U	0.007	U	0.007	U	0.007	U	0.0055	U	0.006	U	0.0055	U	0.0055	U
59-50-7	4-Chloro-3-methylphenol	0.1	U	0.095	U	0.0155	U	0.195	U	0.01	U	0.125	U	0.0115	U	0.011	U	0.011	U	0.009	U	0.009	U	0.0085	U	0.009	U
7005-72-3	4-Chlorophenyl phenyl ether	0.135	U	0.13	U	0.0215	U	0.265	U	0.0135	U	0.17	U	0.016	U	0.0155	U	0.015	U	0.012	U	0.0125	U	0.0115	U	0.012	U
106-44-5	4-Methylphenol (m/p-cresol)	0.16	U	0.155	U	0.025	U	0.31	U	0.016	U	0.2	U	0.019	U	0.018	U	0.0175	U	0.0145	U	0.015	U	0.014	U	0.0145	U
100-02-7	4-Nitrophenol	0.105	U	0.1	U	0.0165	U	0.205	U	0.0105	U	0.135	U	0.0125	U	0.012	U	0.0115	U	0.0095	U	0.01	U	0.009	U	0.0095	U
83-32-9	Acenaphthene	0.165	UJ	0.16	UJ	0.26	UJ	0.325	UJ	0.0165	U	0.21	UJ	0.1	UJ	0.095	U	0.095	U	0.015	U	0.08	U	0.075	U	0.075	U
208-96-8	Acenaphthylene	0.16	U	0.155	U	0.25	U	0.8	J	0.11		1.6		1.5		1.1		1.3		0.25		1.2		0.81		1.4	
67-64-1	Acetone	0.00155	U	0.0036	J	0.025	J	0.14	J	0.0038	J	0.014	J	0.0085	J	0.066	J	0.015	J	0.01	J	0.0034	J	0.0071	J	0.0056	J
120-12-7	Anthracene	0.46	J	0.69	J	1.1		1.7		0.17		2.2		2.4		1.8		2.1		0.47		2.3		1.6		2.3	
7440-36-0	Antimony	0.43	J	0.19	UJ	1.4	J	8.6	J	0.49	J	7.7	J	4.7	J	4.2	J	3.6	J	0.49	J	2	J	0.175	UJ	0.53	J
7440-38-2	Arsenic	2.1		1.7		13		160		22		270		390		280		210		52		120		18		31	
7440-39-3	Barium	110	J	8.1	J	46		82		35		86		74		51		39		22		23		6.5		13	
71-43-2	Benzene	0.00024	U	0.000245	U	0.0006	U	0.00055	U	0.000235	U	0.0005	U	0.000395	U	0.000335	U	0.000315	U	0.00032	U	0.000225	U	0.000205	U	0.000225	U
56-55-3	Benzo(a)anthracene	2.7	J	4.5	J	7.7		4		0.18		2.9		2.2		1.6		1.9		0.41		2.1		2.4		4	
50-32-8	Benzo(a)pyrene	3.5	J	5.3	J	12		8.3		0.32		5.2		3.3		2.1		2.8		0.6		3.2		2.5		4.2	
205-99-2	Benzo(b)fluoranthene	5.2	J	7.8	J	17		13		0.62		9.7		7.6		4.4	J	6.5	J	1.2	J	7.1	J	5	J	7.3	J
191-24-2	Benzo(g,h,i)perylene	2.5	J	3.6	J	11		8.2		0.36		5.7		3.3		2.7		3.3		0.68		3.6		2.2		3.3	
207-08-9	Benzo(k)fluoranthene	2.6	J	4	J	10		6.1		0.3		5.7		3.5		2.9		3.1		0.67		3.1		2.6		3.6	
85-68-7	Benzyl butyl phthalate	0.23	J	0.11	U	0.57	J	0.215	U	0.011	U	0.3	J	0.057	J	0.0125	U	0.012	U	0.01	U	0.0105	U	0.0095	U	0.01	U
92-52-4	Biphenyl	0.95	U	0.9	U	0.145	U	1.8	U	0.095	U	1.2	U	0.11	U	0.105	U	0.1	U	0.085	U	0.085	U	0.08	U	0.085	U
111-91-1	Bis(2-chlorethoxy)methane	0.105	U	0.1	U	0.0165	U	0.205	U	0.0105	U	0.135	U	0.0125	U	0.012	U	0.0115	U	0.0095	U	0.01	U	0.009	U	0.0095	U
111-44-4	Bis(2-chloroethyl)ether	0.095	U	0.09	U	0.0145	U	0.18	U	0.0095	U	0.12	U	0.011	U	0.0105	U	0.01	U	0.0085	U	0.0085	U	0.008	U	0.0085	U
39638-32-9	Bis(2-chloroisopropyl) ether	0.13	U	0.125	U	0.0205	U	0.25	U	0.013	U	0.165	U	0.015	U	0.0145	U	0.014	U	0.0115	U	0.012	U	0.011	U	0.0115	U
117-81-7	Bis(2-ethylhexyl)phthalate	0.68	J	0.095	U	2.6		2.8	J	0.05	J	0.67	J	0.2	J	0.07	J	0.095	J	0.009	U	0.057	J	0.0085	U	0.009	U
75-27-4	Bromodichloromethane	0.00018	U	0.000185	U	0.000425	U	0.00041	U	0.000175	U	0.00037	U	0.000295	U	0.00025	U	0.000235	U	0.00024	U	0.000165	U	0.000155	U	0.00017	U
74-83-9	Bromomethane	0.000195	UJ	0.0002	UJ	0.00047	UJ	0.00045	UJ	0.000195	UJ	0.00041	UJ	0.000325	UJ	0.000275	UJ	0.000255	UJ	0.000265	UJ	0.000185	UJ	0.00017	UJ	0.000185	UJ
7440-43-9	Cadmium	0.42	J	0.16	U	1.7		3.1		0.16	U	1.9		1.1		0.81		0.63		0.15	U	0.35	J	0.15	U	0.145	U
86-74-8	Carbazole	0.55	J	0.42	J	1.1		0.77	J	0.054	J	0.73	J	0.51		0.32		0.38		0.048	J	0.41		0.28		0.35	
75-15-0	Carbon disulfide	0.001	U	0.001	U	0.00235	U	0.00225	U	0.001	U	0.00205	U	0.00165	U	0.0014	U	0.0013	U	0.00135	U	0.00095	U	0.00085	U	0.00095	U
56-23-5	Carbon tetrachloride	0.000215	U	0.00022	U	0.00055	U	0.000495	U	0.000215	U	0.00045	U	0.000355	UJ	0.0003	UJ	0.00028	UJ	0.00029	UJ	0.0002	UJ	0.000185	UJ	0.000205	UJ
108-90-7	Chlorobenzene	0.000245	U	0.00025	U	0.0006	U	0.0006	U	0.000245	U	0.00055	U	0.000405	U	0.000345	U	0.00032	U	0.00033	U	0.00023	U	0.00021	U	0.00023	U
124-48-1	Chlorodibromomethane	0.000155	U	0.00016	U	0.000365	U	0.000355	U	0.000155	U	0.00032	U	0.000255	U	0.000215	U	0.0002	U	0.00021	U	0.000145	U	0.000135	U	0.000145	U
75-00-3	Chloroethane	0.00022	UJ	0.000225	UJ	0.00055	UJ	0.00055	UJ	0.00022	UJ	0.00046	UJ	0.000365	U	0.00031	U	0.00029	U	0.0003	U	0.000205	U	0.00019	U	0.00021	U
67-66-3	Chloroform	0.00021	U	0.000215	U	0.000495	U	0.00048	U	0.000205	U	0.000435	U	0.000345	U	0.000295	U	0.000275	U	0.00028	U	0.000195	U	0.00018	U	0.0002	U
74-87-3	Chloromethane	0.000275	U	0.00028	U	0.0007	U	0.00065	U	0.000275	U	0.0006	U	0.000455	U	0.00039	U	0.00036	U	0.00037	U	0.00026	U	0.000235	U	0.00026	U
7440-47-3	Chromium	9.8		8.5		56		500		57		710		570	J	450	J	340	J	76	J	220	J	22	J	47	J
218-01-9	Chrysene	3.6	J	5.6	J	12		7.6		0.33		5		3.2		2.6		2.7		0.58		3		3		4.5	
156-59-2	cis-1,2-Dichloroethylene	0.00016	U	0.000165	U	0.00038	U	0.00037	U	0.00016	U	0.000335	U	0.000265	U	0.000225	U	0.00021	U	0.000215	U	0.00015	U	0.00014	U	0.00015	U

APPENDIX A
SUMMARY OF SITE SEDIMENT DATA USED IN RISK ASSESSMENT
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

	Sample ID	SD001AA	SD001AB	SD002AA	SD003AA	SD004AA	SD004BA	SD005AA	SD006AA	SD006AC	SD006BA	SD007AA	SD008AA	SD009AA
	Sample Date	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06	12-Dec-06
	Sample Depth (feet)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.5-2	0-0.5	0-0.5	0-0.5	0.5-2	0-0.5	0-0.5	0-0.5
	Concentration Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
10061-01-5	cis-1,3-Dichloropropene	0.00018 U	0.000185 U	0.000425 U	0.00041 U	0.000175 U	0.00037 U	0.000295 U	0.00025 U	0.000235 U	0.00024 U	0.000165 U	0.000155 U	0.00017 U
7440-50-8	Copper	18	16	64	260	32	320	310	240	180	41	120	14	26
110-82-7	Cyclohexane	0.000235 U	0.00024 U	0.0006 U	0.00055 U	0.00023 U	0.000485 U	0.000385 UJ	0.00033 UJ	0.000305 UJ	0.000315 UJ	0.00022 UJ	0.0002 UJ	0.00022 UJ
53-70-3	Dibenzo(a,h)anthracene	0.88 J	1.3 J	3.1	2.2	0.11	1.6	1.1	0.71 J	1 J	0.2	1	0.69	1.1
132-64-9	Dibenzofuran	0.08 U	0.08 U	0.16 J	0.155 U	0.075 J	0.28 J	0.28	0.15 J	0.15 J	0.016 J	0.12 J	0.049 J	0.072 J
75-09-2	Dichloromethane	0.00024 U	0.000245 U	0.0006 U	0.00055 U	0.000235 U	0.0005 U	0.000395 U	0.000335 U	0.000315 U	0.00032 U	0.000225 U	0.000205 U	0.000225 U
84-66-2	Diethyl phthalate	0.075 U	0.075 U	0.012 U	0.145 U	0.0075 U	0.095 U	0.009 U	0.0085 U	0.008 U	0.007 U	0.007 U	0.0065 U	0.007 U
131-11-3	Dimethyl phthalate	0.06 U	0.06 U	0.0095 U	0.12 U	0.006 U	0.08 U	0.007 U	0.007 U	0.007 U	0.0055 U	0.006 U	0.0055 U	0.0055 U
84-74-2	di-n-Butyl-phthalate	0.375 U	0.36 U	0.57	0.75 U	0.037 U	0.47 U	0.044 U	0.042 U	0.041 U	0.0335 U	0.0345 U	0.032 U	0.0335 U
117-84-0	di-n-Octyl-phthalate	0.095 U	0.09 U	0.0145 U	0.18 U	0.0095 U	0.12 U	0.011 U	0.0105 U	0.01 U	0.0085 U	0.0085 U	0.008 U	0.0085 U
100-41-4	Ethylbenzene	0.00026 U	0.000265 U	0.00065 U	0.0006 U	0.000255 U	0.00055 U	0.000425 U	0.00036 U	0.000335 U	0.000345 U	0.00024 U	0.00022 U	0.000245 U
206-44-0	Fluoranthene	6 J	9.9 J	17	11	0.35	6.2	3.6	2.7	3	0.58	3	4.1	6.2
86-73-7	Fluorene	0.095 U	0.09 U	0.145 U	0.18 U	0.0095 U	0.12 U	0.055 U	0.055 U	0.055 U	0.0085 U	0.0425 U	0.0395 U	0.041 U
87-68-3	Hexachloro-1,3-butadiene	0.105 U	0.1 U	0.0165 U	0.205 U	0.0105 U	0.135 U	0.0125 U	0.012 U	0.0115 U	0.0095 U	0.01 U	0.009 U	0.0095 U
118-74-1	Hexachlorobenzene	0.055 U	0.049 U	0.008 U	0.1 U	0.005 U	0.065 U	0.006 U	0.006 U	0.006 U	0.00455 U	0.0047 U	0.00435 U	0.00455 U
77-47-4	Hexachlorocyclopentadiene	0.07 U	0.065 U	0.011 U	0.135 U	0.007 U	0.085 U	0.008 U	0.008 U	0.0075 U	0.006 U	0.0065 U	0.006 U	0.006 U
67-72-1	Hexachloroethane	0.105 U	0.1 U	0.0165 U	0.205 U	0.0105 U	0.135 U	0.0125 U	0.012 U	0.0115 U	0.0095 U	0.01 U	0.009 U	0.0095 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.5 J	3.7 J	10	7.6	0.35	5.4	3.4	2.2 J	3.1 J	0.62	3.3	2.1	3.2
98-82-8	Isopropylbenzene	0.000285 U	0.00029 UJ	0.0007 UJ	0.00065 UJ	0.00028 U	0.0006 UJ	0.000465 UJ	0.000395 UJ		0.00038 U	0.000265 UJ	0.00024 UJ	0.000265 U
7439-92-1	Lead	62 J	170 J	280	430	42	450	75	59	51	19	41	6.5	12
136777-61	m,p-Xylenes	0.00055 U	0.00055 U	0.0013 U	0.00125 U	0.00055 U	0.00115 U	0.0009 U	0.00075 U	0.0007 U	0.00075 U	0.000495 U	0.000455 U	0.0005 U
541-73-1	m-Dichlorobenzene	0.0000305 U	0.0000315 UJ	0.000075 UJ	0.000075 UJ	0.0000305 U	0.000065 UJ	0.000055 UJ	0.000043 UJ		0.0000415 U	0.0000285 UJ	0.0000265 UJ	0.000029 U
7439-97-6	Mercury	0.032	0.026 J	0.14	0.5	0.18	2 J	1.6	1.4 J	0.3 J	0.22	0.7	0.087	0.16
79-20-9	Methyl acetate	0.00012 U	0.00012 U	0.00028 U	0.00027 U	0.000115 U	0.000245 U	0.000195 U	0.000165 U	0.000155 U	0.00016 U	0.00011 U	0.0001 U	0.00011 U
78-93-3	Methyl ethyl ketone	0.0007 U	0.0007 U	0.00165 U	0.011 J	0.0007 U	0.00145 U	0.00115 U	0.00095 U	0.0009 U	0.00095 U	0.00065 U	0.0006 U	0.00065 U
108-10-1	Methyl isobutyl ketone	0.000435 U	0.000445 U	0.00105 U	0.001 U	0.00043 U	0.00095 U	0.00075 U	0.00065 U	0.0006 U	0.0006 U	0.000405 U	0.00037 U	0.00041 U
591-78-6	Methyl n-butyl ketone	0.00065 U	0.00065 U	0.0015 U	0.00145 U	0.00065 U	0.0013 U	0.00105 U	0.0009 U	0.0008 U	0.00085 U	0.0006 U	0.00055 U	0.0006 U
108-88-3	Methylbenzene	0.00088 J	0.00087 J	0.0035 J	0.0035 J	0.00096 J	0.0022 J	0.000425 U	0.00036 U	0.000335 U	0.000345 U	0.00024 U	0.00022 U	0.000245 U
108-87-2	Methylcylohexane	0.00027 U	0.000275 U	0.00065 U	0.00065 U	0.00027 U	0.0006 U	0.000445 UJ	0.00038 UJ	0.000355 U	0.000365 UJ	0.00025 UJ	0.00023 UJ	0.000255 UJ
91-20-3	Naphthalene	0.0315 UJ	0.0305 UJ	0.049 U	0.065 U	0.0031 U	0.0395 U	0.0185 U	0.0175 U	0.0175 U	0.0028 U	0.0145 U	0.0135 U	0.014 U
98-95-3	Nitrobenzene	0.125 U	0.12 U	0.0195 U	0.24 U	0.0125 U	0.155 U	0.0145 U	0.014 U	0.0135 U	0.011 U	0.0115 U	0.0105 U	0.011 U
621-64-7	n-Nitroso-di-n-Propylamine	0.11 U	0.11 U	0.0175 U	0.215 U	0.011 U	0.14 U	0.013 U	0.0125 U	0.012 U	0.01 U	0.0105 U	0.0095 U	0.01 U
86-30-6	n-Nitrosodiphenylamine	0.07 U	0.065 U	0.011 U	0.135 U	0.007 U	0.085 U	0.008 U	0.008 U	0.0075 U	0.006 U	0.0065 U	0.006 U	0.006 U
95-47-6	o-Xylene	0.000245 U	0.00025 U	0.0006 U	0.0006 U	0.000245 U	0.00055 U	0.000405 U	0.000345 U	0.00032 U	0.00033 U	0.00023 U	0.00021 U	0.00023 U
106-47-8	p-Chloroaniline	0.16 U	0.155 U	0.025 U	0.31 U	0.016 U	0.2 U	0.019 U	0.018 U	0.0175 U	0.0145 U	0.015 U	0.014 U	0.0145 U
87-86-5	Pentachlorophenol	0.11 J	0.0415 U	0.38 J	0.82 J	0.14 J	1.8 J	0.96 J	1.4 J	1.8 J	0.2 J	1 J	0.95 J	1.3 J
85-01-8	Phenanthrene	2.5 J	4.4 J	6.3	3.3	0.11	1.8	1.1	0.68	0.77	0.12	0.62	0.85	0.64
108-95-2	Phenol	0.1 U	0.095 U	0.0155 U	0.195 U	0.01 U	0.125 U	0.0115 U	0.011 U	0.011 U	0.009 U	0.009 U	0.0085 U	0.009 U
100-01-6	p-Nitroaniline	0.075 U	0.075 U	0.012 U	0.145 U	0.0075 U	0.095 U	0.009 U	0.0085 U	0.008 U	0.007 U	0.007 U	0.0065 U	0.007 U
129-00-0	Pyrene	5.5 J	9.1 J	16	10	0.41	6.8	4.4	3.5	3.9	0.75	3.9	4.7	6.7
7782-49-2	Selenium	0.5 U	0.465 U	0.75 U	3.1	0.465 U	1.5	1.9	0.55 U	0.55 U	0.43 U	0.465 U	0.435 U	0.425 U
7440-22-4	Silver	0.23 U	0.22 U	0.36 U	0.435 U	0.22 U	0.28 U	0.265 U	0.24 U	0.24 U	0.195 U	0.21 U	0.195 U	0.19 U
100-42-5	Styrene (monomer)	0.000265 U	0.00027 U	0.00065 U	0.00065 U	0.00026 U	0.00055 U	0.000435 U	0.00037 U	0.000345 U	0.000355 U	0.000245 U	0.000225 U	0.00025 U
1634-04-4	tert-Butyl methyl ether	0.000195 U	0.0002 U	0.00047 U	0.00045 U	0.000195 U	0.00041 U	0.000325 U	0.000275 U	0.000255 U	0.000265 U	0.000185 U	0.00017 U	0.000185 U
127-18-4	Tetrachloroethylene	0.000245 U	0.00025 U	0.0006 U	0.0006 U	0.000245 U	0.00055 U	0.000405 U	0.000345 U	0.00032 U	0.00033 U	0.00023 U	0.00021 U	0.00023 U
75-25-2	Tribromomethane	0.00024 U	0.000245 U	0.0006 U	0.00055 U	0.000235 U	0.0005 U	0.000395 U	0.000335 U	0.000315 U	0.00032 U	0.000225 U	0.000205 U	0.000225 U
79-01-6	Trichloroethylene	0.000245 U	0.00025 U	0.0006 U	0.0006 U	0.000245 U	0.00055 U	0.000405 U	0.000345 U	0.00032 U	0.00033 U	0.00023 U	0.00021 U	0.00023 U
7440-62-2	Vanadium	6.4 J	4.1 J	20	28	12	12	16 J	13 J	8.6 J	3.5 J	5.4 J	1.3 J	2.7 J
75-01-4	Vinyl chloride	0.00015 U	0.00015 U	0.00035 U	0.00034 U	0.000145 U	0.00031 U	0.000245 U	0.00021 U	0.000195 U	0.0002 U	0.00014 U	0.000125 U	0.00014 U
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000471503	0.000299355	0.00121816	0.00398089	0.00172 J	0.029	0.00718826 J	0.0128907	0.0123686	0.0026445	0.0022413	0.0022697	0.0069564
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.002167649 J	0.00233296 J	0.0047902 J	0.02995276	0.0121	0.191	0.06111116 J	0.1135211	0.1184824	0.0153029	0.0224307	0.0225736	0.0687627
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.000027425	0.000019036	8.7091E-05	0.00026125	0.000101	0.00179	0.00066638	0.0007811	0.0008315	0.0001599	0.0001496	0.0001544	0.0005058
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	0.000015295	0.000007976	0.00003132	0.0001088	0.0000417	0.000732	0.00030771	0.0003379	0.000381	5.745E-05	6.896E-05	6.328E-05	0.0002076
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.000015867	0.000017049	6.1845E-05	0.00024885	0.000116	0.00179	0.0007781	0.000628	0.000897	0.0001423	0.0001727	0.0001188	0.0003203
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	0.000010203	0.000006714	3.0804E-05	0.00009076	0.0000354	0.00058	0.00027219	0.0002729	0.0003083	5.07E-05	5.323E-05	4.381E-05	0.0001458
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.000070005	0.000057074	0.00022806	0.000874	0.000344	0.00536	0.00229612	0.002916	0.0027442	0.0003877	0.0004781	0.000515	0.001603
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	0.000001091 J	0.000000416 J	1.171E-06 J	2.9985E-06 U	0.00000911	0.000174	8.489E-06	7.956E-06	9.794E-06	7.72E-07 U	1.677E-06 U	2.462E-06 J	6.442E-06
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.000037582	0.00004095	0.00013124	0.00056867	0.000203	0.00306	0.00187833	0.0021513	0.0021646	0.0003577	0.0004604	0.0003572	0.0008948
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	0.000002898 J	0.000001039 J	4.384E-06 J	1.1247E-05 J	0.00000402	0.0000681	3.9841E-05	3.477E-05	3.823E-05	4.441E-06 J	5.732E-06	6.668E-06	2.551E-05
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.000005735 J	0.000005908	2.3991E-05	8.8148E-05	0.0000314	0.000491	0.00026212	0.0002751	0.0002979	3.582E-05	4.583E-05	4.009E-05	0.0001107
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	0.000006707	0.000007043	3.4855E-05	6.9596E-05	0.0000707	0.00115	0.00022621	0.0002095	0.0004025	0.0001007	7.655E-05	0.000064	0.0001215
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	0.000002611 J	0.000001202 J	6.034E-06 J	1.7717E-05	0.0000117	0.000208	5.9613E-05	5.35E-05	6.06E-05	7.016E-06 J	9.368E-06	6.75E-06	2.612E-05
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	0.000001129 J	0.000000716 J	0.00000077 U	9.396E-06	0.0000025	0.0000443	3.6663E-05	2.867E-05	2.868E-05	3.819E-06	5.558E-06	9.01E-07 U	5.843E-06
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.000000971 J	2.445E-07 U	2.096E-06	7.099E-06	0.00000228	0.0000328	2.0378E-05	1.827E-05	2.016E-05	2.104E-06 J	3.117E-06	1.934E-06	5.994E-06
39001-02-0	Octachlorodibenzofuran	0.002259883	0.001547207	0.00704343	0.02542024	0.00707	0.108	0.02520063 J	0.1287975 J	0.043068 J	0.0114747	0.0170329	0.0169814	0.0546579
3268-87-9	Octachlorodibenzo-p-dioxin	0.027861099 J	0.021217949 J	0.06380989 J	0.34750863 J	0.107	1.58	0.35802251 J	2.0489702 J	0.5432626 J	0.1470438 J	0.2552529 J	0.2838361 J	0.7986346 J

Appendix B

Bootstrap Model Results

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	3.35	0.039	0.129263
SS037	1575.864675	1.65	0.009	0.014306
SS038	17405.809577	4.65	0.096	0.445301
SS039	17353.004956	0.885	0.095	0.084494
SS040	15625.598882	5.9	0.086	0.507219
SS048	31657.414650	0.5525	0.174	0.096231
SS054	41.932697	1.675	0.000	0.000386
SS058	20178.182040	1.85	0.111	0.205381
SS059	15852.512062	3.05	0.087	0.266014
SS060	27093.319353	1.8	0.149	0.268313
SS062	27960.866900	0.7975	0.154	0.122684
	181757.83	26.16	1.00	2.14

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.7532	0.7977	0.7932	0.7243	0.7671	0.0348	0.0454
Max	4.3273	4.3182	4.2589	4.2407	4.2863	0.0429	0.0100
Average	2.1462	2.1367	2.1450	2.1448	2.1432	0.0043	0.0020
Std Dev	0.5065	0.5127	0.5117	0.5049	0.5089	0.0038	0.0075
1%	1.1238	1.0895	1.1122	1.1020	1.1069	0.0146	0.0132
5%	1.3661	1.3427	1.3615	1.3525	1.3557	0.0104	0.0076
10%	1.5070	1.4899	1.5030	1.5204	1.5051	0.0126	0.0083
15%	1.6129	1.5966	1.6172	1.6243	1.6127	0.0118	0.0073
20%	1.6995	1.6888	1.7045	1.7120	1.7012	0.0097	0.0057
25%	1.7835	1.7640	1.7827	1.7951	1.7813	0.0129	0.0072
30%	1.8484	1.8354	1.8531	1.8575	1.8486	0.0096	0.0052
35%	1.9211	1.9132	1.9247	1.9210	1.9200	0.0049	0.0025
40%	1.9824	1.9791	1.9789	1.9850	1.9813	0.0029	0.0015
45%	2.0539	2.0499	2.0443	2.0502	2.0496	0.0039	0.0019
50%	2.1251	2.1155	2.1063	2.1137	2.1151	0.0078	0.0037
55%	2.1942	2.1759	2.1712	2.1761	2.1794	0.0101	0.0047
60%	2.2641	2.2575	2.2434	2.2490	2.2535	0.0091	0.0041
65%	2.3292	2.3216	2.3042	2.3123	2.3168	0.0109	0.0047
70%	2.3972	2.3998	2.3998	2.3953	2.3980	0.0022	0.0009
75%	2.4741	2.4805	2.4868	2.4785	2.4800	0.0053	0.0021
80%	2.5678	2.5711	2.5757	2.5658	2.5701	0.0043	0.0017
85%	2.6816	2.6675	2.6973	2.6834	2.6825	0.0122	0.0045
90%	2.7984	2.8062	2.8417	2.8252	2.8179	0.0195	0.0069
95%	3.0127	3.0002	3.0336	3.0322	3.0197	0.0161	0.0053
97%	3.1744	3.1436	3.1575	3.1484	3.1560	0.0135	0.0043
99%	3.4594	3.4409	3.4201	3.3994	3.4299	0.0259	0.0076
Kurtosis	0.00	-0.03	-0.05	-0.10	-0.05	0.04	
Skewness	0.32	0.28	0.33	0.29	0.31	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	109.25	0.039	4.215532
SS037	1575.864675	140	0.009	1.213819
SS038	17405.809577	265	0.096	25.377391
SS039	17353.004956	45	0.095	4.296295
SS040	15625.598882	275	0.086	23.641565
SS048	31657.414650	29.725	0.174	5.177310
SS054	41.932697	22.25	0.000	0.005133
SS058	20178.182040	149	0.111	16.541511
SS059	15852.512062	200	0.087	17.443553
SS060	27093.319353	180	0.149	26.831292
SS062	27960.866900	47	0.154	7.230284
	181757.83	1462.23	1.00	131.97

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	44.2614	41.7432	48.6091	40.5364	43.7875	3.5694	0.0815
Max	219.2045	228.0909	231.7023	230.9091	227.4767	5.7284	0.0252
Average	131.4115	132.2347	132.1959	132.5877	132.1074	0.4963	0.0038
Std Dev	26.6363	26.6293	26.8883	27.1082	26.8155	0.2293	0.0086
1%	70.2163	72.1513	71.6727	70.8079	71.2121	0.8659	0.0122
5%	88.9183	87.8793	88.3501	88.3990	88.3867	0.4249	0.0048
10%	98.1000	97.4798	97.5836	98.8318	97.9988	0.6180	0.0063
15%	103.9251	104.2170	104.4273	104.6114	104.2952	0.2947	0.0028
20%	108.2804	109.9727	109.5995	110.1941	109.5117	0.8567	0.0078
25%	112.6051	114.8341	113.8318	114.3188	113.8974	0.9538	0.0084
30%	116.4032	118.5789	117.6400	118.4518	117.7685	1.0007	0.0085
35%	120.1231	122.5558	121.2022	122.0651	121.4865	1.0674	0.0088
40%	123.5186	125.4968	124.9491	125.5205	124.8712	0.9396	0.0075
45%	127.1068	128.6785	128.1977	128.5102	128.1233	0.7063	0.0055
50%	130.8159	132.2704	131.7148	131.6568	131.6145	0.6000	0.0046
55%	134.6435	135.6114	135.8044	135.1844	135.3109	0.5149	0.0038
60%	137.9750	138.5864	138.9277	138.5964	138.5214	0.3973	0.0029
65%	141.6114	142.2712	142.5182	142.2549	142.1639	0.3876	0.0027
70%	145.7023	146.0643	145.9734	146.3461	146.0215	0.2655	0.0018
75%	149.9977	149.8267	150.0392	150.6636	150.1318	0.3663	0.0024
80%	154.6623	153.8804	154.5300	155.4341	154.6267	0.6375	0.0041
85%	159.9750	159.3660	160.7122	161.2265	160.3199	0.8174	0.0051
90%	166.0927	166.4980	167.3700	167.5723	166.8832	0.7036	0.0042
95%	175.8670	177.6114	176.3668	177.6114	176.8641	0.8866	0.0050
97%	181.9757	183.2505	183.6120	184.2567	183.2737	0.9602	0.0052
99%	192.9118	195.5482	194.6141	197.5205	195.1486	1.9213	0.0098
Kurtosis	-0.20	0.00	-0.10	0.04	-0.07	0.11	
Skewness	0.05	0.05	0.07	0.10	0.07	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	110	0.039	4.244472
SS037	1575.864675	94.5	0.009	0.819328
SS038	17405.809577	487.5	0.096	46.684823
SS039	17353.004956	79.5	0.095	7.590121
SS040	15625.598882	455	0.086	39.116045
SS048	31657.414650	36.25	0.174	6.313793
SS054	41.932697	33.75	0.000	0.007786
SS058	20178.182040	199.5	0.111	22.147862
SS059	15852.512062	230	0.087	20.060086
SS060	27093.319353	215	0.149	32.048488
SS062	27960.866900	155	0.154	23.844553
	181757.83	2096.00	1.00	202.88

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	77.6136	81.9545	94.3409	88.7727	85.6705	7.3829	0.0862
Max	368.5909	363.3182	371.5454	370.9546	368.6023	3.7469	0.0102
Average	202.7815	203.2142	203.2698	201.9036	202.7923	0.6314	0.0031
Std Dev	42.8253	43.9425	43.6692	42.2299	43.1667	0.7850	0.0182
1%	109.9545	110.2041	114.4075	112.9314	111.8744	2.1610	0.0193
5%	136.1136	133.5898	136.1807	135.9977	135.4705	1.2561	0.0093
10%	148.8136	147.6909	149.7045	149.7477	148.9892	0.9667	0.0065
15%	158.2045	156.6523	158.1943	157.9739	157.7563	0.7436	0.0047
20%	165.9545	164.8182	165.1818	166.0455	165.5000	0.5973	0.0036
25%	172.7500	172.0795	171.5682	171.8409	172.0597	0.5054	0.0029
30%	178.7045	178.2364	177.4091	178.1977	178.1369	0.5371	0.0030
35%	184.1432	184.8330	183.8409	183.6591	184.1190	0.5161	0.0028
40%	190.5909	190.5682	189.3409	189.2454	189.9364	0.7438	0.0039
45%	196.2750	195.8409	194.6489	194.8409	195.4014	0.7825	0.0040
50%	201.5568	200.8977	200.4091	200.3182	200.7955	0.5678	0.0028
55%	206.9750	207.1364	206.0886	205.8182	206.5045	0.6493	0.0031
60%	211.4727	213.7273	212.5455	211.4864	212.3080	1.0714	0.0050
65%	217.6818	219.6364	218.2352	217.8489	218.3506	0.8880	0.0041
70%	223.5455	226.3864	224.7500	223.2727	224.4886	1.4187	0.0063
75%	230.2500	232.9318	231.5739	229.0284	230.9460	1.6832	0.0073
80%	238.5682	240.1455	239.8409	236.9182	238.8682	1.4686	0.0061
85%	247.2636	248.6398	249.7955	245.5716	247.8176	1.8202	0.0073
90%	259.2114	260.2727	260.8682	256.6636	259.2540	1.8579	0.0072
95%	278.3182	277.3420	278.0239	275.3636	277.2619	1.3299	0.0048
97%	287.5123	289.1591	289.3580	286.5014	288.1327	1.3664	0.0047
99%	309.2291	312.4562	316.2873	306.8904	311.2157	4.0790	0.0131
Kurtosis	-0.05	-0.08	-0.01	-0.04	-0.05	0.03	
Skewness	0.23	0.24	0.34	0.25	0.27	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	15.75	0.039	0.607731
SS037	1575.864675	232	0.009	2.011471
SS038	17405.809577	26	0.096	2.489857
SS039	17353.004956	17.925	0.095	1.711357
SS040	15625.598882	250	0.086	21.492332
SS048	31657.414650	9.775	0.174	1.702547
SS054	41.932697	152.5	0.000	0.035183
SS058	20178.182040	83.5	0.111	9.269907
SS059	15852.512062	27	0.087	2.354880
SS060	27093.319353	10.6	0.149	1.580065
SS062	27960.866900	11.7	0.154	1.799879
	181757.83	836.75	1.00	45.06

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	10.6750	10.2000	10.6000	10.5500	10.5062	0.2105	0.0200
Max	129.6182	132.5977	132.4614	152.2909	136.7420	10.4565	0.0765
Average	44.7803	45.0074	45.1030	45.4206	45.0778	0.2656	0.0059
Std Dev	20.8392	20.8710	20.5610	20.7540	20.7563	0.1392	0.0067
1%	13.3227	13.1996	13.3749	12.9927	13.2225	0.1699	0.0128
5%	15.8884	15.9224	16.3723	16.1673	16.0876	0.2268	0.0141
10%	19.9257	19.7273	20.0773	19.9236	19.9135	0.1435	0.0072
15%	21.8493	21.8584	22.2182	22.0523	21.9945	0.1760	0.0080
20%	24.4895	25.0691	25.6955	25.4205	25.1686	0.5203	0.0207
25%	27.9045	27.9102	28.5006	28.5705	28.2214	0.3638	0.0129
30%	32.9398	31.8636	33.4727	33.8700	33.0365	0.8699	0.0263
35%	35.4090	35.2658	35.7295	36.0522	35.6141	0.3505	0.0098
40%	37.3673	37.6591	37.7227	38.5450	37.8235	0.5053	0.0134
45%	40.3766	40.7159	40.6899	41.0977	40.7200	0.2953	0.0073
50%	42.4068	42.4773	42.4386	42.7091	42.5080	0.1372	0.0032
55%	44.0745	44.1861	44.1770	44.8177	44.3139	0.3397	0.0077
60%	46.9050	47.8864	47.6500	48.0823	47.6309	0.5152	0.0108
65%	49.3159	50.5076	50.1395	50.6909	50.1635	0.6098	0.0122
70%	54.3773	55.8095	55.7075	55.8189	55.4283	0.7025	0.0127
75%	58.0205	59.3165	58.6915	59.0227	58.7628	0.5569	0.0095
80%	62.8436	63.0768	62.7736	63.2386	62.9832	0.2140	0.0034
85%	66.5861	66.2890	65.6478	67.0330	66.3890	0.5811	0.0088
90%	72.2048	72.9961	71.9005	73.9927	72.7735	0.9348	0.0128
95%	83.5709	83.1758	83.3366	83.8727	83.4890	0.3029	0.0036
97%	90.4050	88.9368	89.1985	87.3091	88.9623	1.2742	0.0143
99%	104.7006	101.8830	102.2068	100.9131	102.4259	1.6130	0.0157
Kurtosis	0.26	0.14	0.24	0.24	0.22	0.05	
Skewness	0.70	0.64	0.67	0.63	0.66	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	0.0475	0.039	0.001833
SS037	1575.864675	0.21	0.009	0.001821
SS038	17405.809577	0.335	0.096	0.032081
SS039	17353.004956	0.06575	0.095	0.006277
SS040	15625.598882	1.035	0.086	0.088978
SS048	31657.414650	0.0795	0.174	0.013847
SS054	41.932697	0.2975	0.000	0.000069
SS058	20178.182040	0.985	0.111	0.109352
SS059	15852.512062	1.72	0.087	0.150015
SS060	27093.319353	0.21	0.149	0.031303
SS062	27960.866900	0.1535	0.154	0.023614
	181757.83	5.14	1.00	0.46

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0982	0.0837	0.0970	0.0821	0.0903	0.0085	0.0941
Max	1.1668	1.0413	1.1668	1.1532	1.1321	0.0608	0.0537
Average	0.4590	0.4581	0.4630	0.4579	0.4595	0.0024	0.0052
Std Dev	0.1573	0.1558	0.1566	0.1547	0.1561	0.0011	0.0070
1%	0.1441	0.1438	0.1455	0.1475	0.1452	0.0017	0.0115
5%	0.2159	0.2155	0.2278	0.2211	0.2201	0.0057	0.0260
10%	0.2634	0.2624	0.2748	0.2679	0.2671	0.0056	0.0211
15%	0.2956	0.2960	0.2999	0.2966	0.2970	0.0019	0.0066
20%	0.3213	0.3209	0.3264	0.3195	0.3220	0.0030	0.0093
25%	0.3473	0.3486	0.3529	0.3485	0.3493	0.0024	0.0070
30%	0.3695	0.3671	0.3721	0.3690	0.3694	0.0021	0.0056
35%	0.3874	0.3854	0.3899	0.3855	0.3871	0.0021	0.0054
40%	0.4086	0.4063	0.4117	0.4057	0.4081	0.0027	0.0066
45%	0.4329	0.4318	0.4340	0.4296	0.4321	0.0019	0.0043
50%	0.4497	0.4491	0.4507	0.4473	0.4492	0.0014	0.0031
55%	0.4667	0.4668	0.4694	0.4642	0.4668	0.0021	0.0046
60%	0.4913	0.4912	0.4907	0.4889	0.4905	0.0011	0.0023
65%	0.5133	0.5132	0.5135	0.5118	0.5129	0.0008	0.0015
70%	0.5316	0.5323	0.5351	0.5304	0.5323	0.0020	0.0037
75%	0.5588	0.5566	0.5639	0.5554	0.5587	0.0037	0.0067
80%	0.5910	0.5912	0.5935	0.5888	0.5911	0.0019	0.0033
85%	0.6223	0.6219	0.6252	0.6163	0.6214	0.0037	0.0060
90%	0.6685	0.6698	0.6727	0.6653	0.6691	0.0031	0.0046
95%	0.7325	0.7334	0.7418	0.7367	0.7361	0.0042	0.0057
97%	0.7650	0.7761	0.7891	0.7685	0.7747	0.0106	0.0137
99%	0.8723	0.8462	0.8700	0.8435	0.8580	0.0153	0.0178
Kurtosis	0.18	-0.14	0.11	-0.01	0.04	0.14	
Skewness	0.41	0.33	0.43	0.38	0.39	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
SS036	6488.216521	0.715355	0.036	0.025536
SS037	1575.864674	7.86625	0.009	0.068201
SS038	17405.809577	2.383725	0.096	0.228274
SS039	17353.004956	0.41349915	0.095	0.039478
SS040	15625.598882	3.15885	0.086	0.271564
SS048	31548.248271	1.0719375	0.174	0.186059
SS058	11614.709052	83.9465	0.064	5.364358
SS059	15852.512064	7.25605	0.087	0.632856
SS060	27093.319353	2.8515	0.149	0.425052
SS062	27960.866900	2.4064	0.154	0.370191
TC	9239.682604	105.42	0.051	5.359039
	181757.83	217.49	1.00	12.97

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.8956	0.8890	0.8762	1.0660	0.9317	0.0899	0.0965
Max	57.0121	54.4552	55.2411	57.1891	55.9744	1.3414	0.0240
Average	13.0239	12.8336	12.8506	12.9129	12.9052	0.0861	0.0067
Std Dev	8.8251	8.8798	8.7532	8.9417	8.8499	0.0802	0.0091
1%	1.6462	1.6246	1.6273	1.6776	1.6439	0.0244	0.0149
5%	2.0314	2.0081	2.0563	2.0207	2.0291	0.0205	0.0101
10%	2.3229	2.2996	2.3275	2.2876	2.3094	0.0190	0.0082
15%	2.5977	2.5774	2.5999	2.5591	2.5835	0.0192	0.0074
20%	2.9238	2.8769	2.8924	2.8579	2.8878	0.0279	0.0097
25%	3.6180	3.3538	3.3696	3.4351	3.4441	0.1211	0.0352
30%	9.4821	9.3478	9.3808	9.4012	9.4030	0.0572	0.0061
35%	9.8318	9.7527	9.7744	9.7941	9.7883	0.0336	0.0034
40%	10.1964	10.1451	10.1431	10.1418	10.1566	0.0266	0.0026
45%	10.8069	10.7171	10.6609	10.6920	10.7192	0.0628	0.0059
50%	11.4406	11.4384	11.4113	11.3709	11.4153	0.0324	0.0028
55%	11.8607	11.8075	11.8132	11.7648	11.8116	0.0392	0.0033
60%	12.3006	12.2546	12.2933	12.2452	12.2734	0.0276	0.0022
65%	16.9163	16.6821	16.8515	16.7032	16.7883	0.1139	0.0068
70%	18.3494	17.6711	17.9830	17.8768	17.9700	0.2841	0.0158
75%	19.1075	18.9968	19.0932	19.0111	19.0521	0.0563	0.0030
80%	19.7105	19.6481	19.6315	19.6240	19.6535	0.0393	0.0020
85%	21.2068	21.1373	21.1305	21.0846	21.1398	0.0504	0.0024
90%	26.3513	26.3010	26.2016	26.1585	26.2531	0.0886	0.0034
95%	28.7412	28.7856	28.7744	28.9331	28.8086	0.0851	0.0030
97%	30.6909	30.8987	30.8104	33.7955	31.5489	1.5002	0.0476
99%	37.6402	37.5568	36.3547	37.9828	37.3836	0.7103	0.0190
Kurtosis	0.34	0.39	0.16	0.67	0.39	0.21	
Skewness	0.72	0.76	0.69	0.83	0.75	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS036	7013.327065	0.053	0.039	0.002045
SS037	1575.864675	1.24	0.009	0.010751
SS038	17405.809577	0.21	0.096	0.020110
SS039	17353.004956	0.04175	0.095	0.003986
SS040	15625.598882	0.385	0.086	0.033098
SS048	31657.414650	0.1035	0.174	0.018027
SS054	41.932697	0.3225	0.000	0.000074
SS058	20178.182040	3.4	0.111	0.377457
SS059	15852.512062	0.515	0.087	0.044917
SS060	27093.319353	0.109	0.149	0.016248
SS062	27960.866900	0.1975	0.154	0.030383
	181757.83	6.58	1.00	0.56

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0935	0.0785	0.0963	0.0942	0.0906	0.0082	0.0902
Max	1.9600	1.6950	2.2052	1.9306	1.9477	0.2087	0.1071
Average	0.5580	0.5591	0.5583	0.5595	0.5587	0.0007	0.0013
Std Dev	0.3061	0.3073	0.3038	0.3099	0.3068	0.0025	0.0082
1%	0.1207	0.1223	0.1267	0.1240	0.1234	0.0026	0.0208
5%	0.1540	0.1573	0.1568	0.1564	0.1561	0.0015	0.0096
10%	0.1785	0.1796	0.1816	0.1770	0.1792	0.0019	0.0109
15%	0.2038	0.2010	0.2032	0.2002	0.2020	0.0017	0.0085
20%	0.2344	0.2277	0.2287	0.2250	0.2289	0.0040	0.0173
25%	0.2902	0.2841	0.2818	0.2751	0.2828	0.0062	0.0221
30%	0.4331	0.4295	0.4301	0.4287	0.4304	0.0019	0.0044
35%	0.4538	0.4509	0.4531	0.4521	0.4525	0.0013	0.0028
40%	0.4682	0.4684	0.4696	0.4675	0.4684	0.0009	0.0019
45%	0.4826	0.4835	0.4846	0.4840	0.4837	0.0008	0.0017
50%	0.4992	0.4986	0.5029	0.5002	0.5002	0.0019	0.0038
55%	0.5176	0.5202	0.5212	0.5189	0.5195	0.0016	0.0031
60%	0.5452	0.5485	0.5535	0.5476	0.5487	0.0035	0.0063
65%	0.6377	0.6961	0.6977	0.7041	0.6839	0.0310	0.0453
70%	0.7442	0.7456	0.7455	0.7497	0.7463	0.0024	0.0032
75%	0.7689	0.7675	0.7707	0.7734	0.7701	0.0025	0.0033
80%	0.7949	0.7945	0.7943	0.7941	0.7944	0.0003	0.0004
85%	0.8291	0.8338	0.8287	0.8320	0.8309	0.0024	0.0029
90%	1.0337	1.0333	1.0303	1.0323	1.0324	0.0015	0.0015
95%	1.0924	1.1003	1.0934	1.0996	1.0964	0.0041	0.0037
97%	1.1610	1.1655	1.1690	1.1957	1.1728	0.0156	0.0133
99%	1.3909	1.3858	1.3772	1.3920	1.3865	0.0067	0.0049
Kurtosis	0.46	0.22	0.30	0.33	0.33	0.10	
Skewness	0.73	0.69	0.68	0.72	0.71	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
SS036	6488.216521	0.04475	0.036	0.001597
SS037	1575.864674	0.72	0.009	0.006242
SS038	17405.809577	0.006	0.096	0.000575
SS039	17353.004956	0.00151	0.095	0.000144
SS040	15625.598882	0.465	0.086	0.039976
SS048	31548.248271	0.076	0.174	0.013192
SS058	11614.709052	2.135	0.064	0.136431
SS059	15852.512064	0.64	0.087	0.055819
SS060	27093.319353	0.215	0.149	0.032048
SS062	27960.866900	0.002925	0.154	0.000450
TC	9239.682604	110	0.051	5.591864
	181757.83	114.31	1.00	5.88

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0140	0.0148	0.0129	0.0099	0.0129	0.0021	0.1665
Max	50.0855	40.2219	40.3250	40.4545	42.7717	4.8768	0.1140
Average	6.2000	5.8727	5.8227	6.0449	5.9851	0.1720	0.0287
Std Dev	7.3648	7.2777	7.1631	7.4119	7.3044	0.1094	0.0150
1%	0.0649	0.0616	0.0623	0.0628	0.0629	0.0015	0.0232
5%	0.1109	0.1084	0.1105	0.1077	0.1094	0.0016	0.0144
10%	0.1479	0.1430	0.1432	0.1426	0.1442	0.0025	0.0172
15%	0.1783	0.1717	0.1724	0.1762	0.1747	0.0031	0.0180
20%	0.2173	0.2095	0.2072	0.2071	0.2103	0.0048	0.0229
25%	0.2590	0.2486	0.2550	0.2493	0.2530	0.0049	0.0194
30%	0.3007	0.2910	0.2964	0.2913	0.2949	0.0046	0.0156
35%	0.3387	0.3269	0.3299	0.3262	0.3304	0.0057	0.0173
40%	0.3791	0.3683	0.3711	0.3641	0.3706	0.0063	0.0171
45%	0.4489	0.4185	0.4269	0.4247	0.4297	0.0132	0.0308
50%	0.5550	0.5009	0.5080	0.5230	0.5217	0.0240	0.0460
55%	10.0632	0.6496	0.6801	0.7476	3.0351	4.6855	1.5438
60%	10.1268	10.1001	10.0972	10.1209	10.1113	0.0148	0.0015
65%	10.1722	10.1511	10.1495	10.1675	10.1601	0.0115	0.0011
70%	10.2326	10.2088	10.1989	10.2230	10.2158	0.0149	0.0015
75%	10.2972	10.2751	10.2693	10.2960	10.2844	0.0143	0.0014
80%	10.3485	10.3340	10.3266	10.3556	10.3412	0.0132	0.0013
85%	10.4552	10.4497	10.4144	10.4714	10.4477	0.0240	0.0023
90%	20.0809	20.0776	20.0361	20.0844	20.0698	0.0226	0.0011
95%	20.2737	20.2849	20.2584	20.3063	20.2808	0.0201	0.0010
97%	20.3969	20.3865	20.3606	20.4549	20.3997	0.0398	0.0020
99%	30.1762	30.1791	30.1165	30.1710	30.1607	0.0296	0.0010
Kurtosis	1.46	0.92	1.26	1.30	1.23	0.23	
Skewness	1.20	1.18	1.21	1.23	1.21	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
SS036	6488.216521	0.0475	0.036	0.001696
SS037	1575.864674	0.45	0.009	0.003902
SS038	17405.809577	0.01675	0.096	0.001604
SS039	17353.004956	0.00465	0.095	0.000444
SS040	15625.598882	0.38	0.086	0.032668
SS048	31548.248271	0.04925	0.174	0.008548
SS058	11614.709052	1.69	0.064	0.107995
SS059	15852.512064	0.4	0.087	0.034887
SS060	27093.319353	0.17	0.149	0.025341
SS062	27960.866900	0.00875	0.154	0.001346
TC	9239.682604	650	0.051	33.042833
	181,757.83	653.22	1.00	33.26

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0187	0.0223	0.0161	0.0159	0.0182	0.0030	0.1644
Max	236.7805	236.7376	236.8779	295.5815	251.4944	29.3914	0.1169
Average	34.6414	34.5923	34.1216	33.5153	34.2176	0.5236	0.0153
Std Dev	43.4291	43.7853	43.9475	43.7613	43.7308	0.2175	0.0050
1%	0.0521	0.0521	0.0516	0.0519	0.0519	0.0002	0.0042
5%	0.0872	0.0847	0.0832	0.0835	0.0847	0.0018	0.0216
10%	0.1093	0.1067	0.1085	0.1067	0.1078	0.0013	0.0120
15%	0.1336	0.1290	0.1283	0.1290	0.1300	0.0025	0.0189
20%	0.1562	0.1510	0.1525	0.1492	0.1522	0.0030	0.0196
25%	0.1917	0.1870	0.1949	0.1847	0.1896	0.0046	0.0243
30%	0.2290	0.2254	0.2290	0.2208	0.2260	0.0039	0.0172
35%	0.2571	0.2553	0.2549	0.2507	0.2545	0.0027	0.0106
40%	0.2891	0.2845	0.2811	0.2757	0.2826	0.0056	0.0200
45%	0.3288	0.3278	0.3198	0.3144	0.3227	0.0069	0.0213
50%	0.4085	0.4065	0.3967	0.3962	0.4019	0.0064	0.0160
55%	59.1340	0.6692	0.5656	0.5203	15.2223	29.2746	1.9231
60%	59.1850	59.1768	59.1719	59.1635	59.1743	0.0090	0.0002
65%	59.2161	59.2126	59.2071	59.1966	59.2081	0.0085	0.0001
70%	59.2588	59.2629	59.2518	59.2322	59.2514	0.0136	0.0002
75%	59.3182	59.3215	59.3163	59.2993	59.3138	0.0099	0.0002
80%	59.3606	59.3614	59.3632	59.3441	59.3573	0.0089	0.0001
85%	59.4596	59.4506	59.4536	59.4279	59.4479	0.0138	0.0002
90%	118.2463	118.2605	118.2568	118.2483	118.2530	0.0068	0.0001
95%	118.3991	118.4137	118.4083	118.4075	118.4071	0.0060	0.0001
97%	118.4852	118.4736	118.5130	118.5004	118.4931	0.0172	0.0001
99%	177.4038	177.3878	177.4295	177.3874	177.4021	0.0198	0.0001
Kurtosis	1.07	0.91	1.22	1.43	1.16	0.22	
Skewness	1.16	1.15	1.22	1.26	1.20	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
SS036	6488.216521	0.205	0.036	0.007318
SS037	1575.864674	0.815	0.009	0.007066
SS038	17405.809577	0.99	0.096	0.094806
SS039	17353.004956	0.14225	0.095	0.013581
SS040	15625.598882	4.85	0.086	0.416951
SS048	31548.248271	0.3125	0.174	0.054242
SS058	11614.709052	395	0.064	25.241334
SS059	15852.512064	3	0.087	0.261653
SS060	27093.319353	0.855	0.149	0.127449
SS062	27960.866900	0.004	0.154	0.000615
TC	9239.682604	71	0.051	3.609294
	181757.83	477.17	1.00	29.83

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1623	0.1722	0.1064	0.1626	0.1509	0.0300	0.1988
Max	150.8311	180.5524	151.0649	186.0918	167.1351	18.8277	0.1126
Average	28.6410	28.2892	28.6862	29.7611	28.8444	0.6364	0.0221
Std Dev	27.9236	28.4302	28.3418	29.0019	28.4244	0.4439	0.0156
1%	0.4001	0.3789	0.4009	0.3947	0.3936	0.0102	0.0259
5%	0.6862	0.7017	0.7250	0.7193	0.7080	0.0176	0.0249
10%	0.9246	0.9389	0.9777	0.9400	0.9453	0.0227	0.0240
15%	1.1355	1.1514	1.1846	1.1562	1.1569	0.0204	0.0177
20%	1.3928	1.3686	1.4166	1.4205	1.3996	0.0241	0.0172
25%	1.8883	1.8450	1.9729	1.9617	1.9170	0.0610	0.0318
30%	7.0999	7.0462	7.1490	7.1420	7.1093	0.0473	0.0067
35%	7.4350	7.3830	7.4648	7.4607	7.4359	0.0376	0.0051
40%	7.8192	7.6831	7.7911	7.8753	7.7922	0.0807	0.0104
45%	13.5844	13.0964	13.5086	13.7850	13.4936	0.2894	0.0214
50%	36.1564	14.5311	19.9446	36.3505	26.7456	11.1992	0.4187
55%	36.6574	36.5608	36.5642	36.6820	36.6161	0.0627	0.0017
60%	36.9106	36.8458	36.8498	36.9351	36.8853	0.0445	0.0012
65%	37.2011	37.1952	37.1716	37.2477	37.2039	0.0319	0.0009
70%	38.1781	38.0381	37.8468	42.6407	39.1759	2.3138	0.0591
75%	43.1298	43.1395	43.1241	43.2317	43.1562	0.0507	0.0012
80%	43.6447	43.6830	43.7202	43.8841	43.7330	0.1053	0.0024
85%	49.9910	49.9700	55.7157	72.0572	56.9334	10.4387	0.1833
90%	72.7371	72.7715	72.7944	72.8938	72.7992	0.0673	0.0009
95%	79.0342	79.1916	79.0292	79.2338	79.1222	0.1059	0.0013
97%	80.3125	85.5718	85.2144	85.7089	84.2019	2.6013	0.0309
99%	114.4537	114.7541	109.3427	114.8069	113.3394	2.6690	0.0235
Kurtosis	0.56	1.01	0.70	1.00	0.82	0.23	
Skewness	0.97	1.08	1.02	1.04	1.03	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Process Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
SL	1144.969697	0.000510991	0.006	0.000003
SS037	24491.894904	0.00075937	0.135	0.000102
SS038	55187.538068	0.00084781	0.304	0.000257
SS041	483.671186	0.001114581	0.003	0.000003
SS058	33427.001021	0.05438542	0.184	0.010002
SS062	54855.036064	0.000826882	0.302	0.000250
SS095	1867.821307	0.003101134	0.010	0.000032
TC	10299.900602	0.012930695	0.057	0.000733
	181757.83	0.07	1.00	0.01

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0007	0.0008	0.0008	0.0008	0.0008	0.0000	0.0144
Max	0.0425	0.0410	0.0410	0.0425	0.0418	0.0009	0.0209
Average	0.0114	0.0114	0.0115	0.0117	0.0115	0.0001	0.0105
Std Dev	0.0073	0.0071	0.0075	0.0074	0.0073	0.0002	0.0206
1%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0016
5%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0016
10%	0.0010	0.0011	0.0008	0.0011	0.0010	0.0001	0.1234
15%	0.0023	0.0023	0.0023	0.0023	0.0023	0.0000	0.0013
20%	0.0075	0.0075	0.0054	0.0075	0.0070	0.0011	0.1518
25%	0.0075	0.0075	0.0075	0.0075	0.0075	0.0000	0.0002
30%	0.0075	0.0075	0.0075	0.0075	0.0075	0.0000	0.0002
35%	0.0075	0.0075	0.0075	0.0075	0.0075	0.0000	0.0002
40%	0.0078	0.0078	0.0078	0.0078	0.0078	0.0000	0.0015
45%	0.0090	0.0090	0.0090	0.0090	0.0090	0.0000	0.0002
50%	0.0090	0.0090	0.0090	0.0090	0.0090	0.0000	0.0002
55%	0.0106	0.0142	0.0142	0.0142	0.0133	0.0018	0.1357
60%	0.0142	0.0142	0.0142	0.0142	0.0142	0.0000	0.0001
65%	0.0142	0.0142	0.0142	0.0142	0.0142	0.0000	0.0001
70%	0.0142	0.0142	0.0142	0.0142	0.0142	0.0000	0.0002
75%	0.0157	0.0157	0.0157	0.0157	0.0157	0.0000	0.0002
80%	0.0157	0.0157	0.0157	0.0172	0.0161	0.0007	0.0464
85%	0.0209	0.0209	0.0209	0.0209	0.0209	0.0000	0.0001
90%	0.0209	0.0209	0.0209	0.0209	0.0209	0.0000	0.0001
95%	0.0230	0.0224	0.0239	0.0239	0.0233	0.0007	0.0319
97%	0.0276	0.0276	0.0276	0.0276	0.0276	0.0000	0.0001
99%	0.0291	0.0291	0.0343	0.0291	0.0304	0.0026	0.0844
Kurtosis	0.07	-0.10	0.08	-0.02	0.01	0.08	
Skewness	0.57	0.49	0.57	0.54	0.54	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS035	3164.050371	1.14	0.014	0.016492
SS036	5456.950320	3.35	0.025	0.083584
SS054	26963.910805	1.675	0.123	0.206504
SS057	23684.943782	0.1675	0.108	0.018139
SS058	19353.582403	1.85	0.088	0.163706
SS058	1360.993807	1.85	0.006	0.011512
SS059	7215.981807	3.05	0.033	0.100630
SS071	15258.224184	0.18	0.070	0.012558
SS072	10539.996087	0.665	0.048	0.032047
SS080	11679.295917	0.3025	0.053	0.016154
SS081	17233.390334	0.4025	0.079	0.031715
SS082	17020.322885	0.56	0.078	0.043580
SS083	8265.649589	1.1	0.038	0.041572
SS098	28107.674603	0.1925	0.129	0.024739
SS099	23405.405179	0.19	0.107	0.020333
	218710.37	16.68	1.00	0.82

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2338	0.2423	0.2488	0.2468	0.2430	0.0067	0.0274
Max	1.7415	1.6710	1.8962	1.7468	1.7639	0.0947	0.0537
Average	0.8161	0.8169	0.8190	0.8172	0.8173	0.0012	0.0015
Std Dev	0.2148	0.2177	0.2191	0.2153	0.2167	0.0020	0.0094
1%	0.3713	0.3718	0.3670	0.3800	0.3725	0.0054	0.0146
5%	0.4767	0.4855	0.4831	0.4823	0.4819	0.0037	0.0078
10%	0.5488	0.5532	0.5440	0.5471	0.5483	0.0038	0.0070
15%	0.5957	0.5937	0.5888	0.5938	0.5930	0.0029	0.0050
20%	0.6340	0.6291	0.6296	0.6348	0.6319	0.0029	0.0046
25%	0.6650	0.6606	0.6614	0.6642	0.6628	0.0021	0.0032
30%	0.6940	0.6917	0.6937	0.6946	0.6935	0.0012	0.0018
35%	0.7221	0.7198	0.7260	0.7243	0.7230	0.0027	0.0037
40%	0.7498	0.7483	0.7527	0.7486	0.7498	0.0020	0.0027
45%	0.7769	0.7761	0.7805	0.7745	0.7770	0.0025	0.0033
50%	0.8059	0.8012	0.8075	0.8005	0.8038	0.0035	0.0043
55%	0.8339	0.8302	0.8355	0.8298	0.8324	0.0028	0.0033
60%	0.8582	0.8583	0.8648	0.8584	0.8599	0.0033	0.0038
65%	0.8883	0.8884	0.8957	0.8904	0.8907	0.0034	0.0039
70%	0.9193	0.9217	0.9288	0.9215	0.9228	0.0041	0.0045
75%	0.9544	0.9548	0.9630	0.9594	0.9579	0.0041	0.0043
80%	0.9929	0.9940	1.0020	1.0000	0.9972	0.0045	0.0045
85%	1.0365	1.0400	1.0477	1.0450	1.0423	0.0050	0.0048
90%	1.0929	1.1089	1.1033	1.1023	1.1019	0.0066	0.0060
95%	1.1932	1.2023	1.2005	1.1882	1.1961	0.0066	0.0055
97%	1.2520	1.2625	1.2578	1.2540	1.2566	0.0046	0.0037
99%	1.3747	1.3805	1.3587	1.3640	1.3695	0.0099	0.0073
Kurtosis	0.13	0.10	0.06	0.05	0.09	0.04	
Skewness	0.34	0.38	0.32	0.35	0.35	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
SS035	3164.050372	7.25	0.014	0.104885
SS036	5456.950320	109.25	0.025	2.725851
SS054	26963.910805	22.25	0.123	2.743112
SS057	23684.943782	8.8	0.108	0.952984
SS058	19353.582403	149	0.088	13.184943
SS058	1360.993807	149	0.006	0.927199
SS059	7215.981807	200	0.033	6.598664
SS071	15258.224184	5.35	0.070	0.373240
SS072	10539.996087	61	0.048	2.939686
SS080	11679.295917	3.1875	0.053	0.170215
SS081	17233.390334	12.4	0.079	0.977064
SS082	17020.322885	26.5	0.078	2.062264
SS083	8265.649589	45.5	0.038	1.719567
SS098	28107.674603	4.9	0.129	0.629726
SS099	23405.405179	8.4	0.107	0.898930
	218,710.37	812.79	1.00	37.01

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	7.3683	7.6408	7.5517	6.2150	7.1940	0.6624	0.0921
Max	102.4733	99.3967	93.4333	96.1733	97.8692	3.9194	0.0400
Average	36.4317	36.4797	36.6029	36.5146	36.5072	0.0723	0.0020
Std Dev	13.4165	13.5822	13.6045	13.3120	13.4788	0.1393	0.0103
1%	11.5556	11.6239	11.1058	11.6248	11.4775	0.2499	0.0218
5%	16.1065	16.3225	15.9582	16.2675	16.1637	0.1648	0.0102
10%	19.9941	19.9992	19.8758	20.3212	20.0475	0.1911	0.0095
15%	22.4460	22.4020	22.2517	22.7223	22.4555	0.1963	0.0087
20%	24.5457	24.5453	24.3872	24.7665	24.5612	0.1559	0.0063
25%	26.5377	26.4296	26.5233	26.8129	26.5759	0.1651	0.0062
30%	28.3680	28.3448	28.6456	28.7903	28.5372	0.2171	0.0076
35%	30.1716	30.1038	30.3116	30.6025	30.2974	0.2211	0.0073
40%	31.9915	31.9367	32.0380	32.0780	32.0110	0.0609	0.0019
45%	33.5317	33.6156	33.9703	33.6013	33.6797	0.1972	0.0059
50%	35.2925	35.3833	35.5912	35.2779	35.3862	0.1444	0.0041
55%	37.1208	37.1493	37.3358	36.8629	37.1172	0.1945	0.0052
60%	38.9840	38.9662	39.2020	38.7275	38.9699	0.1939	0.0050
65%	40.8262	40.8099	41.2115	40.6073	40.8637	0.2523	0.0062
70%	42.8960	42.8842	43.2474	42.9068	42.9836	0.1761	0.0041
75%	45.1485	44.9477	45.3444	44.8681	45.0772	0.2137	0.0047
80%	47.6188	47.1907	47.9867	47.2565	47.5132	0.3675	0.0077
85%	50.7912	50.4665	51.1048	50.6343	50.7492	0.2716	0.0054
90%	54.4457	54.9931	55.1472	54.4902	54.7690	0.3538	0.0065
95%	60.0533	60.7690	60.3235	60.1794	60.3313	0.3120	0.0052
97%	64.0059	64.8627	63.7635	64.0935	64.1814	0.4751	0.0074
99%	70.6894	72.4992	72.0243	71.0815	71.5736	0.8334	0.0116
Kurtosis	0.09	0.25	0.01	0.18	0.13	0.11	
Skewness	0.47	0.54	0.44	0.50	0.49	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
SS035	3164.050371	13.2	0.014	0.190962
SS036	5456.950320	110	0.025	2.744564
SS054	26963.910805	33.75	0.123	4.160900
SS057	23684.943782	18	0.108	1.949286
SS058	19353.582403	199.5	0.088	17.653665
SS058	1360.993807	199.5	0.006	1.241451
SS059	7215.981807	230	0.033	7.588464
SS071	15258.224184	9.4	0.070	0.655786
SS072	10539.996087	70.5	0.048	3.397506
SS080	11679.295917	6.95	0.053	0.371135
SS081	17233.390334	19.5	0.079	1.536512
SS082	17020.322885	12.5	0.078	0.972766
SS083	8265.649589	59.5	0.038	2.248664
SS098	28107.674603	9.2	0.129	1.182343
SS099	23405.405179	15.4	0.107	1.648039
	218710.37	1006.90	1.00	47.54

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	11.8533	13.1533	11.0733	10.6833	11.6908	1.0896	0.0932
Max	118.9967	125.7667	115.2467	112.5467	118.1392	5.7317	0.0485
Average	46.5702	46.7832	46.6216	47.2470	46.8055	0.3080	0.0066
Std Dev	16.7779	16.5116	16.0795	16.6667	16.5089	0.3064	0.0186
1%	16.7665	16.3965	17.0863	16.3431	16.6481	0.3475	0.0209
5%	21.5630	21.9517	22.0358	22.1033	21.9135	0.2417	0.0110
10%	26.1533	26.9180	27.2167	27.0833	26.8428	0.4756	0.0177
15%	29.5162	29.8700	30.2328	30.1432	29.9405	0.3223	0.0108
20%	31.9633	32.2327	32.4033	32.4267	32.2565	0.2137	0.0066
25%	33.9300	34.2433	34.5783	34.5700	34.3304	0.3092	0.0090
30%	36.1647	36.4570	36.7813	36.8200	36.5558	0.3074	0.0084
35%	38.3255	39.0122	38.8408	39.5700	38.9371	0.5130	0.0132
40%	40.7827	41.1787	41.2107	41.9067	41.2697	0.4672	0.0113
45%	42.9337	43.3185	43.2433	43.9752	43.3677	0.4379	0.0101
50%	44.7283	45.3233	45.1517	45.7467	45.2375	0.4216	0.0093
55%	46.7280	47.3482	47.0530	47.8927	47.2555	0.4946	0.0105
60%	48.9620	49.6247	49.3593	50.0947	49.5102	0.4754	0.0096
65%	51.6778	52.1612	52.1993	52.6523	52.1727	0.3982	0.0076
70%	54.5873	54.6887	54.6597	55.1830	54.7797	0.2722	0.0050
75%	57.4125	57.3208	57.1983	58.1458	57.5194	0.4268	0.0074
80%	60.5507	60.5280	60.0620	60.7953	60.4840	0.3063	0.0051
85%	64.5015	64.0767	63.4967	64.8553	64.2325	0.5848	0.0091
90%	69.3333	69.2910	68.5283	69.9610	69.2784	0.5864	0.0085
95%	76.4175	75.9778	75.2702	76.7347	76.1000	0.6343	0.0083
97%	82.3742	80.4744	79.6257	82.2560	81.1826	1.3537	0.0167
99%	90.3401	90.1984	87.5304	91.0267	89.7739	1.5388	0.0171
Kurtosis	0.09	0.19	-0.02	0.04	0.08	0.09	
Skewness	0.54	0.52	0.46	0.48	0.50	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS035	3164.050371	160	0.014	2.314696
SS036	5456.950320	15.75	0.025	0.392972
SS054	26963.910805	152.5	0.123	18.801104
SS057	23684.943782	406.5	0.108	44.021367
SS058	19353.582403	83.5	0.088	7.388877
SS058	1360.993807	83.5	0.006	0.519605
SS059	7215.981807	27	0.033	0.890820
SS071	15258.224184	60.5	0.070	4.220753
SS072	10539.996087	35	0.048	1.686705
SS080	11679.295917	89.25	0.053	4.766016
SS081	17233.390334	17.5	0.079	1.378921
SS082	17020.322885	28.5	0.078	2.217907
SS083	8265.649589	15	0.038	0.566890
SS098	28107.674603	7.95	0.129	1.021698
SS099	23405.405179	14.6	0.107	1.562427
	218710.37	1197.05	1.00	91.75

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	16.6867	18.6267	15.4900	21.5200	18.0808	2.6320	0.1456
Max	247.6967	224.1300	225.5567	207.7067	226.2725	16.4194	0.0726
Average	90.9993	90.3419	90.1210	90.4562	90.4796	0.3734	0.0041
Std Dev	30.6466	30.0442	30.7367	30.3465	30.4435	0.3141	0.0103
1%	35.1828	34.0631	32.9032	33.5630	33.9280	0.9620	0.0284
5%	44.9195	44.7948	44.4690	44.7835	44.7417	0.1920	0.0043
10%	53.9290	52.5620	52.4530	52.9133	52.9643	0.6724	0.0127
15%	60.1293	58.9028	58.3770	59.0628	59.1180	0.7351	0.0124
20%	64.5327	64.0553	63.2207	64.2053	64.0035	0.5587	0.0087
25%	68.5875	68.6400	67.4858	69.1142	68.4569	0.6893	0.0101
30%	72.4523	72.8467	71.4927	72.4623	72.3135	0.5772	0.0080
35%	76.3673	76.7217	75.5928	76.2287	76.2276	0.4714	0.0062
40%	80.4233	80.5520	79.6013	80.0200	80.1492	0.4298	0.0054
45%	84.6433	84.3933	83.4350	83.8437	84.0788	0.5439	0.0065
50%	88.2350	88.1750	87.6483	87.9183	87.9942	0.2684	0.0030
55%	92.8308	92.2497	91.4493	91.5512	92.0202	0.6470	0.0070
60%	96.6213	96.1140	95.9913	96.0347	96.1903	0.2918	0.0030
65%	100.9403	100.2178	99.7237	100.0938	100.2439	0.5095	0.0051
70%	105.1043	104.1653	104.9287	104.5377	104.6840	0.4191	0.0040
75%	110.1417	108.8708	109.8750	109.4133	109.5752	0.5577	0.0051
80%	115.2533	114.5900	115.9740	115.3140	115.2828	0.5656	0.0049
85%	122.1062	121.6782	121.9917	122.2343	122.0026	0.2379	0.0020
90%	131.0790	130.4193	131.6080	130.8450	130.9878	0.4955	0.0038
95%	145.5228	143.0277	144.0648	144.7437	144.3397	1.0583	0.0073
97%	155.7570	151.1476	153.4318	152.8901	153.3066	1.9022	0.0124
99%	171.3617	171.9369	171.8070	170.7314	171.4592	0.5442	0.0032
Kurtosis	0.47	0.16	0.17	0.17	0.24	0.15	
Skewness	0.57	0.47	0.50	0.50	0.51	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS035	3164.050371	0.27	0.014	0.003906
SS036	5456.950320	0.0475	0.025	0.001185
SS054	26963.910805	0.2975	0.123	0.036678
SS057	23684.943782	0.0635	0.108	0.006877
SS058	19353.582403	0.985	0.088	0.087162
SS058	1360.993807	0.985	0.006	0.006129
SS059	7215.981807	1.72	0.033	0.056749
SS071	15258.224184	0.0625	0.070	0.004360
SS072	10539.996087	1.315	0.048	0.063372
SS080	11679.295917	0.10125	0.053	0.005407
SS081	17233.390334	0.455	0.079	0.035852
SS082	17020.322885	0.525	0.078	0.040856
SS083	8265.649589	0.21	0.038	0.007936
SS098	28107.674603	0.14	0.129	0.017992
SS099	23405.405179	1.17	0.107	0.125208
	218710.37	8.35	1.00	0.50

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1371	0.1494	0.1602	0.1402	0.1467	0.0104	0.0706
Max	0.9712	0.9837	1.0116	1.0297	0.9991	0.0265	0.0265
Average	0.4988	0.4991	0.4947	0.4994	0.4980	0.0022	0.0045
Std Dev	0.1193	0.1216	0.1215	0.1229	0.1213	0.0015	0.0124
1%	0.2484	0.2416	0.2420	0.2431	0.2438	0.0032	0.0129
5%	0.3093	0.3070	0.3041	0.3038	0.3061	0.0026	0.0085
10%	0.3483	0.3435	0.3405	0.3412	0.3434	0.0035	0.0102
15%	0.3740	0.3700	0.3669	0.3728	0.3709	0.0032	0.0086
20%	0.3949	0.3937	0.3896	0.3946	0.3932	0.0025	0.0063
25%	0.4140	0.4131	0.4098	0.4105	0.4118	0.0020	0.0049
30%	0.4320	0.4329	0.4283	0.4279	0.4303	0.0025	0.0059
35%	0.4474	0.4502	0.4443	0.4462	0.4470	0.0025	0.0055
40%	0.4639	0.4636	0.4597	0.4636	0.4627	0.0020	0.0044
45%	0.4796	0.4795	0.4752	0.4789	0.4783	0.0021	0.0044
50%	0.4944	0.4952	0.4888	0.4945	0.4932	0.0030	0.0060
55%	0.5114	0.5118	0.5046	0.5119	0.5099	0.0035	0.0069
60%	0.5269	0.5264	0.5181	0.5273	0.5247	0.0044	0.0084
65%	0.5435	0.5440	0.5353	0.5431	0.5415	0.0041	0.0076
70%	0.5601	0.5604	0.5546	0.5609	0.5590	0.0030	0.0053
75%	0.5793	0.5789	0.5740	0.5803	0.5781	0.0028	0.0049
80%	0.5985	0.6008	0.5947	0.6010	0.5987	0.0029	0.0049
85%	0.6232	0.6267	0.6211	0.6302	0.6253	0.0040	0.0064
90%	0.6538	0.6592	0.6554	0.6618	0.6575	0.0036	0.0055
95%	0.6972	0.7077	0.7063	0.7073	0.7046	0.0050	0.0071
97%	0.7297	0.7360	0.7363	0.7402	0.7356	0.0043	0.0059
99%	0.7926	0.7928	0.7951	0.8047	0.7963	0.0057	0.0071
Kurtosis	0.00	-0.07	0.00	-0.07	-0.03	0.04	
Skewness	0.23	0.20	0.27	0.25	0.24	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
PA	12209.720393	87.92	0.056	4.908220
SS035	3164.050376	1.45637	0.014	0.021069
SS036	5415.502346	0.715355	0.025	0.017713
SS054	25211.779239	2.877075	0.115	0.331654
SS057	20289.371341	0.087378575	0.093	0.008106
SS058	10902.631502	83.9465	0.050	4.184702
SS059	7206.618156	7.25605	0.033	0.239091
SS071	15258.224184	0.40816	0.070	0.028475
SS072	6997.066489	4.1758	0.032	0.133594
SS080	11679.295917	0.53064	0.053	0.028337
SS081	17233.390334	3.6713	0.079	0.289282
SS082	15717.941586	193.04	0.072	13.873435
SS083	7424.240165	298.17	0.034	10.121514
SS098	23596.672441	594.88	0.108	64.181863
SS099	16180.377675	1189.05	0.074	87.966842
TC	20223.489895	2375.22	0.092	219.629518
	218710.37	4843.41	1.00	405.96

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	11.9841	12.4244	7.0757	7.8058	9.8225	2.7721	0.2822
Max	1192.6061	1137.0183	1244.2450	1088.2283	1165.5244	67.6206	0.0580
Average	395.3805	401.5463	399.3335	395.1252	397.8464	3.1298	0.0079
Std Dev	178.3284	177.9440	177.1013	172.7393	176.5282	2.5775	0.0146
1%	64.9199	72.5145	68.1111	67.1701	68.1789	3.1854	0.0467
5%	135.7874	135.5507	134.4987	130.4599	134.0742	2.4738	0.0185
10%	178.2858	179.3293	180.2619	185.2425	180.7799	3.0826	0.0171
15%	211.4341	216.1458	216.4804	216.6505	215.1777	2.5045	0.0116
20%	240.2820	245.5922	246.8553	245.5099	244.5599	2.9176	0.0119
25%	264.6444	270.9054	267.0606	266.7487	267.3398	2.6081	0.0098
30%	290.3022	294.8742	291.4617	290.7906	291.8572	2.0668	0.0071
35%	313.1720	318.3332	315.5176	314.4646	315.3718	2.1949	0.0070
40%	333.5296	340.9925	339.4192	334.9233	337.2161	3.5572	0.0105
45%	353.4772	365.4250	363.2661	358.4255	360.1484	5.3240	0.0148
50%	377.5654	388.5123	384.6206	382.0234	383.1804	4.5960	0.0120
55%	400.2468	408.6327	407.2403	402.8117	404.7329	3.8864	0.0096
60%	422.7961	431.8876	431.1645	425.3825	427.8077	4.4313	0.0104
65%	446.2923	458.0139	457.0160	451.7549	453.2693	5.4012	0.0119
70%	475.9076	487.5920	481.8626	476.0590	480.3553	5.5642	0.0116
75%	506.9724	513.9846	511.5272	506.7828	509.8168	3.5399	0.0069
80%	543.6466	545.5673	544.6778	538.7257	543.1544	3.0550	0.0056
85%	581.7858	588.0109	582.3976	575.8703	582.0161	4.9634	0.0085
90%	637.2285	642.4065	636.7895	624.8741	635.3247	7.4193	0.0117
95%	715.9164	712.5088	717.2175	698.3666	711.0023	8.6546	0.0122
97%	766.1900	767.2088	765.9703	754.5264	763.4739	5.9893	0.0078
99%	866.9308	877.3601	866.4557	838.6639	862.3526	16.5748	0.0192
Kurtosis	0.25	0.11	0.14	0.05	0.14	0.08	
Skewness	0.56	0.49	0.50	0.46	0.50	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS035	3164.050371	0.039	0.014	0.000564
SS036	5456.950320	0.053	0.025	0.001322
SS054	26963.910805	0.3225	0.123	0.039760
SS057	23684.943782	0.00875	0.108	0.000948
SS058	19353.582403	3.4	0.088	0.300864
SS058	1360.993807	3.4	0.006	0.021158
SS059	7215.981807	0.515	0.033	0.016992
SS071	15258.224184	0.0165	0.070	0.001151
SS072	10539.996087	0.435	0.048	0.020963
SS080	11679.295917	0.04075	0.053	0.002176
SS081	17233.390334	0.17	0.079	0.013395
SS082	17020.322885	12.195	0.078	0.949031
SS083	8265.649589	0.125	0.038	0.004724
SS098	28107.674603	0.05	0.129	0.006426
SS099	23405.405179	0.28	0.107	0.029964
	218710.37	21.05	1.00	1.41

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0923	0.0563	0.0718	0.0555	0.0690	0.0173	0.2501
Max	5.7731	5.4074	4.9870	5.7995	5.4917	0.3812	0.0694
Average	1.4456	1.4253	1.4547	1.4392	1.4412	0.0124	0.0086
Std Dev	0.8580	0.8523	0.8551	0.8729	0.8596	0.0092	0.0107
1%	0.1388	0.1327	0.1336	0.1280	0.1333	0.0044	0.0332
5%	0.2342	0.2124	0.2331	0.1928	0.2181	0.0196	0.0900
10%	0.3791	0.3735	0.3797	0.3680	0.3751	0.0055	0.0146
15%	0.4808	0.4359	0.4918	0.4275	0.4590	0.0320	0.0698
20%	0.6097	0.6057	0.6172	0.5963	0.6072	0.0087	0.0143
25%	0.8167	0.8224	0.8390	0.7898	0.8170	0.0204	0.0250
30%	0.9595	0.9579	0.9607	0.9502	0.9571	0.0047	0.0049
35%	1.0309	1.0148	1.0456	1.0250	1.0291	0.0128	0.0125
40%	1.1647	1.1567	1.1702	1.1642	1.1639	0.0056	0.0048
45%	1.2007	1.1940	1.2109	1.1992	1.2012	0.0071	0.0059
50%	1.3475	1.2542	1.3629	1.3422	1.3267	0.0491	0.0370
55%	1.4085	1.3928	1.4111	1.4062	1.4046	0.0081	0.0058
60%	1.5919	1.4537	1.5943	1.5908	1.5577	0.0693	0.0445
65%	1.7469	1.7157	1.7607	1.7505	1.7434	0.0194	0.0111
70%	1.8372	1.8099	1.8797	1.8434	1.8425	0.0287	0.0156
75%	1.9872	1.9756	1.9930	1.9888	1.9862	0.0075	0.0038
80%	2.1602	2.0685	2.1662	2.1651	2.1400	0.0477	0.0223
85%	2.2769	2.2395	2.2815	2.3594	2.2893	0.0504	0.0220
90%	2.6131	2.6006	2.6153	2.6254	2.6136	0.0102	0.0039
95%	2.9952	2.9970	3.0020	3.0010	2.9988	0.0032	0.0011
97%	3.3682	3.3269	3.3581	3.3608	3.3535	0.0183	0.0054
99%	3.7894	3.7763	3.8030	3.7847	3.7883	0.0112	0.0030
Kurtosis	0.38	0.36	0.19	0.42	0.34	0.10	
Skewness	0.69	0.71	0.65	0.69	0.68	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
PA	12209.720393	39	0.056	2.177213
SS035	3164.050372	0.0405	0.014	0.000586
SS036	5415.502346	0.04475	0.025	0.001108
SS054	25211.779239	0.57	0.115	0.065707
SS057	20289.371341	0.0111325	0.093	0.001033
SS058	10902.631502	2.135	0.050	0.106429
SS059	7206.618156	0.64	0.033	0.021088
SS071	15258.224184	0.031	0.070	0.002163
SS072	6997.066489	0.028	0.032	0.000896
SS080	11679.295917	0.0505	0.053	0.002697
SS081	17233.390334	0.245	0.079	0.019305
SS082	15717.941586	2.75145	0.072	0.197737
SS083	7424.240165	0.325	0.034	0.011032
SS098	23596.672441	0.032	0.108	0.003452
SS099	16180.377675	0.2715	0.074	0.020086
TC	20223.489895	110	0.092	10.171369
	218,710.37	156.18	1.00	12.80

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0526	0.0947	0.0992	0.0755	0.0805	0.0213	0.2640
Max	50.9304	53.1369	48.7726	46.4128	49.8132	2.8833	0.0579
Average	12.6810	12.5092	12.7130	12.4719	12.5937	0.1209	0.0096
Std Dev	8.0190	7.7755	7.9577	7.8540	7.9015	0.1082	0.0137
1%	0.3110	0.3195	0.3116	0.3191	0.3153	0.0046	0.0147
5%	0.6238	0.6065	0.6395	0.6126	0.6206	0.0145	0.0233
10%	2.8453	2.8165	2.8369	2.7857	2.8211	0.0265	0.0094
15%	3.2160	3.2151	3.2531	3.1572	3.2103	0.0396	0.0123
20%	6.9901	5.6667	5.6604	5.5608	5.9695	0.6821	0.1143
25%	7.2842	7.3111	7.2802	7.2782	7.2884	0.0153	0.0021
30%	7.5115	7.5135	7.4884	7.5069	7.5051	0.0114	0.0015
35%	9.4529	9.5138	9.4347	9.4714	9.4682	0.0339	0.0036
40%	9.6958	9.7302	9.7055	9.7203	9.7130	0.0153	0.0016
45%	9.9194	9.9150	9.9558	9.9141	9.9261	0.0200	0.0020
50%	12.0241	12.0126	12.1127	11.9430	12.0231	0.0697	0.0058
55%	12.5173	12.4194	13.9292	12.4047	12.8176	0.7427	0.0579
60%	14.1776	14.1756	14.2221	14.1590	14.1836	0.0270	0.0019
65%	14.5073	14.4315	14.5721	14.4828	14.4984	0.0584	0.0040
70%	16.5055	16.4620	16.5257	16.4710	16.4911	0.0298	0.0018
75%	16.7891	16.7363	16.8180	16.7216	16.7663	0.0451	0.0027
80%	19.0875	18.9933	19.1043	18.9846	19.0424	0.0622	0.0033
85%	21.1095	21.0821	21.1475	21.0553	21.0986	0.0394	0.0019
90%	23.4299	23.3545	23.4117	23.3456	23.3854	0.0417	0.0018
95%	27.8297	26.2912	27.8281	27.6201	27.3923	0.7406	0.0270
97%	30.2263	28.3346	30.2084	30.0400	29.7023	0.9157	0.0308
99%	35.0170	32.8277	34.6623	34.8272	34.3336	1.0143	0.0295
Kurtosis	0.38	0.33	0.23	0.31	0.31	0.06	
Skewness	0.68	0.61	0.62	0.63	0.64	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
PA	12209.720393	120	0.056	6.699117
SS035	3164.050372	0.024	0.014	0.000347
SS036	5415.502346	0.0475	0.025	0.001176
SS054	25211.779239	0.3675	0.115	0.042363
SS057	20289.371341	0.0107	0.093	0.000993
SS058	10902.631502	1.69	0.050	0.084246
SS059	7206.618156	0.4	0.033	0.013180
SS071	15258.224184	0.0295	0.070	0.002058
SS072	6997.066489	0.085	0.032	0.002719
SS080	11679.295917	0.033	0.053	0.001762
SS081	17233.390334	0.165	0.079	0.013001
SS082	15717.941586	5.565	0.072	0.399937
SS083	7424.240165	0.19	0.034	0.006450
SS098	23596.672441	0.019	0.108	0.002050
SS099	16180.377675	0.1405	0.074	0.010394
TC	20223.489895	650	0.092	60.103544
	218,710.37	778.77	1.00	67.38

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0704	0.0572	0.0620	0.0484	0.0595	0.0092	0.1545
Max	293.0507	284.9676	332.5598	285.4682	299.0116	22.6692	0.0758
Average	66.5476	65.4940	65.5871	64.7083	65.5842	0.7536	0.0115
Std Dev	46.2773	46.2107	45.6291	45.6264	45.9359	0.3568	0.0078
1%	0.3037	0.2064	0.2290	0.2587	0.2494	0.0420	0.1686
5%	0.8198	0.7982	0.8659	0.8902	0.8435	0.0420	0.0498
10%	7.9487	7.9397	7.9726	7.9512	7.9531	0.0140	0.0018
15%	8.9456	8.4060	8.7202	8.4861	8.6395	0.2438	0.0282
20%	22.9763	15.8320	22.5700	15.8556	19.3085	4.0041	0.2074
25%	41.0299	40.8628	40.9422	40.8527	40.9219	0.0824	0.0020
30%	41.3983	41.2318	41.2846	41.2296	41.2860	0.0790	0.0019
35%	48.2014	41.9403	42.1330	42.1021	43.5942	3.0726	0.0705
40%	48.5902	48.5713	48.5765	48.5623	48.5751	0.0117	0.0002
45%	48.9782	48.9388	48.9429	48.9085	48.9421	0.0285	0.0006
50%	56.0446	55.9123	55.8431	55.7525	55.8881	0.1231	0.0022
55%	63.3195	63.2157	56.9264	56.7092	60.0427	3.7251	0.0620
60%	81.6753	81.5686	81.5224	81.4288	81.5488	0.1024	0.0013
65%	82.1022	82.1004	82.0701	81.8980	82.0427	0.0975	0.0012
70%	89.0427	88.9950	89.0135	88.8913	88.9856	0.0659	0.0007
75%	89.5759	89.5776	89.5489	89.4066	89.5273	0.0815	0.0009
80%	96.7937	96.8610	96.7525	96.6649	96.7680	0.0820	0.0008
85%	122.3246	122.3007	122.2974	122.0358	122.2396	0.1364	0.0011
90%	129.8944	129.7938	129.6602	129.5887	129.7343	0.1365	0.0011
95%	162.6534	144.6520	137.8147	144.7584	147.4696	10.6310	0.0721
97%	170.4075	163.8042	163.2661	164.0295	165.3768	3.3691	0.0204
99%	186.0135	192.6076	185.9172	185.4860	187.5061	3.4088	0.0182
Kurtosis	0.24	0.20	0.50	0.43	0.34	0.15	
Skewness	0.67	0.65	0.70	0.71	0.68	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
PA	12209.720393	39	0.056	2.177213
SS035	3164.050376	0.111875	0.014	0.001618
SS036	5415.502346	0.205	0.025	0.005076
SS054	25211.779239	0.2105	0.115	0.024265
SS057	20289.371341	0.0705	0.093	0.006540
SS058	10902.631502	395	0.050	19.690605
SS059	7206.618156	3	0.033	0.098852
SS071	15258.224184	0.03	0.070	0.002093
SS072	6997.066489	8.15	0.032	0.260738
SS080	11679.295917	0.124	0.053	0.006622
SS081	17233.390334	0.13	0.079	0.010243
SS082	15717.941586	2.105	0.072	0.151279
SS083	7424.240165	0.825	0.034	0.028005
SS098	23596.672441	0.0020975	0.108	0.000226
SS099	16180.377675	10.004	0.074	0.740104
TC	20223.489895	71	0.092	6.565156
	218710.37	529.97	1.00	29.77

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1524	0.1312	0.1387	0.2158	0.1596	0.0385	0.2415
Max	153.5052	151.4367	126.6695	139.2908	142.7256	12.4054	0.0869
Average	28.2269	27.7076	27.3558	28.1432	27.8584	0.4051	0.0145
Std Dev	20.9063	21.0496	20.2769	21.0242	20.8142	0.3636	0.0175
1%	1.3268	1.2585	1.1026	1.1739	1.2155	0.0979	0.0805
5%	4.0563	3.6638	4.1185	3.8113	3.9125	0.2123	0.0543
10%	5.9178	5.6347	5.9091	5.9197	5.8453	0.1405	0.0240
15%	7.7476	7.1488	7.5049	7.5913	7.4981	0.2536	0.0338
20%	9.2923	8.6958	8.9662	9.1658	9.0300	0.2601	0.0288
25%	10.5157	10.1006	10.3434	10.3979	10.3394	0.1747	0.0169
30%	12.1064	11.5121	11.8329	12.1861	11.9094	0.3050	0.0256
35%	13.9448	13.0359	13.4109	13.8976	13.5723	0.4314	0.0318
40%	16.2682	15.2335	15.2456	16.0398	15.6968	0.5362	0.0342
45%	20.5374	18.5764	18.9045	19.9723	19.4976	0.9141	0.0469
50%	27.5427	26.3680	26.0948	27.2927	26.8246	0.7014	0.0261
55%	30.1433	29.7910	29.5347	30.0781	29.8867	0.2802	0.0094
60%	32.1453	31.8670	31.2354	32.0274	31.8188	0.4053	0.0127
65%	34.2091	33.7497	33.5051	33.7915	33.8139	0.2922	0.0086
70%	35.8457	35.3574	35.0932	35.6098	35.4765	0.3241	0.0091
75%	38.4771	37.5970	37.3072	38.3375	37.9297	0.5669	0.0149
80%	41.3740	41.0680	40.3317	41.7308	41.1261	0.5949	0.0145
85%	52.4410	52.4865	51.0347	51.8886	51.9627	0.6758	0.0130
90%	58.1659	57.8146	56.9298	57.9445	57.7137	0.5424	0.0094
95%	65.4852	65.2822	63.8058	65.8145	65.0969	0.8883	0.0136
97%	79.2127	78.6718	76.1889	78.2728	78.0866	1.3225	0.0169
99%	86.9120	86.9785	85.9239	89.6173	87.3579	1.5816	0.0181
Kurtosis	1.09	1.02	0.82	1.14	1.02	0.14	
Skewness	1.02	1.03	0.99	1.05	1.02	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Boiler Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
GA-Soil-001	13479.516827	0.00046625	0.062	0.000029
PA	16763.000057	0.009941079	0.077	0.000762
SL	2136.568088	0.000510991	0.010	0.000005
SS035	16996.332798	4.31979E-05	0.078	0.000003
SS037	191.375705	0.00075937	0.001	0.000001
SS057	31916.102746	2.72786E-05	0.146	0.000004
SS058	17073.877179	0.05438542	0.078	0.004246
SS071	15258.224184	3.38896E-05	0.070	0.000002
SS080	11679.295917	4.44272E-05	0.053	0.000002
SS081	17233.390334	0.002814842	0.079	0.000222
SS082	14322.878872	0.003638946	0.065	0.000238
SS098	23596.672441	0.000188545	0.108	0.000020
SS099	14999.323006	0.003766902	0.069	0.000258
TC	23063.813999	0.012930695	0.105	0.001364
	218,710.37	0.09	1.00	0.01

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0004	0.0001	0.0003	0.0001	0.0002	0.0001	0.5930
Max	0.0258	0.0267	0.0260	0.0238	0.0256	0.0012	0.0483
Average	0.0070	0.0072	0.0070	0.0071	0.0071	0.0001	0.0149
Std Dev	0.0038	0.0039	0.0038	0.0039	0.0038	0.0000	0.0109
1%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0261
5%	0.0019	0.0020	0.0019	0.0019	0.0019	0.0000	0.0161
10%	0.0025	0.0026	0.0025	0.0024	0.0025	0.0001	0.0222
15%	0.0029	0.0030	0.0029	0.0029	0.0029	0.0001	0.0224
20%	0.0034	0.0036	0.0034	0.0034	0.0034	0.0001	0.0281
25%	0.0040	0.0042	0.0039	0.0040	0.0040	0.0001	0.0370
30%	0.0046	0.0050	0.0046	0.0047	0.0047	0.0002	0.0327
35%	0.0053	0.0056	0.0053	0.0053	0.0054	0.0001	0.0243
40%	0.0058	0.0061	0.0058	0.0059	0.0059	0.0001	0.0202
45%	0.0062	0.0064	0.0062	0.0063	0.0063	0.0001	0.0169
50%	0.0066	0.0068	0.0066	0.0066	0.0066	0.0001	0.0168
55%	0.0069	0.0072	0.0070	0.0070	0.0070	0.0001	0.0158
60%	0.0074	0.0077	0.0074	0.0075	0.0075	0.0001	0.0168
65%	0.0079	0.0082	0.0080	0.0081	0.0080	0.0001	0.0165
70%	0.0087	0.0090	0.0087	0.0088	0.0088	0.0001	0.0160
75%	0.0095	0.0097	0.0095	0.0096	0.0096	0.0001	0.0098
80%	0.0102	0.0104	0.0102	0.0103	0.0103	0.0001	0.0102
85%	0.0109	0.0110	0.0109	0.0111	0.0110	0.0001	0.0080
90%	0.0120	0.0122	0.0121	0.0123	0.0122	0.0001	0.0122
95%	0.0140	0.0143	0.0141	0.0142	0.0142	0.0001	0.0101
97%	0.0148	0.0155	0.0151	0.0154	0.0152	0.0003	0.0207
99%	0.0179	0.0182	0.0179	0.0179	0.0180	0.0002	0.0089
Kurtosis	0.59	0.71	0.45	0.34	0.52	0.17	
Skewness	0.74	0.76	0.74	0.72	0.74	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	5.9	0.007	0.042088
SS041	12138.908578	0.7	0.013	0.009256
SS049	27257.260014	0.72	0.030	0.021377
SS050	18423.776774	1.83	0.020	0.036725
SS051	22567.031543	0.595	0.025	0.014626
SS052	22572.957443	0.385	0.025	0.009466
SS059	7542.361168	3.05	0.008	0.025057
SS060	22045.249270	1.8	0.024	0.043223
SS062	47435.372730	0.7975	0.052	0.041206
SS064	45745.513257	0.69	0.050	0.034382
SS066	35406.196522	0.6375	0.039	0.024586
SS067	60631.653686	2.775	0.066	0.183270
SS068	48714.447449	1.65	0.053	0.087553
SS069	32816.864108	0.605	0.036	0.021626
SS070	2283.692853	0.4225	0.002	0.001051
SS072	11909.497101	0.665	0.013	0.008627
SS073	36277.798801	4.5	0.040	0.177821
SS074	32138.574222	0.805	0.035	0.028181
SS075	18648.495226	3.35	0.020	0.068048
SS076	26621.332226	1	0.029	0.028997
SS077	19534.313390	0.175	0.021	0.003724
SS078	20418.577935	0.175	0.022	0.003892
SS079	39554.346585	1.15	0.043	0.049547
SS083	8106.511786	1.1	0.009	0.009713
SS084	23869.869342	0.1775	0.026	0.004615
SS085	40357.707315	1.28	0.044	0.056269
SS086	23258.047475	0.53	0.025	0.013427
SS087	22447.914930	0.17	0.024	0.004157
SS088	35448.708946	0.845	0.039	0.032628
SS089	25110.636808	1.7	0.027	0.046498
SS090	44026.612330	1.2	0.048	0.057547
SS091	9825.866696	2.62	0.011	0.028042
SS093	50604.523169	0.575	0.055	0.031695
SS100	17769.140049	1.5	0.019	0.029033
	918058.84	46.08	1.00	1.28

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.7253	0.7764	0.7574	0.6911	0.7375	0.0375	0.0508
Max	1.9946	2.0309	2.1791	2.2440	2.1121	0.1187	0.0562
Average	1.2767	1.2737	1.2803	1.2812	1.2780	0.0035	0.0027
Std Dev	0.1857	0.1808	0.1835	0.1857	0.1839	0.0023	0.0125
1%	0.8887	0.8993	0.9071	0.8896	0.8962	0.0087	0.0098
5%	0.9923	0.9965	0.9911	0.9970	0.9942	0.0029	0.0030
10%	1.0465	1.0498	1.0517	1.0514	1.0498	0.0024	0.0023
15%	1.0869	1.0873	1.0902	1.0882	1.0882	0.0015	0.0014
20%	1.1185	1.1174	1.1215	1.1204	1.1194	0.0018	0.0016
25%	1.1483	1.1446	1.1479	1.1512	1.1480	0.0027	0.0024
30%	1.1715	1.1680	1.1764	1.1768	1.1732	0.0042	0.0036
35%	1.1970	1.1918	1.2009	1.2025	1.1980	0.0048	0.0040
40%	1.2197	1.2152	1.2246	1.2253	1.2212	0.0047	0.0039
45%	1.2435	1.2399	1.2483	1.2484	1.2450	0.0041	0.0033
50%	1.2664	1.2613	1.2704	1.2718	1.2675	0.0047	0.0037
55%	1.2906	1.2884	1.2947	1.2952	1.2922	0.0033	0.0025
60%	1.3131	1.3123	1.3192	1.3199	1.3161	0.0040	0.0030
65%	1.3355	1.3349	1.3434	1.3451	1.3397	0.0053	0.0039
70%	1.3629	1.3611	1.3735	1.3697	1.3668	0.0058	0.0042
75%	1.3938	1.3906	1.4028	1.4024	1.3974	0.0062	0.0044
80%	1.4287	1.4245	1.4360	1.4337	1.4307	0.0052	0.0036
85%	1.4672	1.4651	1.4721	1.4743	1.4697	0.0042	0.0029
90%	1.5212	1.5121	1.5214	1.5223	1.5193	0.0048	0.0031
95%	1.6033	1.5915	1.5974	1.6096	1.6005	0.0078	0.0049
97%	1.6514	1.6375	1.6493	1.6577	1.6490	0.0085	0.0051
99%	1.7524	1.7333	1.7402	1.7499	1.7440	0.0088	0.0051
Kurtosis	0.14	0.01	-0.03	0.10	0.05	0.08	
Skewness	0.35	0.33	0.28	0.30	0.31	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	275	0.007	1.961746
SS041	12138.908578	31.5	0.013	0.416504
SS049	27257.260014	44.5	0.030	1.321210
SS050	18423.776774	145	0.020	2.909887
SS051	22567.031543	60	0.025	1.474875
SS052	22572.957443	61	0.025	1.499850
SS059	7542.361168	200	0.008	1.643111
SS060	22045.249270	180	0.024	4.322321
SS062	47435.372730	47	0.052	2.428453
SS064	45745.513257	90	0.050	4.484567
SS066	35406.196522	71	0.039	2.738212
SS067	60631.653686	200	0.066	13.208664
SS068	48714.447449	175	0.053	9.285928
SS069	32816.864108	20	0.036	0.714919
SS070	2283.692853	55.75	0.002	0.138679
SS072	11909.497101	61	0.013	0.791321
SS073	36277.798801	165	0.040	6.520101
SS074	32138.574222	82.5	0.035	2.888085
SS075	18648.495226	190	0.020	3.859463
SS076	26621.332226	125	0.029	3.624677
SS077	19534.313390	3.85	0.021	0.081920
SS078	20418.577935	3.88	0.022	0.086295
SS079	39554.346585	113	0.043	4.868578
SS083	8106.511786	45.5	0.009	0.401768
SS084	23869.869342	8.7	0.026	0.226203
SS085	40357.707315	94.5	0.044	4.154204
SS086	23258.047475	45.25	0.025	1.146361
SS087	22447.914930	17.5	0.024	0.427901
SS088	35448.708946	85	0.039	3.282077
SS089	25110.636808	128	0.027	3.501041
SS090	44026.612330	79	0.048	3.788540
SS091	9825.866696	355	0.011	3.799520
SS093	50604.523169	36.5	0.055	2.011925
SS100	17769.140049	205	0.019	3.967800
	918,058.84	3,499.93	1.00	97.98

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	59.8065	51.6509	58.7003	56.5612	56.6797	3.6131	0.0637
Max	136.6324	147.2500	139.5965	143.2912	141.6925	4.5985	0.0325
Average	98.0151	98.0329	97.9590	97.9700	97.9942	0.0354	0.0004
Std Dev	11.3861	11.4231	11.4652	11.6591	11.4833	0.1215	0.0106
1%	73.6129	72.4655	72.4424	72.9500	72.8677	0.5491	0.0075
5%	79.7396	79.7880	79.3966	79.1354	79.5149	0.3072	0.0039
10%	83.5787	83.6440	83.2686	83.0129	83.3761	0.2923	0.0035
15%	85.9998	86.1839	86.1374	85.7043	86.0063	0.2160	0.0025
20%	88.2426	88.2748	88.2574	87.9592	88.1835	0.1501	0.0017
25%	90.0544	90.0432	90.1440	89.9862	90.0570	0.0652	0.0007
30%	91.6981	91.8007	91.7815	91.6701	91.7376	0.0633	0.0007
35%	93.1265	93.3811	93.4134	93.2660	93.2967	0.1299	0.0014
40%	94.7071	94.9300	94.8924	94.8839	94.8533	0.0995	0.0010
45%	96.2030	96.3486	96.3968	96.2516	96.3000	0.0885	0.0009
50%	97.6465	97.8732	97.6529	97.6903	97.7157	0.1068	0.0011
55%	99.1858	99.4397	99.1686	99.1255	99.2299	0.1422	0.0014
60%	100.7936	100.9298	100.5662	100.6659	100.7389	0.1577	0.0016
65%	102.3579	102.4796	101.9171	102.2364	102.2478	0.2418	0.0024
70%	104.0030	104.0731	103.5667	103.7675	103.8526	0.2311	0.0022
75%	105.6835	105.6765	105.3463	105.5318	105.5595	0.1584	0.0015
80%	107.6578	107.5092	107.3808	107.6876	107.5589	0.1421	0.0013
85%	109.9871	109.8884	109.7218	110.1716	109.9422	0.1881	0.0017
90%	112.9623	112.7750	113.0072	113.0319	112.9441	0.1164	0.0010
95%	117.6133	117.0410	117.6753	117.5089	117.4596	0.2874	0.0024
97%	120.4254	119.8517	120.5413	120.4876	120.3265	0.3201	0.0027
99%	125.1281	124.8285	125.9232	126.2215	125.5253	0.6548	0.0052
Kurtosis	-0.19	0.05	-0.01	0.04	-0.03	0.11	
Skewness	0.13	0.08	0.14	0.17	0.13	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	455	0.007	3.245798
SS041	12138.908578	48.5	0.013	0.641285
SS049	27257.260014	77.5	0.030	2.300983
SS050	18423.776774	220	0.020	4.415001
SS051	22567.031543	78.5	0.025	1.929628
SS052	22572.957443	115	0.025	2.827586
SS059	7542.361168	230	0.008	1.889577
SS060	22045.249270	215	0.024	5.162772
SS062	47435.372730	155	0.052	8.008727
SS064	45745.513257	180	0.050	8.969134
SS066	35406.196522	46.75	0.039	1.802978
SS067	60631.653686	327.5	0.066	21.629187
SS068	48714.447449	250	0.053	13.265611
SS069	32816.864108	8.7	0.036	0.310990
SS070	2283.692853	40	0.002	0.099501
SS072	11909.497101	70.5	0.013	0.914560
SS073	36277.798801	185	0.040	7.310417
SS074	32138.574222	105	0.035	3.675745
SS075	18648.495226	295	0.020	5.992324
SS076	26621.332226	230	0.029	6.669405
SS077	19534.313390	9.45	0.021	0.201076
SS078	20418.577935	13.6	0.022	0.302478
SS079	39554.346585	180	0.043	7.755257
SS083	8106.511786	59.5	0.009	0.525388
SS084	23869.869342	15	0.026	0.390006
SS085	40357.707315	123	0.044	5.407059
SS086	23258.047475	77.5	0.025	1.963380
SS087	22447.914930	33	0.024	0.806899
SS088	35448.708946	117.5	0.039	4.536989
SS089	25110.636808	185	0.027	5.060098
SS090	44026.612330	110.25	0.048	5.287171
SS091	9825.866696	490	0.011	5.244407
SS093	50604.523169	50.5	0.055	2.783622
SS100	17769.140049	300	0.019	5.806536
	918058.84	5097.25	1.00	147.13

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	83.2441	91.7529	90.9985	79.0073	86.2507	6.1731	0.0716
Max	207.0353	212.6824	217.8956	213.2441	212.7143	4.4489	0.0209
Average	146.8204	147.0659	146.6440	146.9553	146.8714	0.1819	0.0012
Std Dev	17.2397	17.5753	17.3821	17.8562	17.5133	0.2668	0.0152
1%	107.1545	107.9854	108.8137	107.4731	107.8567	0.7240	0.0067
5%	118.8460	118.8370	118.7583	118.3523	118.6984	0.2341	0.0020
10%	125.1850	124.6260	124.9357	124.0754	124.7055	0.4783	0.0038
15%	129.1592	128.7015	129.0852	128.7884	128.9336	0.2228	0.0017
20%	132.3930	131.9750	132.1965	132.0174	132.1454	0.1909	0.0014
25%	135.2548	134.8136	134.7713	134.8801	134.9300	0.2211	0.0016
30%	137.8479	137.4068	136.8172	137.4185	137.3726	0.4234	0.0031
35%	139.9245	139.7165	139.1843	139.7078	139.6333	0.3156	0.0023
40%	142.0297	142.1691	141.5456	141.6747	141.8548	0.2929	0.0021
45%	144.3258	144.4596	143.6856	144.0962	144.1418	0.3392	0.0024
50%	146.2493	146.8265	146.1265	146.5059	146.4270	0.3097	0.0021
55%	148.4307	149.1616	148.3526	148.8713	148.7041	0.3810	0.0026
60%	150.7082	151.4126	150.4838	151.1821	150.9467	0.4257	0.0028
65%	153.0996	153.7060	152.9926	153.6094	153.3519	0.3580	0.0023
70%	155.5623	156.2882	155.2544	155.8396	155.7361	0.4389	0.0028
75%	158.5173	159.0243	158.0448	158.7533	158.5849	0.4154	0.0026
80%	161.4262	161.9147	161.0397	161.9506	161.5828	0.4339	0.0027
85%	164.9165	165.5572	164.5360	165.5857	165.1488	0.5123	0.0031
90%	169.5913	170.1654	169.1641	170.1894	169.7776	0.4936	0.0029
95%	176.0796	176.1496	175.9878	176.8004	176.2543	0.3700	0.0021
97%	179.7956	180.5900	180.7943	182.1327	180.8281	0.9705	0.0054
99%	186.9872	188.3996	190.3692	189.8541	188.9025	1.5251	0.0081
Kurtosis	-0.01	-0.13	0.12	0.02	0.00	0.10	
Skewness	0.06	0.09	0.22	0.12	0.12	0.07	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	250	0.007	1.783405
SS041	12138.908578	29	0.013	0.383449
SS049	27257.260014	8.85	0.030	0.262757
SS050	18423.776774	21	0.020	0.421432
SS051	22567.031543	22.5	0.025	0.553078
SS052	22572.957443	15.5	0.025	0.381109
SS059	7542.361168	27	0.008	0.221820
SS060	22045.249270	10.6	0.024	0.254537
SS062	47435.372730	11.7	0.052	0.604530
SS064	45745.513257	8.05	0.050	0.401120
SS066	35406.196522	12.35	0.039	0.476295
SS067	60631.653686	22.75	0.066	1.502486
SS068	48714.447449	26.5	0.053	1.406155
SS069	32816.864108	24	0.036	0.857902
SS070	2283.692853	24.25	0.002	0.060322
SS072	11909.497101	35	0.013	0.454037
SS073	36277.798801	205	0.040	8.100732
SS074	32138.574222	44.5	0.035	1.557816
SS075	18648.495226	83	0.020	1.685976
SS076	26621.332226	24.5	0.029	0.710437
SS077	19534.313390	5.95	0.021	0.126603
SS078	20418.577935	3.65	0.022	0.081180
SS079	39554.346585	10.5	0.043	0.452390
SS083	8106.511786	15	0.009	0.132451
SS084	23869.869342	6.05	0.026	0.157302
SS085	40357.707315	42	0.044	1.846313
SS086	23258.047475	14.75	0.025	0.373676
SS087	22447.914930	4.65	0.024	0.113699
SS088	35448.708946	28.5	0.039	1.100461
SS089	25110.636808	34	0.027	0.929964
SS090	44026.612330	21	0.048	1.007080
SS091	9825.866696	54.5	0.011	0.583307
SS093	50604.523169	11	0.055	0.606333
SS100	17769.140049	11	0.019	0.212906
	918058.84	1168.60	1.00	29.80

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	13.9691	14.3824	14.7015	14.4765	14.3824	0.3063	0.0213
Max	65.5279	66.4559	80.3412	65.8471	69.5430	7.2091	0.1037
Average	29.8641	30.0889	29.9504	29.8743	29.9444	0.1037	0.0035
Std Dev	7.3585	7.5646	7.5666	7.3709	7.4652	0.1161	0.0156
1%	17.0292	17.1851	17.0367	17.1511	17.1005	0.0793	0.0046
5%	19.1955	19.2278	19.1332	19.1322	19.1722	0.0475	0.0025
10%	20.8072	20.6703	20.6310	20.6557	20.6911	0.0791	0.0038
15%	22.2302	22.1468	22.1305	22.2890	22.1991	0.0741	0.0033
20%	23.5903	23.5924	23.4541	23.5109	23.5369	0.0670	0.0028
25%	24.5849	24.5956	24.4305	24.4967	24.5269	0.0781	0.0032
30%	25.4184	25.4403	25.3962	25.3735	25.4071	0.0287	0.0011
35%	26.2534	26.3669	26.1971	26.2921	26.2774	0.0713	0.0027
40%	27.2347	27.3118	27.0679	27.2053	27.2049	0.1018	0.0037
45%	28.2299	28.1761	28.0279	28.1132	28.1368	0.0868	0.0031
50%	29.1676	29.3221	29.1176	29.0882	29.1739	0.1041	0.0036
55%	30.0926	30.3191	30.1322	30.0713	30.1538	0.1131	0.0037
60%	30.9471	31.3556	31.1344	31.0912	31.1321	0.1692	0.0054
65%	32.0525	32.3294	32.1938	32.0735	32.1623	0.1276	0.0040
70%	33.1391	33.4337	33.2660	33.1803	33.2548	0.1305	0.0039
75%	34.4191	34.7478	34.6110	34.4621	34.5600	0.1498	0.0043
80%	35.7318	36.3409	36.2315	36.0865	36.0976	0.2652	0.0073
85%	37.5240	37.9056	37.7912	37.6759	37.7242	0.1631	0.0043
90%	39.5934	40.4296	40.1699	39.8900	40.0207	0.3601	0.0090
95%	43.1348	43.4695	43.7789	42.8357	43.3047	0.4086	0.0094
97%	45.4691	46.0319	46.2294	45.2819	45.7531	0.4499	0.0098
99%	50.2150	50.7074	50.0211	49.8203	50.1909	0.3801	0.0076
Kurtosis	0.46	0.44	0.55	0.30	0.44	0.10	
Skewness	0.64	0.65	0.66	0.60	0.64	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	1.035	0.007	0.007383
SS041	12138.908578	0.24	0.013	0.003173
SS049	27257.260014	0.0745	0.030	0.002212
SS050	18423.776774	0.37	0.020	0.007425
SS051	22567.031543	0.225	0.025	0.005531
SS052	22572.957443	0.195	0.025	0.004795
SS059	7542.361168	1.72	0.008	0.014131
SS060	22045.249270	0.21	0.024	0.005043
SS062	47435.372730	0.1535	0.052	0.007931
SS064	45745.513257	0.17	0.050	0.008471
SS066	35406.196522	0.0855	0.039	0.003297
SS067	60631.653686	0.41	0.066	0.027078
SS068	48714.447449	0.155	0.053	0.008225
SS069	32816.864108	0.065	0.036	0.002323
SS070	2283.692853	1.895	0.002	0.004714
SS072	11909.497101	1.315	0.013	0.017059
SS073	36277.798801	1.85	0.040	0.073104
SS074	32138.574222	1.045	0.035	0.036582
SS075	18648.495226	0.33	0.020	0.006703
SS076	26621.332226	0.13	0.029	0.003770
SS077	19534.313390	0.0325	0.021	0.000692
SS078	20418.577935	0.027	0.022	0.000601
SS079	39554.346585	0.088	0.043	0.003791
SS083	8106.511786	0.21	0.009	0.001854
SS084	23869.869342	0.074	0.026	0.001924
SS085	40357.707315	0.275	0.044	0.012089
SS086	23258.047475	0.585	0.025	0.014820
SS087	22447.914930	0.155	0.024	0.003790
SS088	35448.708946	0.51	0.039	0.019692
SS089	25110.636808	0.61	0.027	0.016685
SS090	44026.612330	0.3825	0.048	0.018343
SS091	9825.866696	0.78	0.011	0.008348
SS093	50604.523169	0.0595	0.055	0.003280
SS100	17769.140049	0.335	0.019	0.006484
	918058.84	15.80	1.00	0.36

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1572	0.1532	0.1606	0.1681	0.1598	0.0063	0.0394
Max	0.6606	0.7483	0.7142	0.6985	0.7054	0.0364	0.0516
Average	0.3581	0.3609	0.3574	0.3598	0.3591	0.0016	0.0044
Std Dev	0.0717	0.0722	0.0723	0.0718	0.0720	0.0003	0.0040
1%	0.2144	0.2170	0.2142	0.2186	0.2161	0.0021	0.0099
5%	0.2482	0.2506	0.2483	0.2503	0.2494	0.0013	0.0052
10%	0.2691	0.2706	0.2678	0.2733	0.2702	0.0023	0.0087
15%	0.2837	0.2846	0.2824	0.2872	0.2845	0.0020	0.0070
20%	0.2955	0.2977	0.2946	0.2984	0.2965	0.0018	0.0060
25%	0.3078	0.3088	0.3055	0.3077	0.3074	0.0014	0.0044
30%	0.3179	0.3183	0.3151	0.3171	0.3171	0.0014	0.0045
35%	0.3270	0.3290	0.3243	0.3272	0.3269	0.0019	0.0059
40%	0.3363	0.3385	0.3340	0.3363	0.3363	0.0018	0.0054
45%	0.3456	0.3478	0.3436	0.3457	0.3457	0.0017	0.0050
50%	0.3540	0.3580	0.3522	0.3548	0.3548	0.0024	0.0068
55%	0.3625	0.3677	0.3619	0.3642	0.3641	0.0026	0.0071
60%	0.3716	0.3767	0.3709	0.3732	0.3731	0.0026	0.0070
65%	0.3808	0.3855	0.3814	0.3823	0.3825	0.0021	0.0055
70%	0.3926	0.3968	0.3932	0.3919	0.3936	0.0022	0.0055
75%	0.4031	0.4075	0.4050	0.4044	0.4050	0.0019	0.0046
80%	0.4163	0.4197	0.4174	0.4182	0.4179	0.0014	0.0033
85%	0.4317	0.4364	0.4323	0.4346	0.4338	0.0022	0.0050
90%	0.4515	0.4565	0.4529	0.4551	0.4540	0.0022	0.0049
95%	0.4838	0.4857	0.4864	0.4882	0.4860	0.0018	0.0038
97%	0.5041	0.5068	0.5085	0.5073	0.5067	0.0019	0.0037
99%	0.5444	0.5460	0.5424	0.5476	0.5451	0.0022	0.0041
Kurtosis	0.15	0.12	0.04	0.28	0.15	0.10	
Skewness	0.39	0.36	0.38	0.47	0.40	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
DT	11974.012687	133.94	0.013	1.746946
SS040	6549.084354	3.15885	0.007	0.022534
SS041	12138.908578	1.691095	0.013	0.022360
SS049	27257.260014	1.16392	0.030	0.034557
SS050	18423.776774	1.58355	0.020	0.031779
SS051	22567.031543	5.17785	0.025	0.127278
SS052	22572.957443	3.80755	0.025	0.093619
SS059	7542.361137	7.25605	0.008	0.059612
SS060	22045.249270	2.8515	0.024	0.068473
SS062	47435.372730	2.4064	0.052	0.124337
SS064	44555.378271	1.92005	0.049	0.093184
SS066	35406.196522	0.825511	0.039	0.031837
SS067	60631.653686	10.963525	0.066	0.724068
SS068	48714.447449	3.38205	0.053	0.179460
SS069	32816.864108	2.09655	0.036	0.074943
SS070	2283.692853	16.319775	0.002	0.040596
SS072	11909.497125	4.1758	0.013	0.054170
SS073	36277.798801	15.9812	0.040	0.631509
SS074	32138.574222	17.1507	0.035	0.600396
SS075	18014.766940	18.09275	0.020	0.355028
SS076	18712.074358	9.34505	0.020	0.190473
SS077	17293.421843	13.666675	0.019	0.257438
SS078	20418.577935	0.112809	0.022	0.002509
SS079	39554.346585	4.28665	0.043	0.184689
SS083	8106.511786	2.04075	0.009	0.018020
SS084	23869.869342	0.9578835	0.026	0.024905
SS085	40357.707315	12.2077	0.044	0.536648
SS086	23258.047475	2.95855	0.025	0.074952
SS087	22447.914930	1.78725	0.024	0.043701
SS088	35448.708946	4.85993	0.039	0.187655
SS089	25110.636808	15.694	0.027	0.429260
SS090	44026.612330	6.3338	0.048	0.303745
SS091	9825.866696	7.60555	0.011	0.081401
SS093	50604.523169	2.62055	0.055	0.144448
SS100	17769.140049	11.6393	0.019	0.225280
	918058.84	350.06	1.00	7.82

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	3.2661	3.4197	3.5333	3.2042	3.3558	0.1490	0.0444
Max	20.9717	21.6729	24.2225	21.6682	22.1338	1.4309	0.0646
Average	7.7749	7.8087	7.7383	7.7708	7.7732	0.0288	0.0037
Std Dev	2.5839	2.6042	2.5485	2.5470	2.5709	0.0280	0.0109
1%	4.3677	4.4266	4.3196	4.3553	4.3673	0.0445	0.0102
5%	4.9301	4.9019	4.9263	4.9135	4.9180	0.0129	0.0026
10%	5.2768	5.2752	5.2779	5.2781	5.2770	0.0013	0.0002
15%	5.4995	5.5084	5.5224	5.5249	5.5138	0.0120	0.0022
20%	5.6931	5.7217	5.7066	5.7183	5.7099	0.0130	0.0023
25%	5.8943	5.9241	5.8789	5.9095	5.9017	0.0195	0.0033
30%	6.0673	6.0941	6.0477	6.0937	6.0757	0.0225	0.0037
35%	6.2320	6.2547	6.2129	6.2613	6.2402	0.0221	0.0035
40%	6.4199	6.4118	6.4043	6.4360	6.4180	0.0136	0.0021
45%	6.6076	6.6068	6.5912	6.6263	6.6080	0.0144	0.0022
50%	6.8013	6.8314	6.8123	6.8362	6.8203	0.0164	0.0024
55%	7.0884	7.1380	7.1074	7.1270	7.1152	0.0219	0.0031
60%	7.5228	7.5431	7.4968	7.5237	7.5216	0.0190	0.0025
65%	8.3618	8.4379	8.2454	8.3281	8.3433	0.0798	0.0096
70%	9.0579	9.0974	9.0004	9.0407	9.0491	0.0402	0.0044
75%	9.5205	9.5830	9.4763	9.5114	9.5228	0.0444	0.0047
80%	9.8773	9.9825	9.8582	9.8934	9.9028	0.0550	0.0056
85%	10.3129	10.4289	10.2722	10.3158	10.3324	0.0673	0.0065
90%	10.9759	11.0696	10.8793	10.9244	10.9623	0.0817	0.0075
95%	13.2375	13.1860	13.1123	13.0956	13.1578	0.0661	0.0050
97%	13.9072	13.8647	13.8437	13.7949	13.8526	0.0467	0.0034
99%	16.3053	16.1700	15.6710	15.2536	15.8500	0.4822	0.0304
Kurtosis	1.42	1.58	1.76	1.50	1.56	0.15	
Skewness	1.22	1.23	1.25	1.21	1.23	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS040	6549.084354	0.385	0.007	0.002746
SS041	12138.908578	0.195	0.013	0.002578
SS049	27257.260014	0.101	0.030	0.002999
SS050	18423.776774	0.175	0.020	0.003512
SS051	22567.031543	0.3	0.025	0.007374
SS052	22572.957443	0.75	0.025	0.018441
SS059	7542.361168	0.515	0.008	0.004231
SS060	22045.249270	0.109	0.024	0.002617
SS062	47435.372730	0.1975	0.052	0.010205
SS064	45745.513257	0.146	0.050	0.007275
SS066	35406.196522	0.10175	0.039	0.003924
SS067	60631.653686	0.7175	0.066	0.047386
SS068	48714.447449	0.45	0.053	0.023878
SS069	32816.864108	0.1385	0.036	0.004951
SS070	2283.692853	1.55	0.002	0.003856
SS072	11909.497101	0.435	0.013	0.005643
SS073	36277.798801	1.225	0.040	0.048407
SS074	32138.574222	1.075	0.035	0.037633
SS075	18648.495226	1.175	0.020	0.023868
SS076	26621.332226	0.47	0.029	0.013629
SS077	19534.313390	0.681	0.021	0.014490
SS078	20418.577935	0.0085	0.022	0.000189
SS079	39554.346585	0.315	0.043	0.013572
SS083	8106.511786	0.125	0.009	0.001104
SS084	23869.869342	0.037	0.026	0.000962
SS085	40357.707315	0.855	0.044	0.037586
SS086	23258.047475	0.29	0.025	0.007347
SS087	22447.914930	0.0915	0.024	0.002237
SS088	35448.708946	0.465	0.039	0.017955
SS089	25110.636808	0.965	0.027	0.026395
SS090	44026.612330	0.5275	0.048	0.025297
SS091	9825.866696	1.23	0.011	0.013165
SS093	50604.523169	0.215	0.055	0.011851
SS100	17769.140049	0.595	0.019	0.011516
	918058.84	16.61	1.00	0.46

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2478	0.2426	0.2660	0.2692	0.2564	0.0132	0.0513
Max	0.6665	0.7028	0.6683	0.6789	0.6791	0.0167	0.0246
Average	0.4597	0.4561	0.4592	0.4593	0.4586	0.0017	0.0037
Std Dev	0.0608	0.0603	0.0595	0.0601	0.0602	0.0006	0.0093
1%	0.3233	0.3195	0.3249	0.3284	0.3240	0.0037	0.0114
5%	0.3603	0.3578	0.3634	0.3628	0.3611	0.0026	0.0071
10%	0.3817	0.3793	0.3837	0.3841	0.3822	0.0022	0.0057
15%	0.3965	0.3938	0.3986	0.3966	0.3964	0.0020	0.0049
20%	0.4088	0.4048	0.4089	0.4084	0.4077	0.0020	0.0049
25%	0.4179	0.4142	0.4184	0.4171	0.4169	0.0019	0.0046
30%	0.4276	0.4228	0.4265	0.4248	0.4254	0.0021	0.0049
35%	0.4356	0.4320	0.4347	0.4333	0.4339	0.0016	0.0036
40%	0.4440	0.4394	0.4431	0.4413	0.4419	0.0021	0.0047
45%	0.4513	0.4476	0.4504	0.4493	0.4497	0.0016	0.0035
50%	0.4580	0.4552	0.4577	0.4568	0.4569	0.0013	0.0028
55%	0.4660	0.4625	0.4649	0.4660	0.4648	0.0017	0.0036
60%	0.4734	0.4708	0.4726	0.4737	0.4726	0.0013	0.0027
65%	0.4822	0.4784	0.4807	0.4827	0.4810	0.0019	0.0041
70%	0.4908	0.4873	0.4893	0.4912	0.4897	0.0017	0.0036
75%	0.4996	0.4969	0.4990	0.5010	0.4991	0.0017	0.0034
80%	0.5101	0.5073	0.5095	0.5112	0.5095	0.0016	0.0032
85%	0.5226	0.5189	0.5218	0.5221	0.5214	0.0016	0.0032
90%	0.5388	0.5342	0.5366	0.5376	0.5368	0.0019	0.0036
95%	0.5637	0.5573	0.5576	0.5609	0.5599	0.0030	0.0054
97%	0.5790	0.5719	0.5756	0.5743	0.5752	0.0030	0.0052
99%	0.6049	0.6025	0.6039	0.6017	0.6033	0.0015	0.0024
Kurtosis	-0.04	-0.04	-0.03	-0.16	-0.07	0.06	
Skewness	0.10	0.12	0.14	0.12	0.12	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
DT	11974.012687	62	0.013	0.808651
SS040	6549.084354	0.465	0.007	0.003317
SS041	12138.908578	0.16	0.013	0.002116
SS049	27257.260014	0.049	0.030	0.001455
SS050	18423.776774	0.0385	0.020	0.000773
SS051	22567.031543	0.0565	0.025	0.001389
SS052	22572.957443	0.056	0.025	0.001377
SS059	7542.361137	0.64	0.008	0.005258
SS060	22045.249270	0.215	0.024	0.005163
SS062	47435.372730	0.002925	0.052	0.000151
SS064	44555.378271	0.047875	0.049	0.002323
SS066	35406.196522	0.0645	0.039	0.002488
SS067	60631.653686	0.3375	0.066	0.022290
SS068	48714.447449	0.079	0.053	0.004192
SS069	32816.864108	0.0495	0.036	0.001769
SS070	2283.692853	0.2925	0.002	0.000728
SS072	11909.497125	0.028	0.013	0.000363
SS073	36277.798801	0.785	0.040	0.031020
SS074	32138.574222	0.815	0.035	0.028531
SS075	18014.766940	0.84	0.020	0.016483
SS076	18712.074358	0.325	0.020	0.006624
SS077	17293.421843	0.26	0.019	0.004898
SS078	20418.577935	0.0002675	0.022	0.000006
SS079	39554.346585	0.12	0.043	0.005170
SS083	8106.511786	0.325	0.009	0.002870
SS084	23869.869342	0.1355	0.026	0.003523
SS085	40357.707315	0.31	0.044	0.013628
SS086	23258.047475	0.1065	0.025	0.002698
SS087	22447.914930	0.068	0.024	0.001663
SS088	35448.708946	0.1805	0.039	0.006970
SS089	25110.636808	0.405	0.027	0.011078
SS090	44026.612330	0.285	0.048	0.013668
SS091	9825.866696	0.335	0.011	0.003585
SS093	50604.523169	0.0615	0.055	0.003390
SS100	17769.140049	0.35	0.019	0.006774
	918,058.84	70.29	1.00	1.03

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0999	0.0996	0.1181	0.1114	0.1073	0.0091	0.0846
Max	7.3312	7.2955	7.3453	7.2911	7.3158	0.0266	0.0036
Average	0.9969	0.9769	1.0037	0.9765	0.9885	0.0139	0.0141
Std Dev	1.1473	1.1287	1.1562	1.1305	1.1407	0.0133	0.0117
1%	0.1434	0.1403	0.1421	0.1439	0.1424	0.0016	0.0114
5%	0.1689	0.1668	0.1687	0.1677	0.1680	0.0010	0.0058
10%	0.1828	0.1816	0.1838	0.1818	0.1825	0.0010	0.0055
15%	0.1932	0.1925	0.1922	0.1915	0.1923	0.0007	0.0037
20%	0.2012	0.2002	0.2001	0.1997	0.2003	0.0006	0.0030
25%	0.2089	0.2084	0.2077	0.2074	0.2081	0.0007	0.0032
30%	0.2162	0.2161	0.2150	0.2153	0.2156	0.0006	0.0028
35%	0.2245	0.2234	0.2230	0.2227	0.2234	0.0008	0.0035
40%	0.2325	0.2314	0.2306	0.2307	0.2313	0.0009	0.0038
45%	0.2406	0.2404	0.2390	0.2383	0.2396	0.0011	0.0046
50%	0.2514	0.2502	0.2495	0.2481	0.2498	0.0014	0.0055
55%	0.2647	0.2632	0.2623	0.2602	0.2626	0.0019	0.0071
60%	0.2846	0.2814	0.2827	0.2772	0.2815	0.0031	0.0111
65%	1.9215	1.9127	1.9260	1.9103	1.9176	0.0074	0.0039
70%	1.9559	1.9519	1.9552	1.9507	1.9534	0.0025	0.0013
75%	1.9729	1.9697	1.9740	1.9716	1.9721	0.0018	0.0009
80%	1.9911	1.9871	1.9916	1.9889	1.9897	0.0021	0.0010
85%	2.0101	2.0046	2.0099	2.0069	2.0079	0.0026	0.0013
90%	2.0349	2.0340	2.0368	2.0321	2.0344	0.0019	0.0010
95%	3.7291	3.7281	3.7350	3.7303	3.7307	0.0030	0.0008
97%	3.7588	3.7617	3.7669	3.7625	3.7625	0.0034	0.0009
99%	3.8212	3.8204	3.8312	3.8192	3.8230	0.0055	0.0014
Kurtosis	1.90	1.69	1.85	1.71	1.79	0.10	
Skewness	1.43	1.40	1.41	1.41	1.41	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
DT	11974.012687	58	0.013	0.756480
SS040	6549.084354	0.38	0.007	0.002711
SS041	12138.908578	0.1115	0.013	0.001474
SS049	27257.260014	0.0375	0.030	0.001113
SS050	18423.776774	0.0295	0.020	0.000592
SS051	22567.031543	0.0395	0.025	0.000971
SS052	22572.957443	0.073	0.025	0.001795
SS059	7542.361137	0.4	0.008	0.003286
SS060	22045.249270	0.17	0.024	0.004082
SS062	47435.372730	0.00875	0.052	0.000452
SS064	44555.378271	0.0495	0.049	0.002402
SS066	35406.196522	0.0338	0.039	0.001304
SS067	60631.653686	0.2325	0.066	0.015355
SS068	48714.447449	0.073	0.053	0.003874
SS069	32816.864108	0.0295	0.036	0.001055
SS070	2283.692853	0.18	0.002	0.000448
SS072	11909.497125	0.085	0.013	0.001103
SS073	36277.798801	0.435	0.040	0.017189
SS074	32138.574222	0.505	0.035	0.017679
SS075	18014.766940	0.53	0.020	0.010400
SS076	18712.074358	0.23	0.020	0.004688
SS077	17293.421843	0.104	0.019	0.001959
SS078	20418.577935	0.0008	0.022	0.000018
SS079	39554.346585	0.04775	0.043	0.002057
SS083	8106.511786	0.19	0.009	0.001678
SS084	23869.869342	0.0725	0.026	0.001885
SS085	40357.707315	0.21	0.044	0.009232
SS086	23258.047475	0.079	0.025	0.002001
SS087	22447.914930	0.0425	0.024	0.001039
SS088	35448.708946	0.1225	0.039	0.004730
SS089	25110.636808	0.31	0.027	0.008479
SS090	44026.612330	0.175	0.048	0.008392
SS091	9825.866696	0.228	0.011	0.002440
SS093	50604.523169	0.04025	0.055	0.002219
SS100	17769.140049	0.165	0.019	0.003194
	918,058.84	63.42	1.00	0.90

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0754	0.0706	0.0568	0.0774	0.0700	0.0093	0.1325
Max	8.3863	6.7531	6.7526	6.7636	7.1639	0.8149	0.1138
Average	0.8405	0.8891	0.8383	0.8602	0.8570	0.0236	0.0275
Std Dev	1.0651	1.1014	1.0526	1.0838	1.0757	0.0214	0.0199
1%	0.0958	0.0964	0.0964	0.0970	0.0964	0.0005	0.0053
5%	0.1103	0.1113	0.1097	0.1106	0.1105	0.0007	0.0063
10%	0.1178	0.1192	0.1190	0.1194	0.1188	0.0007	0.0062
15%	0.1239	0.1260	0.1252	0.1255	0.1251	0.0009	0.0074
20%	0.1294	0.1315	0.1305	0.1311	0.1306	0.0009	0.0069
25%	0.1343	0.1357	0.1353	0.1357	0.1352	0.0007	0.0050
30%	0.1391	0.1403	0.1397	0.1402	0.1398	0.0005	0.0039
35%	0.1440	0.1448	0.1445	0.1450	0.1446	0.0004	0.0031
40%	0.1486	0.1498	0.1497	0.1497	0.1494	0.0006	0.0038
45%	0.1538	0.1553	0.1544	0.1549	0.1546	0.0007	0.0043
50%	0.1595	0.1613	0.1601	0.1610	0.1605	0.0008	0.0052
55%	0.1661	0.1688	0.1672	0.1682	0.1676	0.0012	0.0071
60%	0.1768	0.1808	0.1780	0.1777	0.1783	0.0017	0.0095
65%	0.2065	1.7593	0.2173	1.7442	0.9818	0.8890	0.9055
70%	1.7733	1.7795	1.7747	1.7763	1.7760	0.0027	0.0015
75%	1.7861	1.7908	1.7856	1.7877	1.7875	0.0024	0.0013
80%	1.7960	1.8011	1.7959	1.7985	1.7979	0.0025	0.0014
85%	1.8063	1.8120	1.8067	1.8089	1.8085	0.0026	0.0014
90%	1.8227	1.8317	1.8227	1.8264	1.8259	0.0043	0.0023
95%	3.4338	3.4434	3.4317	3.4412	3.4375	0.0057	0.0016
97%	3.4562	3.4598	3.4546	3.4596	3.4575	0.0025	0.0007
99%	3.5064	3.4907	3.4952	3.5001	3.4981	0.0068	0.0019
Kurtosis	2.33	1.61	2.17	1.94	2.01	0.31	
Skewness	1.52	1.39	1.48	1.47	1.47	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
DT	11974.012687	50	0.013	0.652138
SS040	6549.084354	4.85	0.007	0.034598
SS041	12138.908578	0.355	0.013	0.004694
SS049	27257.260014	0.185	0.030	0.005493
SS050	18423.776774	0.33	0.020	0.006623
SS051	22567.031543	1.35	0.025	0.033185
SS052	22572.957443	1.25	0.025	0.030735
SS059	7542.361137	3	0.008	0.024647
SS060	22045.249270	0.855	0.024	0.020531
SS062	47435.372730	0.004	0.052	0.000207
SS064	44555.378271	0.41	0.049	0.019898
SS066	35406.196522	0.225	0.039	0.008677
SS067	60631.653686	2.85	0.066	0.188223
SS068	48714.447449	2.4	0.053	0.127350
SS069	32816.864108	0.03225	0.036	0.001153
SS070	2283.692853	5.35	0.002	0.013308
SS072	11909.497125	8.15	0.013	0.105726
SS073	36277.798801	7.4	0.040	0.292417
SS074	32138.574222	3.6	0.035	0.126026
SS075	18014.766940	0.905	0.020	0.017759
SS076	18712.074358	0.965	0.020	0.019669
SS077	17293.421843	0.33685	0.019	0.006345
SS078	20418.577935	0.0134	0.022	0.000298
SS079	39554.346585	1.8	0.043	0.077553
SS083	8106.511786	0.825	0.009	0.007285
SS084	23869.869342	0.491	0.026	0.012766
SS085	40357.707315	7.8	0.044	0.342887
SS086	23258.047475	1.9	0.025	0.048134
SS087	22447.914930	0.56	0.024	0.013693
SS088	35448.708946	1.49	0.039	0.057533
SS089	25110.636808	10.3	0.027	0.281724
SS090	44026.612330	2.1	0.048	0.100708
SS091	9825.866696	5.65	0.011	0.060471
SS093	50604.523169	0.49	0.055	0.027009
SS100	17769.140049	2.1	0.019	0.040646
	918058.84	130.32	1.00	2.81

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.9326	0.9421	0.9906	0.9795	0.9612	0.0282	0.0293
Max	8.9419	9.0880	7.9086	9.5027	8.8603	0.6775	0.0765
Average	2.7660	2.7678	2.7714	2.7742	2.7699	0.0037	0.0013
Std Dev	0.9938	1.0007	0.9924	1.0105	0.9994	0.0083	0.0083
1%	1.3304	1.3075	1.3341	1.3114	1.3208	0.0133	0.0101
5%	1.5681	1.5783	1.5793	1.5697	1.5738	0.0058	0.0037
10%	1.7355	1.7302	1.7376	1.7118	1.7288	0.0117	0.0068
15%	1.8397	1.8397	1.8461	1.8322	1.8394	0.0057	0.0031
20%	1.9277	1.9395	1.9364	1.9367	1.9351	0.0051	0.0026
25%	2.0238	2.0329	2.0311	2.0211	2.0272	0.0057	0.0028
30%	2.1182	2.1093	2.1243	2.1097	2.1154	0.0073	0.0034
35%	2.2100	2.1979	2.2047	2.2037	2.2041	0.0049	0.0022
40%	2.3032	2.2946	2.2932	2.2871	2.2945	0.0067	0.0029
45%	2.3933	2.3892	2.3887	2.3766	2.3869	0.0072	0.0030
50%	2.5077	2.4915	2.4903	2.4997	2.4973	0.0081	0.0032
55%	2.6244	2.6013	2.6188	2.6363	2.6202	0.0146	0.0056
60%	2.7808	2.7822	2.8005	2.7938	2.7893	0.0094	0.0034
65%	2.9726	2.9953	3.0074	3.0160	2.9978	0.0189	0.0063
70%	3.1889	3.1946	3.2243	3.2090	3.2042	0.0159	0.0050
75%	3.3798	3.3763	3.3845	3.4121	3.3882	0.0163	0.0048
80%	3.5654	3.5820	3.5779	3.5987	3.5810	0.0137	0.0038
85%	3.7784	3.7958	3.7838	3.7940	3.7880	0.0083	0.0022
90%	4.0969	4.0971	4.0888	4.1119	4.0987	0.0096	0.0023
95%	4.7376	4.7434	4.7155	4.7262	4.7307	0.0124	0.0026
97%	5.0955	5.0760	5.0592	5.1042	5.0837	0.0202	0.0040
99%	5.7837	5.8377	5.7159	5.8437	5.7953	0.0594	0.0102
Kurtosis	1.46	1.49	1.20	1.65	1.45	0.19	
Skewness	1.12	1.11	1.07	1.13	1.11	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Eastern Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
DT	29501.556218	0.0051416	0.032	0.000165
GA-Soil-001	992.682376	0.00046625	0.001	0.000001
GA-Soil-011	52001.102596	0.0013054	0.057	0.000074
GA-Soil-004	62775.388595	0.00022527	0.068	0.000015
GA-Soil-005	28143.741349	0.0015181	0.031	0.000047
NL	10179.401437	0.002452535	0.011	0.000027
PA	17757.470723	0.009941079	0.019	0.000192
SS038	571.184071	0.00084781	0.001	0.000001
SS041	27967.360192	0.001114581	0.030	0.000034
SS043	18004.194071	0.000226308	0.020	0.000004
SS044	34964.935129	0.007128588	0.038	0.000271
SS058	7234.531500	0.05438542	0.008	0.000429
SS062	47470.580198	0.000826882	0.052	0.000043
SS066	107820.272149	0.00039055	0.117	0.000046
SS068	79228.028205	0.004206603	0.086	0.000363
SS070	40667.304141	0.01133734	0.044	0.000502
SS076	47939.839881	0.000977	0.052	0.000051
SS082	21.655742	0.003638946	0.000	0.000000
SS084	66698.085036	0.00030702	0.073	0.000022
SS086	24410.849590	0.002422703	0.027	0.000064
SS088	81126.969281	0.002045736	0.088	0.000181
SS093	114837.019825	0.000779472	0.125	0.000098
SS100	17744.691599	0.002220907	0.019	0.000043
	918,058.84	0.11	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0008	0.0007	0.0007	0.0007	0.0007	0.0000	0.0452
Max	0.0122	0.0099	0.0108	0.0098	0.0107	0.0011	0.1049
Average	0.0027	0.0027	0.0027	0.0027	0.0027	0.0000	0.0029
Std Dev	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0070
1%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0134
5%	0.0014	0.0014	0.0014	0.0014	0.0014	0.0000	0.0088
10%	0.0016	0.0016	0.0016	0.0016	0.0016	0.0000	0.0050
15%	0.0017	0.0017	0.0017	0.0017	0.0017	0.0000	0.0044
20%	0.0018	0.0018	0.0018	0.0018	0.0018	0.0000	0.0033
25%	0.0019	0.0019	0.0019	0.0019	0.0019	0.0000	0.0013
30%	0.0020	0.0020	0.0020	0.0020	0.0020	0.0000	0.0036
35%	0.0021	0.0021	0.0021	0.0021	0.0021	0.0000	0.0011
40%	0.0022	0.0022	0.0022	0.0022	0.0022	0.0000	0.0030
45%	0.0023	0.0023	0.0023	0.0023	0.0023	0.0000	0.0021
50%	0.0024	0.0024	0.0024	0.0024	0.0024	0.0000	0.0019
55%	0.0025	0.0025	0.0025	0.0025	0.0025	0.0000	0.0043
60%	0.0026	0.0026	0.0026	0.0026	0.0026	0.0000	0.0039
65%	0.0027	0.0027	0.0027	0.0027	0.0027	0.0000	0.0072
70%	0.0028	0.0028	0.0029	0.0028	0.0028	0.0000	0.0081
75%	0.0030	0.0031	0.0031	0.0030	0.0030	0.0000	0.0134
80%	0.0034	0.0033	0.0034	0.0033	0.0034	0.0001	0.0162
85%	0.0039	0.0039	0.0040	0.0039	0.0039	0.0000	0.0095
90%	0.0044	0.0045	0.0044	0.0044	0.0044	0.0000	0.0094
95%	0.0049	0.0050	0.0049	0.0049	0.0049	0.0000	0.0085
97%	0.0052	0.0054	0.0052	0.0053	0.0053	0.0001	0.0139
99%	0.0064	0.0065	0.0064	0.0066	0.0065	0.0001	0.0180
Kurtosis	3.34	2.89	3.38	3.12	3.18	0.23	
Skewness	1.53	1.52	1.53	1.55	1.53	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	0.4225	0.276	0.116458
SS091	41488.993146	2.62	0.316	0.828315
SS092	53569.776687	1.85	0.408	0.755184
	131231.64	4.89	1.00	1.70

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.4225	0.4225	0.4225	0.4225	0.4225	0.0000	0.0000
Max	2.6200	2.6200	2.6200	2.6200	2.6200	0.0000	0.0000
Average	1.6358	1.6276	1.6390	1.6224	1.6312	0.0076	0.0047
Std Dev	0.5251	0.5338	0.5188	0.5248	0.5256	0.0062	0.0117
1%	0.4225	0.4225	0.4225	0.4225	0.4225	0.0000	0.0000
5%	0.8983	0.8983	0.8983	0.8983	0.8983	0.0000	0.0000
10%	0.8983	0.8983	0.8983	0.8983	0.8983	0.0000	0.0000
15%	1.1550	0.8983	1.1550	1.1550	1.0908	0.1283	0.1176
20%	1.1550	1.1550	1.1550	1.1550	1.1550	0.0000	0.0000
25%	1.1550	1.1550	1.3742	1.1550	1.2098	0.1096	0.0906
30%	1.3742	1.3742	1.3742	1.3742	1.3742	0.0000	0.0000
35%	1.3742	1.3742	1.3742	1.3742	1.3742	0.0000	0.0000
40%	1.6308	1.6308	1.6308	1.6308	1.6308	0.0000	0.0000
45%	1.6308	1.6308	1.6308	1.6308	1.6308	0.0000	0.0000
50%	1.6308	1.6308	1.6308	1.6308	1.6308	0.0000	0.0000
55%	1.6308	1.6308	1.6308	1.6308	1.6308	0.0000	0.0000
60%	1.8500	1.8500	1.8500	1.6308	1.7952	0.1096	0.0610
65%	1.8875	1.8875	1.8875	1.8875	1.8875	0.0000	0.0000
70%	1.8875	1.8875	1.8875	1.8875	1.8875	0.0000	0.0000
75%	2.1067	2.1067	2.1067	2.1067	2.1067	0.0000	0.0000
80%	2.1067	2.1067	2.1067	2.1067	2.1067	0.0000	0.0000
85%	2.1067	2.3633	2.1067	2.1067	2.1708	0.1283	0.0591
90%	2.3633	2.3633	2.3633	2.3633	2.3633	0.0000	0.0000
95%	2.3633	2.3633	2.3633	2.3633	2.3633	0.0000	0.0000
97%	2.6200	2.6200	2.6200	2.6200	2.6200	0.0000	0.0000
99%	2.6200	2.6200	2.6200	2.6200	2.6200	0.0000	0.0000
Kurtosis	-0.48	-0.54	-0.44	-0.49	-0.49	0.04	
Skewness	-0.22	-0.22	-0.20	-0.18	-0.21	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	55.75	0.276	15.367007
SS091	41488.993146	355	0.316	112.233548
SS092	53569.776687	130	0.408	53.067011
	131,231.64	540.75	1.00	180.67

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	55.7500	55.7500	55.7500	55.7500	55.7500	0.0000	0.0000
Max	355.0000	355.0000	355.0000	355.0000	355.0000	0.0000	0.0000
Average	180.3886	181.1692	180.8443	181.2646	180.9167	0.3954	0.0022
Std Dev	73.7129	73.4647	73.9705	74.4054	73.8884	0.4018	0.0054
1%	55.7500	55.7500	55.7500	55.7500	55.7500	0.0000	0.0000
5%	80.5000	80.5000	80.5000	80.5000	80.5000	0.0000	0.0000
10%	80.5000	80.5000	80.5000	80.5000	80.5000	0.0000	0.0000
15%	105.2500	80.5000	80.5000	105.2500	92.8750	14.2894	0.1539
20%	105.2500	105.2500	105.2500	105.2500	105.2500	0.0000	0.0000
25%	105.2500	105.2500	105.2500	105.2500	105.2500	0.0000	0.0000
30%	155.5000	155.5000	155.5000	155.5000	155.5000	0.0000	0.0000
35%	155.5000	155.5000	155.5000	155.5000	155.5000	0.0000	0.0000
40%	155.5000	180.2500	155.5000	155.5000	161.6875	12.3750	0.0765
45%	180.2500	180.2500	180.2500	180.2500	180.2500	0.0000	0.0000
50%	180.2500	180.2500	180.2500	180.2500	180.2500	0.0000	0.0000
55%	180.2500	180.2500	180.2500	180.2500	180.2500	0.0000	0.0000
60%	180.2500	180.2500	180.2500	180.2500	180.2500	0.0000	0.0000
65%	205.0000	205.0000	205.0000	205.0000	205.0000	0.0000	0.0000
70%	205.0000	205.0000	205.0000	205.0000	205.0000	0.0000	0.0000
75%	255.2500	255.2500	255.2500	255.2500	255.2500	0.0000	0.0000
80%	255.2500	255.2500	255.2500	255.2500	255.2500	0.0000	0.0000
85%	280.0000	255.2500	280.0000	280.0000	273.8125	12.3750	0.0452
90%	280.0000	280.0000	280.0000	280.0000	280.0000	0.0000	0.0000
95%	280.0000	280.0000	280.0000	280.0000	280.0000	0.0000	0.0000
97%	355.0000	355.0000	355.0000	355.0000	355.0000	0.0000	0.0000
99%	355.0000	355.0000	355.0000	355.0000	355.0000	0.0000	0.0000
Kurtosis	-0.53	-0.49	-0.53	-0.50	-0.51	0.02	
Skewness	0.31	0.29	0.30	0.32	0.30	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	40	0.276	11.025655
SS091	41488.993146	490	0.316	154.913911
SS092	53569.776687	215	0.408	87.764673
	131231.64	745.00	1.00	253.70

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	40.0000	40.0000	40.0000	40.0000	40.0000	0.0000	0.0000
Max	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000	0.0000
Average	249.3883	248.8917	246.4217	248.1150	248.2042	1.2987	0.0052
Std Dev	107.8309	108.1878	106.9776	106.7916	107.4470	0.6698	0.0062
1%	40.0000	40.0000	40.0000	40.0000	40.0000	0.0000	0.0000
5%	98.3333	98.3333	98.3333	98.3333	98.3333	0.0000	0.0000
10%	98.3333	98.3333	98.3333	98.3333	98.3333	0.0000	0.0000
15%	98.3333	98.3333	98.3333	98.3333	98.3333	0.0000	0.0000
20%	156.6667	156.6667	156.6667	156.6667	156.6667	0.0000	0.0000
25%	156.6667	156.6667	156.6667	156.6667	156.6667	0.0000	0.0000
30%	190.0000	190.0000	190.0000	190.0000	190.0000	0.0000	0.0000
35%	190.0000	190.0000	190.0000	190.0000	190.0000	0.0000	0.0000
40%	215.0000	215.0000	215.0000	215.0000	215.0000	0.0000	0.0000
45%	248.3333	248.3333	248.3333	248.3333	248.3333	0.0000	0.0000
50%	248.3333	248.3333	248.3333	248.3333	248.3333	0.0000	0.0000
55%	248.3333	248.3333	248.3333	248.3333	248.3333	0.0000	0.0000
60%	248.3333	248.3333	248.3333	248.3333	248.3333	0.0000	0.0000
65%	306.6667	306.6667	306.6667	306.6667	306.6667	0.0000	0.0000
70%	306.6667	306.6667	306.6667	306.6667	306.6667	0.0000	0.0000
75%	340.0000	340.0000	340.0000	340.0000	340.0000	0.0000	0.0000
80%	340.0000	340.0000	340.0000	340.0000	340.0000	0.0000	0.0000
85%	398.3333	398.3333	340.0000	340.0000	369.1667	33.6788	0.0912
90%	398.3333	398.3333	398.3333	398.3333	398.3333	0.0000	0.0000
95%	398.3333	398.3333	398.3333	398.3333	398.3333	0.0000	0.0000
97%	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000	0.0000
99%	490.0000	490.0000	490.0000	490.0000	490.0000	0.0000	0.0000
Kurtosis	-0.51	-0.55	-0.50	-0.53	-0.52	0.02	
Skewness	0.14	0.13	0.16	0.16	0.15	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	24.25	0.276	6.684303
SS091	41488.993146	54.5	0.316	17.230221
SS092	53569.776687	29.5	0.408	12.042130
	131231.64	108.25	1.00	35.96

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	24.2500	24.2500	24.2500	24.2500	24.2500	0.0000	0.0000
Max	54.5000	54.5000	54.5000	54.5000	54.5000	0.0000	0.0000
Average	36.0422	36.1110	36.0988	36.1464	36.0996	0.0433	0.0012
Std Dev	7.6325	7.6316	7.6291	7.6089	7.6255	0.0112	0.0015
1%	24.2500	24.2500	24.2500	24.2500	24.2500	0.0000	0.0000
5%	26.0000	26.0000	26.0000	26.0000	26.0000	0.0000	0.0000
10%	26.0000	26.0000	26.0000	26.0000	26.0000	0.0000	0.0000
15%	27.7500	26.0000	27.7500	27.7500	27.3125	0.8750	0.0320
20%	27.7500	27.7500	27.7500	27.7500	27.7500	0.0000	0.0000
25%	27.7500	27.7500	27.7500	27.7500	27.7500	0.0000	0.0000
30%	34.3333	34.3333	34.3333	34.3333	34.3333	0.0000	0.0000
35%	34.3333	34.3333	34.3333	34.3333	34.3333	0.0000	0.0000
40%	34.3333	34.3333	34.3333	34.3333	34.3333	0.0000	0.0000
45%	36.0833	36.0833	36.0833	36.0833	36.0833	0.0000	0.0000
50%	36.0833	36.0833	36.0833	36.0833	36.0833	0.0000	0.0000
55%	36.0833	36.0833	36.0833	36.0833	36.0833	0.0000	0.0000
60%	36.0833	36.0833	36.0833	36.0833	36.0833	0.0000	0.0000
65%	37.8333	37.8333	37.8333	37.8333	37.8333	0.0000	0.0000
70%	37.8333	37.8333	37.8333	37.8333	37.8333	0.0000	0.0000
75%	44.4167	44.4167	44.4167	44.4167	44.4167	0.0000	0.0000
80%	44.4167	44.4167	44.4167	44.4167	44.4167	0.0000	0.0000
85%	46.1667	46.1667	44.4167	46.1667	45.7292	0.8750	0.0191
90%	46.1667	46.1667	46.1667	46.1667	46.1667	0.0000	0.0000
95%	46.1667	46.1667	46.1667	46.1667	46.1667	0.0000	0.0000
97%	54.5000	54.5000	54.5000	54.5000	54.5000	0.0000	0.0000
99%	54.5000	54.5000	54.5000	54.5000	54.5000	0.0000	0.0000
Kurtosis	-0.44	-0.54	-0.50	-0.57	-0.51	0.06	
Skewness	0.39	0.34	0.37	0.32	0.35	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	1.895	0.276	0.522340
SS091	41488.993146	0.78	0.316	0.246598
SS092	53569.776687	0.52	0.408	0.212268
	131231.64	3.20	1.00	0.98

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.5200	0.5200	0.5200	0.5200	0.5200	0.0000	0.0000
Max	1.8950	1.8950	1.8950	1.8950	1.8950	0.0000	0.0000
Average	1.0686	1.0711	1.0620	1.0577	1.0649	0.0062	0.0058
Std Dev	0.3482	0.3507	0.3432	0.3425	0.3461	0.0039	0.0114
1%	0.5200	0.5200	0.5200	0.5200	0.5200	0.0000	0.0000
5%	0.6067	0.6067	0.6067	0.6067	0.6067	0.0000	0.0000
10%	0.6067	0.6067	0.6067	0.6067	0.6067	0.0000	0.0000
15%	0.6933	0.6933	0.6067	0.6067	0.6500	0.0500	0.0770
20%	0.6933	0.6933	0.6933	0.6933	0.6933	0.0000	0.0000
25%	0.6933	0.6933	0.6933	0.6933	0.6933	0.0000	0.0000
30%	0.9783	0.9783	0.9783	0.7800	0.9287	0.0992	0.1068
35%	0.9783	0.9783	0.9783	0.9783	0.9783	0.0000	0.0000
40%	0.9783	0.9783	0.9783	0.9783	0.9783	0.0000	0.0000
45%	1.0650	1.0650	1.0650	1.0650	1.0650	0.0000	0.0000
50%	1.0650	1.0650	1.0650	1.0650	1.0650	0.0000	0.0000
55%	1.0650	1.0650	1.0650	1.0650	1.0650	0.0000	0.0000
60%	1.0650	1.0650	1.0650	1.0650	1.0650	0.0000	0.0000
65%	1.1517	1.1517	1.1517	1.1517	1.1517	0.0000	0.0000
70%	1.1517	1.1517	1.1517	1.1517	1.1517	0.0000	0.0000
75%	1.4367	1.4367	1.4367	1.4367	1.4367	0.0000	0.0000
80%	1.4367	1.4367	1.4367	1.4367	1.4367	0.0000	0.0000
85%	1.5233	1.5233	1.4367	1.4367	1.4800	0.0500	0.0338
90%	1.5233	1.5233	1.5233	1.5233	1.5233	0.0000	0.0000
95%	1.5233	1.5233	1.5233	1.5233	1.5233	0.0000	0.0000
97%	1.8950	1.8950	1.8950	1.8950	1.8950	0.0000	0.0000
99%	1.8950	1.8950	1.8950	1.8950	1.8950	0.0000	0.0000
Kurtosis	-0.50	-0.54	-0.48	-0.49	-0.50	0.03	
Skewness	0.37	0.35	0.35	0.36	0.36	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	16.319775	0.276	4.498405
SS091	41488.993146	7.60555	0.316	2.404501
SS092	53569.776687	10.5707	0.408	4.315042
	131231.64	34.50	1.00	11.22

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	7.6056	7.6056	7.6056	7.6056	7.6056	0.0000	0.0000
Max	16.3198	16.3198	16.3198	16.3198	16.3198	0.0000	0.0000
Average	11.4668	11.4506	11.4961	11.4888	11.4756	0.0208	0.0018
Std Dev	2.0602	2.0633	2.1032	2.0750	2.0754	0.0196	0.0094
1%	7.6056	7.6056	7.6056	7.6056	7.6056	0.0000	0.0000
5%	8.5939	8.5939	8.5939	8.5939	8.5939	0.0000	0.0000
10%	8.5939	8.5939	8.5939	8.5939	8.5939	0.0000	0.0000
15%	9.5823	9.5823	8.5939	9.5823	9.3352	0.4942	0.0529
20%	9.5823	9.5823	9.5823	9.5823	9.5823	0.0000	0.0000
25%	9.5823	9.5823	9.5823	9.5823	9.5823	0.0000	0.0000
30%	10.5103	10.5103	10.5103	10.5103	10.5103	0.0000	0.0000
35%	10.5103	10.5103	10.5103	10.5103	10.5103	0.0000	0.0000
40%	10.5707	10.5707	10.5707	10.5707	10.5707	0.0000	0.0000
45%	11.4987	11.4987	11.4987	11.4987	11.4987	0.0000	0.0000
50%	11.4987	11.4987	11.4987	11.4987	11.4987	0.0000	0.0000
55%	11.4987	11.4987	11.4987	11.4987	11.4987	0.0000	0.0000
60%	11.4987	11.4987	11.4987	11.4987	11.4987	0.0000	0.0000
65%	12.4871	12.4871	12.4871	12.4871	12.4871	0.0000	0.0000
70%	12.4871	12.4871	12.4871	12.4871	12.4871	0.0000	0.0000
75%	13.4150	13.4150	13.4150	13.4150	13.4150	0.0000	0.0000
80%	13.4150	13.4150	13.4150	13.4150	13.4150	0.0000	0.0000
85%	13.4150	13.4150	14.4034	13.4150	13.6621	0.4942	0.0362
90%	14.4034	14.4034	14.4034	14.4034	14.4034	0.0000	0.0000
95%	14.4034	14.4034	14.4034	14.4034	14.4034	0.0000	0.0000
97%	16.3198	16.3198	16.3198	16.3198	16.3198	0.0000	0.0000
99%	16.3198	16.3198	16.3198	16.3198	16.3198	0.0000	0.0000
Kurtosis	-0.52	-0.50	-0.51	-0.50	-0.51	0.01	
Skewness	0.20	0.23	0.23	0.21	0.22	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	1.55	0.276	0.427244
SS091	41488.993146	1.23	0.316	0.388866
SS092	53569.776687	0.55	0.408	0.224514
	131231.64	3.33	1.00	1.04

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.5500	0.5500	0.5500	0.5500	0.5500	0.0000	0.0000
Max	1.5500	1.5500	1.5500	1.5500	1.5500	0.0000	0.0000
Average	1.1083	1.1101	1.1116	1.1033	1.1083	0.0036	0.0033
Std Dev	0.2448	0.2449	0.2369	0.2422	0.2422	0.0037	0.0154
1%	0.5500	0.5500	0.5500	0.5500	0.5500	0.0000	0.0000
5%	0.7767	0.7767	0.7767	0.7767	0.7767	0.0000	0.0000
10%	0.7767	0.7767	0.7767	0.7767	0.7767	0.0000	0.0000
15%	0.7767	0.7767	0.8833	0.7767	0.8033	0.0533	0.0664
20%	0.8833	0.8833	0.8833	0.8833	0.8833	0.0000	0.0000
25%	0.8833	0.8833	0.8833	0.8833	0.8833	0.0000	0.0000
30%	1.0033	1.0033	1.0033	1.0033	1.0033	0.0000	0.0000
35%	1.0033	1.0033	1.0033	1.0033	1.0033	0.0000	0.0000
40%	1.1100	1.1100	1.1100	1.1100	1.1100	0.0000	0.0000
45%	1.1100	1.1100	1.1100	1.1100	1.1100	0.0000	0.0000
50%	1.1100	1.1100	1.1100	1.1100	1.1100	0.0000	0.0000
55%	1.1100	1.1100	1.1100	1.1100	1.1100	0.0000	0.0000
60%	1.2167	1.2167	1.2167	1.1100	1.1900	0.0533	0.0448
65%	1.2167	1.2167	1.2167	1.2167	1.2167	0.0000	0.0000
70%	1.2207	1.2167	1.2167	1.2167	1.2177	0.0020	0.0016
75%	1.3367	1.3367	1.3367	1.3367	1.3367	0.0000	0.0000
80%	1.3367	1.3367	1.3367	1.3367	1.3367	0.0000	0.0000
85%	1.3367	1.4433	1.3367	1.3367	1.3633	0.0533	0.0391
90%	1.4433	1.4433	1.4433	1.4433	1.4433	0.0000	0.0000
95%	1.4433	1.4433	1.4433	1.4433	1.4433	0.0000	0.0000
97%	1.5500	1.5500	1.5500	1.5500	1.5500	0.0000	0.0000
99%	1.5500	1.5500	1.5500	1.5500	1.5500	0.0000	0.0000
Kurtosis	-0.52	-0.51	-0.48	-0.52	-0.50	0.02	
Skewness	-0.26	-0.25	-0.23	-0.21	-0.24	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	0.2925	0.276	0.080625
SS091	41488.993146	0.335	0.316	0.105911
SS092	53569.776687	0.4	0.408	0.163283
	131,231.64	1.03	1.00	0.35

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2925	0.2925	0.2925	0.2925	0.2925	0.0000	0.0000
Max	0.4000	0.4000	0.4000	0.4000	0.4000	0.0000	0.0000
Average	0.3419	0.3416	0.3426	0.3426	0.3422	0.0005	0.0015
Std Dev	0.0252	0.0252	0.0257	0.0253	0.0253	0.0002	0.0098
1%	0.2925	0.2925	0.2925	0.2925	0.2925	0.0000	0.0000
5%	0.3067	0.3067	0.3067	0.3067	0.3067	0.0000	0.0000
10%	0.3067	0.3067	0.3067	0.3067	0.3067	0.0000	0.0000
15%	0.3208	0.3067	0.3067	0.3208	0.3137	0.0082	0.0261
20%	0.3208	0.3208	0.3208	0.3208	0.3208	0.0000	0.0000
25%	0.3208	0.3208	0.3208	0.3208	0.3208	0.0000	0.0000
30%	0.3283	0.3283	0.3283	0.3283	0.3283	0.0000	0.0000
35%	0.3283	0.3283	0.3283	0.3283	0.3283	0.0000	0.0000
40%	0.3350	0.3350	0.3350	0.3350	0.3350	0.0000	0.0000
45%	0.3425	0.3425	0.3425	0.3425	0.3425	0.0000	0.0000
50%	0.3425	0.3425	0.3425	0.3425	0.3425	0.0000	0.0000
55%	0.3425	0.3425	0.3425	0.3425	0.3425	0.0000	0.0000
60%	0.3425	0.3425	0.3425	0.3425	0.3425	0.0000	0.0000
65%	0.3567	0.3567	0.3567	0.3567	0.3567	0.0000	0.0000
70%	0.3567	0.3567	0.3567	0.3567	0.3567	0.0000	0.0000
75%	0.3567	0.3567	0.3642	0.3642	0.3604	0.0043	0.0120
80%	0.3642	0.3642	0.3642	0.3642	0.3642	0.0000	0.0000
85%	0.3642	0.3642	0.3783	0.3642	0.3677	0.0071	0.0193
90%	0.3783	0.3783	0.3783	0.3783	0.3783	0.0000	0.0000
95%	0.3783	0.3783	0.3783	0.3783	0.3783	0.0000	0.0000
97%	0.4000	0.4000	0.4000	0.4000	0.4000	0.0000	0.0000
99%	0.4000	0.4000	0.4000	0.4000	0.4000	0.0000	0.0000
Kurtosis	-0.46	-0.43	-0.52	-0.48	-0.48	0.04	
Skewness	0.15	0.14	0.15	0.17	0.15	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	0.18	0.276	0.049615
SS091	41488.993146	0.228	0.316	0.072082
SS092	53569.776687	0.295	0.408	0.120421
	131,231.64	0.70	1.00	0.24

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1800	0.1800	0.1800	0.1800	0.1800	0.0000	0.0000
Max	0.2950	0.2950	0.2950	0.2950	0.2950	0.0000	0.0000
Average	0.2341	0.2346	0.2341	0.2350	0.2345	0.0004	0.0018
Std Dev	0.0270	0.0269	0.0272	0.0274	0.0271	0.0002	0.0087
1%	0.1800	0.1800	0.1800	0.1800	0.1800	0.0000	0.0000
5%	0.1960	0.1960	0.1960	0.1960	0.1960	0.0000	0.0000
10%	0.1960	0.1960	0.1960	0.1960	0.1960	0.0000	0.0000
15%	0.2120	0.2120	0.2120	0.2120	0.2120	0.0000	0.0000
20%	0.2120	0.2120	0.2120	0.2120	0.2120	0.0000	0.0000
25%	0.2120	0.2183	0.2120	0.2183	0.2152	0.0037	0.0170
30%	0.2183	0.2183	0.2183	0.2183	0.2183	0.0000	0.0000
35%	0.2183	0.2183	0.2183	0.2183	0.2183	0.0000	0.0000
40%	0.2280	0.2280	0.2280	0.2343	0.2296	0.0032	0.0138
45%	0.2343	0.2343	0.2343	0.2343	0.2343	0.0000	0.0000
50%	0.2343	0.2343	0.2343	0.2343	0.2343	0.0000	0.0000
55%	0.2343	0.2343	0.2343	0.2343	0.2343	0.0000	0.0000
60%	0.2343	0.2343	0.2343	0.2343	0.2343	0.0000	0.0000
65%	0.2503	0.2503	0.2503	0.2503	0.2503	0.0000	0.0000
70%	0.2503	0.2503	0.2503	0.2503	0.2503	0.0000	0.0000
75%	0.2567	0.2567	0.2567	0.2567	0.2567	0.0000	0.0000
80%	0.2567	0.2567	0.2567	0.2567	0.2567	0.0000	0.0000
85%	0.2567	0.2567	0.2567	0.2727	0.2607	0.0080	0.0307
90%	0.2727	0.2727	0.2727	0.2727	0.2727	0.0000	0.0000
95%	0.2727	0.2727	0.2727	0.2727	0.2727	0.0000	0.0000
97%	0.2950	0.2950	0.2950	0.2950	0.2950	0.0000	0.0000
99%	0.2950	0.2950	0.2950	0.2950	0.2950	0.0000	0.0000
Kurtosis	-0.46	-0.46	-0.47	-0.47	-0.46	0.01	
Skewness	0.08	0.10	0.14	0.12	0.11	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
SS070	36172.870594	5.35	0.276	1.474681
SS091	41488.993146	5.65	0.316	1.786252
SS092	53569.776687	4.6	0.408	1.877756
	131231.64	15.60	1.00	5.14

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	4.6000	4.6000	4.6000	4.6000	4.6000	0.0000	0.0000
Max	5.6500	5.6500	5.6500	5.6500	5.6500	0.0000	0.0000
Average	5.2055	5.2005	5.2051	5.2053	5.2041	0.0024	0.0005
Std Dev	0.2533	0.2577	0.2534	0.2517	0.2540	0.0026	0.0102
1%	4.6000	4.6000	4.6000	4.6000	4.6000	0.0000	0.0000
5%	4.8500	4.8500	4.8500	4.8500	4.8500	0.0000	0.0000
10%	4.8500	4.8500	4.8500	4.8500	4.8500	0.0000	0.0000
15%	4.9500	4.9500	4.9500	4.9500	4.9500	0.0000	0.0000
20%	4.9500	4.9500	4.9500	4.9500	4.9500	0.0000	0.0000
25%	4.9500	4.9500	5.1000	5.1000	5.0250	0.0866	0.0172
30%	5.1000	5.1000	5.1000	5.1000	5.1000	0.0000	0.0000
35%	5.1000	5.1000	5.1000	5.1000	5.1000	0.0000	0.0000
40%	5.2000	5.2000	5.2000	5.2000	5.2000	0.0000	0.0000
45%	5.2000	5.2000	5.2000	5.2000	5.2000	0.0000	0.0000
50%	5.2000	5.2000	5.2000	5.2000	5.2000	0.0000	0.0000
55%	5.2000	5.2000	5.2000	5.2000	5.2000	0.0000	0.0000
60%	5.3000	5.3000	5.3000	5.3000	5.3000	0.0000	0.0000
65%	5.3000	5.3000	5.3000	5.3000	5.3000	0.0000	0.0000
70%	5.3500	5.3500	5.3500	5.3000	5.3375	0.0250	0.0047
75%	5.4500	5.4500	5.4500	5.4500	5.4500	0.0000	0.0000
80%	5.4500	5.4500	5.4500	5.4500	5.4500	0.0000	0.0000
85%	5.5500	5.5500	5.5500	5.4500	5.5250	0.0500	0.0090
90%	5.5500	5.5500	5.5500	5.5500	5.5500	0.0000	0.0000
95%	5.5500	5.5500	5.5500	5.5500	5.5500	0.0000	0.0000
97%	5.6500	5.6500	5.6500	5.6500	5.6500	0.0000	0.0000
99%	5.6500	5.6500	5.6500	5.6500	5.6500	0.0000	0.0000
Kurtosis	-0.52	-0.54	-0.46	-0.44	-0.49	0.05	
Skewness	-0.28	-0.28	-0.30	-0.30	-0.29	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Northeast Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
SS070	131231.640425	0.01133734	1.000	0.011337
	131,231.64	0.01	1.00	0.01

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0113	0.0113	0.0113	0.0113	0.0113		
Max	0.0113	0.0113	0.0113	0.0113	0.0113		
Average	0.0113	0.0113	0.0113	0.0113	0.0113		
Std Dev							
1%	0.0113	0.0113	0.0113	0.0113	0.0113		
5%	0.0113	0.0113	0.0113	0.0113	0.0113		
10%	0.0113	0.0113	0.0113	0.0113	0.0113		
15%	0.0113	0.0113	0.0113	0.0113	0.0113		
20%	0.0113	0.0113	0.0113	0.0113	0.0113		
25%	0.0113	0.0113	0.0113	0.0113	0.0113		
30%	0.0113	0.0113	0.0113	0.0113	0.0113		
35%	0.0113	0.0113	0.0113	0.0113	0.0113		
40%	0.0113	0.0113	0.0113	0.0113	0.0113		
45%	0.0113	0.0113	0.0113	0.0113	0.0113		
50%	0.0113	0.0113	0.0113	0.0113	0.0113		
55%	0.0113	0.0113	0.0113	0.0113	0.0113		
60%	0.0113	0.0113	0.0113	0.0113	0.0113		
65%	0.0113	0.0113	0.0113	0.0113	0.0113		
70%	0.0113	0.0113	0.0113	0.0113	0.0113		
75%	0.0113	0.0113	0.0113	0.0113	0.0113		
80%	0.0113	0.0113	0.0113	0.0113	0.0113		
85%	0.0113	0.0113	0.0113	0.0113	0.0113		
90%	0.0113	0.0113	0.0113	0.0113	0.0113		
95%	0.0113	0.0113	0.0113	0.0113	0.0113		
97%	0.0113	0.0113	0.0113	0.0113	0.0113		
99%	0.0113	0.0113	0.0113	0.0113	0.0113		
Kurtosis							
Skewness							

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS008	26260.955921	0.175	0.079	0.013848
SS009	27942.575713	0.175	0.084	0.014735
SS016	21747.328047	0.18	0.066	0.011795
SS017	44798.375144	0.1775	0.135	0.023961
SS018	31703.767621	0.18	0.096	0.017196
SS026	40627.011886	0.1775	0.122	0.021729
SS027	41072.504516	0.25	0.124	0.030941
SS032	8279.919827	106	0.025	2.644651
SS033	34730.818998	0.1775	0.105	0.018576
SS034	29977.861355	0.175	0.090	0.015808
SS046	10559.696663	0.1825	0.032	0.005807
SS047	14165.812437	0.18	0.043	0.007683
	331866.63	108.03	1.00	2.83

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1758	0.1758	0.1760	0.1758	0.1759	0.0001	0.0006
Max	35.4700	35.4583	35.4633	26.6577	33.2623	4.4031	0.1324
Average	2.9241	2.8038	2.8728	2.8834	2.8710	0.0500	0.0174
Std Dev	4.8145	4.7614	4.7703	4.8421	4.7971	0.0380	0.0079
1%	0.1767	0.1767	0.1769	0.1767	0.1767	0.0001	0.0006
5%	0.1773	0.1773	0.1775	0.1773	0.1773	0.0001	0.0006
10%	0.1779	0.1779	0.1779	0.1779	0.1779	0.0000	0.0000
15%	0.1827	0.1823	0.1827	0.1827	0.1826	0.0002	0.0011
20%	0.1833	0.1831	0.1833	0.1833	0.1833	0.0001	0.0006
25%	0.1835	0.1835	0.1835	0.1835	0.1835	0.0000	0.0000
30%	0.1840	0.1837	0.1838	0.1838	0.1838	0.0001	0.0006
35%	0.1842	0.1840	0.1842	0.1842	0.1841	0.0001	0.0006
40%	0.1890	0.1848	0.1887	0.1887	0.1878	0.0020	0.0107
45%	0.1894	0.1892	0.1894	0.1894	0.1893	0.0001	0.0006
50%	0.1898	0.1896	0.1898	0.1896	0.1897	0.0001	0.0006
55%	0.1902	0.1900	0.1902	0.1900	0.1901	0.0001	0.0006
60%	0.1952	0.1910	0.1950	0.1948	0.1940	0.0020	0.0102
65%	0.1958	0.1956	0.1958	0.1958	0.1958	0.0001	0.0005
70%	0.2017	0.1967	0.2015	0.2015	0.2003	0.0024	0.0121
75%	8.9960	8.9956	8.9958	8.9958	8.9958	0.0002	0.0000
80%	9.0019	9.0015	9.0017	9.0017	9.0017	0.0002	0.0000
85%	9.0027	9.0025	9.0025	9.0027	9.0026	0.0001	0.0000
90%	9.0083	9.0081	9.0083	9.0083	9.0083	0.0001	0.0000
95%	9.0148	9.0144	9.0146	9.0148	9.0146	0.0002	0.0000
97%	17.8148	17.8144	17.8146	17.8148	17.8146	0.0002	0.0000
99%	17.8269	17.8265	17.8267	17.8269	17.8267	0.0002	0.0000
Kurtosis	2.78	3.53	2.65	2.81	2.94	0.40	
Skewness	1.70	1.83	1.70	1.75	1.75	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
GA-SOIL-038	15337.641038	10	0.046	0.462163
SS008	26260.955921	4.75	0.079	0.375873
SS009	17580.645218	1.15	0.053	0.060921
SS016	21747.328047	17	0.066	1.114016
SS017	44798.375144	8.2	0.135	1.106911
SS018	26728.057074	2.7	0.081	0.217454
SS026	40627.011886	128.5	0.122	15.730931
SS027	41072.504516	13.5	0.124	1.670788
SS032	8279.919827	40.5	0.025	1.010456
SS033	34730.818998	56	0.105	5.860565
SS034	29977.861355	8.8	0.090	0.794913
SS046	10559.696663	14	0.032	0.445467
SS047	14165.812437	6.9	0.043	0.294528
	331,866.63	312.00	1.00	29.14

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	6.3077	5.7423	5.9538	5.9577	5.9904	0.2343	0.0391
Max	77.0923	71.6962	81.2308	80.8231	77.7106	4.4210	0.0569
Average	29.1884	29.3218	29.4430	29.3151	29.3171	0.1040	0.0035
Std Dev	11.2270	11.1977	11.5380	10.9834	11.2365	0.2284	0.0203
1%	8.8460	8.6962	8.8805	8.9882	8.8527	0.1207	0.0136
5%	12.3035	12.1610	12.0537	12.6648	12.2957	0.2665	0.0217
10%	15.1142	15.6035	15.3773	15.8835	15.4946	0.3274	0.0211
15%	17.5577	17.7302	17.7362	17.8412	17.7163	0.1174	0.0066
20%	19.3269	19.5585	19.4838	19.6277	19.4992	0.1290	0.0066
25%	20.9567	21.1404	20.9173	21.2683	21.0707	0.1637	0.0078
30%	22.3654	22.3962	22.3462	22.5296	22.4093	0.0828	0.0037
35%	23.9933	24.1088	24.0742	24.0987	24.0688	0.0524	0.0022
40%	25.4731	25.5931	25.6946	25.5700	25.5827	0.0909	0.0036
45%	26.8388	26.9329	27.1046	26.9577	26.9585	0.1100	0.0041
50%	28.2288	28.4423	28.4577	28.5327	28.4154	0.1305	0.0046
55%	29.6825	29.8654	29.8877	29.9744	29.8525	0.1227	0.0041
60%	30.8846	31.1808	31.1069	31.2808	31.1133	0.1683	0.0054
65%	32.4385	32.9192	32.7283	32.7373	32.7058	0.1988	0.0061
70%	34.3331	34.5692	34.7138	34.5627	34.5447	0.1574	0.0046
75%	36.3721	36.6279	36.5365	36.3625	36.4748	0.1296	0.0036
80%	38.7231	38.7354	38.7654	38.7854	38.7523	0.0283	0.0007
85%	41.0090	40.9275	41.3544	40.7962	41.0218	0.2385	0.0058
90%	44.7000	44.3638	44.8542	43.8088	44.4317	0.4630	0.0104
95%	49.3081	49.6137	49.8238	48.8542	49.4000	0.4210	0.0085
97%	52.4082	52.8964	53.5668	52.3261	52.7993	0.5702	0.0108
99%	58.4041	58.4785	61.4023	58.6761	59.2402	1.4459	0.0244
Kurtosis	0.04	-0.01	0.43	0.12	0.14	0.20	
Skewness	0.50	0.46	0.60	0.49	0.51	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
GA-SOIL-038	15337.641038	7	0.046	0.323514
SS008	26260.955921	4.8	0.079	0.379829
SS009	17580.645218	5.8	0.053	0.307255
SS016	21747.328047	18.5	0.066	1.212311
SS017	44798.375144	8.65	0.135	1.167656
SS018	26728.057074	5.3	0.081	0.426854
SS026	40627.011886	9.5	0.122	1.162987
SS027	41072.504516	21.5	0.124	2.660885
SS032	8279.919827	47.5	0.025	1.185103
SS033	34730.818998	3.95	0.105	0.413379
SS034	29977.861355	11.55	0.090	1.043324
SS046	10559.696663	11	0.032	0.350010
SS047	14165.812437	5.475	0.043	0.233702
	331,866.63	160.53	1.00	10.87

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	5.2365	5.4788	5.4019	5.6577	5.4438	0.1748	0.0321
Max	22.2269	22.4462	22.5423	21.1269	22.0856	0.6526	0.0295
Average	11.0353	11.0368	11.0614	11.0420	11.0439	0.0120	0.0011
Std Dev	2.2638	2.2782	2.2590	2.2418	2.2607	0.0150	0.0066
1%	6.8961	6.8269	6.9479	6.9710	6.9105	0.0639	0.0093
5%	7.8171	7.7739	7.8171	7.8288	7.8093	0.0242	0.0031
10%	8.3423	8.3188	8.4229	8.3885	8.3681	0.0466	0.0056
15%	8.7385	8.7516	8.7923	8.7865	8.7672	0.0263	0.0030
20%	9.0631	9.1038	9.1185	9.1231	9.1021	0.0273	0.0030
25%	9.3750	9.4106	9.4346	9.4572	9.4194	0.0352	0.0037
30%	9.6577	9.6956	9.7225	9.7154	9.6978	0.0291	0.0030
35%	9.9385	9.9756	10.0077	9.9974	9.9798	0.0306	0.0031
40%	10.2223	10.2338	10.2608	10.2638	10.2452	0.0204	0.0020
45%	10.5068	10.5000	10.5269	10.5021	10.5090	0.0123	0.0012
50%	10.7750	10.7788	10.8010	10.7673	10.7805	0.0144	0.0013
55%	11.0624	11.0806	11.1009	11.0308	11.0687	0.0297	0.0027
60%	11.3731	11.3442	11.3777	11.3373	11.3581	0.0203	0.0018
65%	11.6750	11.6462	11.6750	11.6526	11.6622	0.0150	0.0013
70%	12.0275	12.0063	12.0481	11.9813	12.0158	0.0286	0.0024
75%	12.4082	12.3716	12.4144	12.3851	12.3948	0.0200	0.0016
80%	12.8446	12.8023	12.8408	12.8312	12.8297	0.0191	0.0015
85%	13.4313	13.3800	13.3772	13.3371	13.3814	0.0386	0.0029
90%	14.1735	14.1388	14.0537	14.0500	14.1040	0.0619	0.0044
95%	15.1367	15.1944	15.1083	15.1309	15.1426	0.0367	0.0024
97%	15.8578	15.9580	15.8278	15.9502	15.8985	0.0655	0.0041
99%	17.0465	17.2693	17.4731	17.3040	17.2732	0.1754	0.0102
Kurtosis	0.35	0.60	0.79	0.57	0.58	0.18	
Skewness	0.61	0.66	0.69	0.67	0.66	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS008	26260.955921	5.9	0.079	0.466873
SS009	27942.575713	13	0.084	1.094577
SS016	21747.328047	5.2	0.066	0.340758
SS017	44798.375144	6.75	0.135	0.911176
SS018	31703.767621	8.7	0.096	0.831125
SS026	40627.011886	9.7	0.122	1.187471
SS027	41072.504516	9.4	0.124	1.163364
SS032	8279.919827	1190	0.025	29.689953
SS033	34730.818998	3.15	0.105	0.329657
SS034	29977.861355	7	0.090	0.632317
SS046	10559.696663	5.7	0.032	0.181369
SS047	14165.812437	5.325	0.043	0.227299
	331866.63	1269.83	1.00	37.06

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	4.9146	5.1354	5.0479	5.2375	5.0839	0.1369	0.0269
Max	401.9292	304.4937	304.0291	303.6083	328.5151	48.9441	0.1490
Average	37.5231	36.7632	36.6725	37.9682	37.2317	0.6217	0.0167
Std Dev	53.8169	53.5871	51.9740	53.4766	53.2136	0.8385	0.0158
1%	5.9082	5.9312	5.9437	5.9707	5.9385	0.0260	0.0044
5%	6.4188	6.3747	6.4291	6.4371	6.4149	0.0278	0.0043
10%	6.7104	6.6665	6.7019	6.7125	6.6978	0.0214	0.0032
15%	6.9021	6.8667	6.8813	6.9229	6.8932	0.0246	0.0036
20%	7.0683	7.0333	7.0479	7.0871	7.0592	0.0235	0.0033
25%	7.2266	7.1917	7.1813	7.2229	7.2056	0.0226	0.0031
30%	7.3458	7.3250	7.3160	7.3681	7.3387	0.0232	0.0032
35%	7.4701	7.4500	7.4368	7.4909	7.4620	0.0237	0.0032
40%	7.5938	7.5742	7.5708	7.6200	7.5897	0.0226	0.0030
45%	7.7292	7.6917	7.7042	7.7595	7.7211	0.0300	0.0039
50%	7.8687	7.8125	7.8333	7.8969	7.8529	0.0374	0.0048
55%	8.0208	7.9583	7.9687	8.0458	7.9984	0.0418	0.0052
60%	8.2021	8.1425	8.1333	8.2250	8.1757	0.0448	0.0055
65%	8.4167	8.3583	8.3549	8.4583	8.3971	0.0497	0.0059
70%	8.7756	8.6756	8.6917	8.8131	8.7390	0.0661	0.0076
75%	104.9734	104.7589	104.9651	105.1474	104.9612	0.1589	0.0015
80%	105.6608	105.5921	105.6167	105.6754	105.6362	0.0386	0.0004
85%	106.0444	105.9902	106.0423	106.0687	106.0364	0.0331	0.0003
90%	106.4771	106.4208	106.4546	106.5190	106.4679	0.0412	0.0004
95%	107.1859	107.0837	107.1088	107.1276	107.1265	0.0435	0.0004
97%	203.9521	204.0021	203.3271	204.0126	203.8235	0.3320	0.0016
99%	205.2147	205.1981	204.9375	205.2500	205.1501	0.1434	0.0007
Kurtosis	2.82	3.16	2.26	2.43	2.67	0.40	
Skewness	1.74	1.82	1.66	1.67	1.72	0.07	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS008	26260.955921	0.081	0.079	0.006410
SS009	27942.575713	0.0885	0.084	0.007452
SS016	21747.328047	0.195	0.066	0.012778
SS017	44798.375144	0.32	0.135	0.043197
SS018	31703.767621	0.265	0.096	0.025316
SS026	40627.011886	0.066	0.122	0.008080
SS027	41072.504516	0.41	0.124	0.050742
SS032	8279.919827	1.15	0.025	0.028692
SS033	34730.818998	0.0315	0.105	0.003297
SS034	29977.861355	0.69	0.090	0.062328
SS046	10559.696663	0.515	0.032	0.016387
SS047	14165.812437	0.08075	0.043	0.003447
	331866.63	3.89	1.00	0.27

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0677	0.0954	0.0857	0.0783	0.0818	0.0117	0.1431
Max	0.5976	0.5947	0.5859	0.5597	0.5845	0.0172	0.0295
Average	0.2713	0.2716	0.2703	0.2722	0.2713	0.0008	0.0029
Std Dev	0.0693	0.0717	0.0708	0.0702	0.0705	0.0010	0.0143
1%	0.1309	0.1275	0.1351	0.1348	0.1321	0.0036	0.0274
5%	0.1650	0.1656	0.1642	0.1651	0.1650	0.0006	0.0037
10%	0.1865	0.1860	0.1835	0.1870	0.1858	0.0016	0.0084
15%	0.1999	0.1998	0.1964	0.2007	0.1992	0.0019	0.0095
20%	0.2122	0.2112	0.2086	0.2116	0.2109	0.0016	0.0075
25%	0.2238	0.2208	0.2204	0.2216	0.2216	0.0015	0.0067
30%	0.2325	0.2302	0.2298	0.2319	0.2311	0.0013	0.0055
35%	0.2412	0.2387	0.2389	0.2412	0.2400	0.0014	0.0057
40%	0.2498	0.2475	0.2477	0.2506	0.2489	0.0016	0.0062
45%	0.2575	0.2563	0.2564	0.2587	0.2572	0.0011	0.0044
50%	0.2661	0.2651	0.2650	0.2671	0.2658	0.0010	0.0038
55%	0.2751	0.2739	0.2737	0.2758	0.2746	0.0010	0.0037
60%	0.2848	0.2834	0.2822	0.2853	0.2839	0.0014	0.0050
65%	0.2933	0.2925	0.2925	0.2948	0.2933	0.0011	0.0038
70%	0.3025	0.3034	0.3023	0.3050	0.3033	0.0012	0.0040
75%	0.3140	0.3152	0.3129	0.3164	0.3146	0.0015	0.0047
80%	0.3275	0.3291	0.3259	0.3287	0.3278	0.0015	0.0044
85%	0.3424	0.3459	0.3436	0.3443	0.3441	0.0014	0.0042
90%	0.3636	0.3678	0.3652	0.3656	0.3656	0.0017	0.0047
95%	0.3920	0.3984	0.3968	0.3968	0.3960	0.0028	0.0070
97%	0.4129	0.4214	0.4209	0.4171	0.4181	0.0039	0.0094
99%	0.4542	0.4696	0.4565	0.4536	0.4585	0.0075	0.0164
Kurtosis	0.35	0.42	0.31	0.15	0.31	0.11	
Skewness	0.43	0.53	0.49	0.41	0.47	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
GA-SOIL-038	15337.641038	0.0484	0.046	0.002237
PL	7722.711572	7.2914	0.023	0.169675
SS008	26260.955921	3.1026	0.079	0.245512
SS009	17580.645218	0.195065	0.053	0.010334
SS016	21747.328047	3.54995	0.066	0.232629
SS017	44798.375144	2.29015	0.135	0.309145
SS018	26728.057074	2.9926	0.081	0.241020
SS026	40627.011886	6.00902	0.122	0.735622
SS027	41072.504516	2.9708	0.124	0.367672
SS032	8279.919827	3.0823	0.025	0.076902
SS033	34730.818998	0.003103628	0.105	0.000325
SS034	29187.933499	1.4952	0.088	0.131504
SS046	7728.226877	3.49255	0.023	0.081332
SS047	10064.498460	0.255035	0.030	0.007734
	331866.63	36.78	1.00	2.61

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.8380	1.0254	0.9263	0.6889	0.8696	0.1428	0.1642
Max	5.0000	4.7154	4.4771	4.3915	4.6460	0.2729	0.0587
Average	2.6537	2.6369	2.6416	2.6519	2.6460	0.0081	0.0031
Std Dev	0.5164	0.5080	0.5041	0.5146	0.5108	0.0057	0.0112
1%	1.5021	1.5262	1.5175	1.5195	1.5163	0.0102	0.0067
5%	1.8318	1.8146	1.8371	1.8451	1.8321	0.0129	0.0071
10%	2.0105	1.9829	2.0069	1.9974	1.9994	0.0123	0.0062
15%	2.1257	2.1120	2.1131	2.1169	2.1169	0.0062	0.0029
20%	2.2133	2.2096	2.2156	2.2148	2.2133	0.0027	0.0012
25%	2.2901	2.2905	2.2967	2.2950	2.2931	0.0033	0.0014
30%	2.3699	2.3665	2.3677	2.3675	2.3679	0.0014	0.0006
35%	2.4461	2.4370	2.4404	2.4411	2.4412	0.0038	0.0015
40%	2.5169	2.4996	2.5001	2.5114	2.5070	0.0086	0.0034
45%	2.5825	2.5642	2.5616	2.5740	2.5706	0.0096	0.0037
50%	2.6438	2.6265	2.6299	2.6383	2.6346	0.0079	0.0030
55%	2.7060	2.6920	2.6932	2.7017	2.6982	0.0068	0.0025
60%	2.7718	2.7476	2.7531	2.7744	2.7617	0.0134	0.0048
65%	2.8443	2.8141	2.8271	2.8337	2.8298	0.0127	0.0045
70%	2.9168	2.8884	2.8978	2.9126	2.9039	0.0132	0.0045
75%	3.0020	2.9635	2.9826	2.9990	2.9868	0.0177	0.0059
80%	3.0857	3.0582	3.0616	3.0815	3.0718	0.0138	0.0045
85%	3.1928	3.1655	3.1623	3.1831	3.1759	0.0145	0.0046
90%	3.3119	3.3057	3.2943	3.3171	3.3073	0.0098	0.0030
95%	3.5247	3.4957	3.4912	3.5200	3.5079	0.0169	0.0048
97%	3.6666	3.6306	3.6285	3.6590	3.6462	0.0195	0.0053
99%	3.8868	3.8345	3.8742	3.8913	3.8717	0.0258	0.0067
Kurtosis	0.05	0.03	0.01	-0.03	0.02	0.03	
Skewness	0.14	0.16	0.14	0.14	0.15	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS008	26260.955921	0.181	0.079	0.014323
SS009	27942.575713	0.009	0.084	0.000758
SS016	21747.328047	0.13	0.066	0.008519
SS017	44798.375144	0.195	0.135	0.026323
SS018	31703.767621	0.345	0.096	0.032958
SS026	40627.011886	0.476	0.122	0.058272
SS027	41072.504516	0.635	0.124	0.078589
SS032	8279.919827	0.315	0.025	0.007859
SS033	34730.818998	0.00875	0.105	0.000916
SS034	29977.861355	0.175	0.090	0.015808
SS046	10559.696663	0.29	0.032	0.009228
SS047	14165.812437	0.03125	0.043	0.001334
	331866.63	2.79	1.00	0.25

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0643	0.0639	0.0692	0.0688	0.0665	0.0029	0.0429
Max	0.4559	0.4936	0.4658	0.5204	0.4839	0.0291	0.0601
Average	0.2575	0.2557	0.2571	0.2563	0.2567	0.0008	0.0032
Std Dev	0.0580	0.0581	0.0580	0.0592	0.0583	0.0006	0.0102
1%	0.1298	0.1284	0.1297	0.1291	0.1292	0.0006	0.0050
5%	0.1665	0.1653	0.1666	0.1621	0.1651	0.0021	0.0128
10%	0.1843	0.1835	0.1837	0.1806	0.1830	0.0016	0.0090
15%	0.1977	0.1966	0.1971	0.1945	0.1965	0.0014	0.0070
20%	0.2072	0.2056	0.2079	0.2050	0.2064	0.0014	0.0065
25%	0.2170	0.2152	0.2169	0.2140	0.2158	0.0014	0.0067
30%	0.2255	0.2235	0.2255	0.2239	0.2246	0.0010	0.0046
35%	0.2343	0.2310	0.2337	0.2318	0.2327	0.0016	0.0068
40%	0.2404	0.2381	0.2403	0.2392	0.2395	0.0011	0.0045
45%	0.2487	0.2456	0.2482	0.2473	0.2474	0.0014	0.0055
50%	0.2555	0.2527	0.2553	0.2546	0.2545	0.0013	0.0050
55%	0.2632	0.2603	0.2626	0.2620	0.2620	0.0012	0.0048
60%	0.2716	0.2675	0.2693	0.2700	0.2696	0.0017	0.0063
65%	0.2788	0.2756	0.2770	0.2779	0.2773	0.0014	0.0050
70%	0.2875	0.2844	0.2861	0.2865	0.2861	0.0013	0.0046
75%	0.2960	0.2935	0.2954	0.2973	0.2955	0.0016	0.0054
80%	0.3068	0.3047	0.3044	0.3065	0.3056	0.0012	0.0041
85%	0.3168	0.3172	0.3163	0.3180	0.3171	0.0007	0.0023
90%	0.3334	0.3333	0.3333	0.3341	0.3335	0.0004	0.0012
95%	0.3550	0.3562	0.3567	0.3568	0.3562	0.0008	0.0023
97%	0.3701	0.3683	0.3743	0.3698	0.3706	0.0026	0.0070
99%	0.4014	0.3976	0.4016	0.3969	0.3994	0.0025	0.0062
Kurtosis	-0.06	-0.01	0.03	-0.10	-0.04	0.05	
Skewness	0.16	0.23	0.21	0.16	0.19	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
PL	7722.711572	2.05	0.023	0.047705
SS008	26260.955921	0.0315	0.079	0.002493
SS009	27942.575713	0.002775	0.084	0.000234
SS016	21747.328047	0.064	0.066	0.004194
SS017	44798.375144	0.0485	0.135	0.006547
SS018	31703.767621	0.0315	0.096	0.003009
SS026	40627.011886	0.026	0.122	0.003183
SS027	41072.504516	0.046	0.124	0.005693
SS032	8279.919827	0.0565	0.025	0.001410
SS033	34730.818998	0.0002725	0.105	0.000029
SS034	29187.933499	0.0305	0.088	0.002682
SS046	7728.226877	0.002925	0.023	0.000068
SS047	10064.498460	0.02	0.030	0.000607
	331,866.63	2.41	1.00	0.08

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0075	0.0108	0.0099	0.0129	0.0103	0.0023	0.2210
Max	0.6508	0.6500	0.6547	0.6597	0.6538	0.0044	0.0068
Average	0.0806	0.0782	0.0772	0.0788	0.0787	0.0014	0.0184
Std Dev	0.0867	0.0840	0.0839	0.0852	0.0849	0.0013	0.0155
1%	0.0192	0.0193	0.0192	0.0193	0.0193	0.0001	0.0042
5%	0.0232	0.0232	0.0228	0.0234	0.0232	0.0002	0.0101
10%	0.0254	0.0253	0.0250	0.0255	0.0253	0.0002	0.0085
15%	0.0269	0.0268	0.0266	0.0269	0.0268	0.0001	0.0054
20%	0.0282	0.0280	0.0278	0.0281	0.0280	0.0002	0.0060
25%	0.0292	0.0290	0.0288	0.0291	0.0290	0.0002	0.0053
30%	0.0301	0.0299	0.0298	0.0299	0.0300	0.0001	0.0043
35%	0.0310	0.0309	0.0307	0.0308	0.0308	0.0001	0.0047
40%	0.0319	0.0318	0.0315	0.0318	0.0318	0.0002	0.0054
45%	0.0328	0.0327	0.0325	0.0327	0.0327	0.0001	0.0038
50%	0.0339	0.0338	0.0336	0.0338	0.0338	0.0001	0.0035
55%	0.0350	0.0347	0.0346	0.0349	0.0348	0.0002	0.0054
60%	0.0364	0.0359	0.0358	0.0360	0.0360	0.0002	0.0068
65%	0.0381	0.0374	0.0373	0.0376	0.0376	0.0004	0.0101
70%	0.0409	0.0398	0.0393	0.0400	0.0400	0.0007	0.0174
75%	0.1802	0.1790	0.1775	0.1790	0.1789	0.0011	0.0061
80%	0.1840	0.1838	0.1830	0.1837	0.1836	0.0005	0.0025
85%	0.1869	0.1866	0.1863	0.1863	0.1865	0.0003	0.0014
90%	0.1896	0.1894	0.1894	0.1894	0.1894	0.0001	0.0007
95%	0.1947	0.1939	0.1941	0.1940	0.1942	0.0003	0.0018
97%	0.3385	0.3362	0.3368	0.3370	0.3371	0.0010	0.0029
99%	0.3463	0.3447	0.3461	0.3458	0.3457	0.0007	0.0021
Kurtosis	2.80	2.85	2.88	3.13	2.92	0.15	
Skewness	1.71	1.71	1.75	1.76	1.73	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
PL	7722.711572	10.5	0.023	0.244341
SS008	26260.955921	0.012	0.079	0.000950
SS009	27942.575713	0.0085	0.084	0.000716
SS016	21747.328047	0.053	0.066	0.003473
SS017	44798.375144	0.0365	0.135	0.004927
SS018	31703.767621	0.013	0.096	0.001242
SS026	40627.011886	0.0535	0.122	0.006549
SS027	41072.504516	0.02325	0.124	0.002877
SS032	8279.919827	0.041	0.025	0.001023
SS033	34730.818998	0.0008	0.105	0.000084
SS034	29187.933499	0.01625	0.088	0.001429
SS046	7728.226877	0.00875	0.023	0.000204
SS047	10064.498460	0.0064	0.030	0.000194
	331,866.63	10.77	1.00	0.27

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0102	0.0099	0.0075	0.0088	0.0091	0.0012	0.1352
Max	3.2465	3.2448	2.4543	3.2466	3.0480	0.3958	0.1299
Average	0.2846	0.2715	0.2845	0.2660	0.2766	0.0094	0.0340
Std Dev	0.4500	0.4383	0.4535	0.4401	0.4455	0.0074	0.0167
1%	0.0143	0.0143	0.0142	0.0141	0.0142	0.0001	0.0074
5%	0.0174	0.0175	0.0173	0.0173	0.0174	0.0001	0.0059
10%	0.0192	0.0192	0.0191	0.0193	0.0192	0.0001	0.0037
15%	0.0205	0.0205	0.0204	0.0205	0.0205	0.0001	0.0026
20%	0.0216	0.0216	0.0215	0.0214	0.0215	0.0001	0.0036
25%	0.0226	0.0225	0.0225	0.0224	0.0225	0.0001	0.0044
30%	0.0234	0.0233	0.0233	0.0232	0.0233	0.0001	0.0035
35%	0.0243	0.0242	0.0243	0.0240	0.0242	0.0001	0.0056
40%	0.0251	0.0251	0.0252	0.0249	0.0251	0.0002	0.0062
45%	0.0261	0.0260	0.0261	0.0258	0.0260	0.0001	0.0053
50%	0.0270	0.0270	0.0271	0.0267	0.0269	0.0002	0.0056
55%	0.0281	0.0279	0.0281	0.0279	0.0280	0.0001	0.0044
60%	0.0295	0.0291	0.0293	0.0290	0.0292	0.0002	0.0080
65%	0.0313	0.0307	0.0309	0.0303	0.0308	0.0004	0.0138
70%	0.0345	0.0335	0.0340	0.0322	0.0336	0.0010	0.0289
75%	0.8253	0.8234	0.8250	0.8221	0.8240	0.0015	0.0018
80%	0.8281	0.8276	0.8283	0.8273	0.8278	0.0005	0.0006
85%	0.8307	0.8305	0.8308	0.8301	0.8305	0.0003	0.0004
90%	0.8336	0.8334	0.8335	0.8331	0.8334	0.0002	0.0003
95%	0.8390	0.8375	0.8389	0.8378	0.8383	0.0008	0.0009
97%	1.6337	1.6314	1.6342	1.6328	1.6330	0.0012	0.0007
99%	1.6402	1.6403	1.6403	1.6393	1.6400	0.0005	0.0003
Kurtosis	2.42	2.82	2.33	3.02	2.65	0.33	
Skewness	1.65	1.72	1.66	1.79	1.71	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
GA-SOIL-038	15337.641038	0.006	0.046	0.000277
PL	7722.711572	2.05	0.023	0.047705
SS008	26260.955921	0.53	0.079	0.041939
SS009	17580.645218	0.19	0.053	0.010065
SS016	21747.328047	0.685	0.066	0.044888
SS017	44798.375144	1.06	0.135	0.143088
SS018	26728.057074	0.49	0.081	0.039464
SS026	40627.011886	1.525	0.122	0.186690
SS027	41072.504516	1.15	0.124	0.142326
SS032	8279.919827	1.85	0.025	0.046157
SS033	34730.818998	0.0003725	0.105	0.000039
SS034	29187.933499	0.83	0.088	0.072999
SS046	7728.226877	1.185	0.023	0.027595
SS047	10064.498460	0.3025	0.030	0.009174
	331866.63	11.85	1.00	0.81

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2438	0.3289	0.3005	0.3098	0.2958	0.0366	0.1237
Max	1.4868	1.3139	1.4559	1.3761	1.4082	0.0783	0.0556
Average	0.8298	0.8275	0.8312	0.8294	0.8295	0.0015	0.0018
Std Dev	0.1440	0.1434	0.1444	0.1434	0.1438	0.0005	0.0035
1%	0.5077	0.4984	0.4917	0.4912	0.4972	0.0077	0.0154
5%	0.5909	0.5899	0.5959	0.5886	0.5913	0.0032	0.0054
10%	0.6451	0.6397	0.6458	0.6462	0.6442	0.0030	0.0047
15%	0.6797	0.6784	0.6825	0.6828	0.6808	0.0021	0.0031
20%	0.7083	0.7056	0.7083	0.7119	0.7085	0.0026	0.0036
25%	0.7326	0.7308	0.7321	0.7354	0.7327	0.0019	0.0026
30%	0.7542	0.7520	0.7544	0.7549	0.7539	0.0013	0.0017
35%	0.7744	0.7694	0.7763	0.7737	0.7735	0.0029	0.0037
40%	0.7930	0.7890	0.7969	0.7921	0.7927	0.0032	0.0041
45%	0.8109	0.8099	0.8151	0.8110	0.8117	0.0023	0.0028
50%	0.8298	0.8287	0.8326	0.8317	0.8307	0.0018	0.0021
55%	0.8466	0.8481	0.8501	0.8487	0.8484	0.0014	0.0017
60%	0.8672	0.8658	0.8673	0.8694	0.8674	0.0015	0.0017
65%	0.8866	0.8854	0.8865	0.8874	0.8865	0.0008	0.0009
70%	0.9072	0.9047	0.9081	0.9058	0.9064	0.0015	0.0017
75%	0.9262	0.9256	0.9287	0.9238	0.9261	0.0020	0.0022
80%	0.9515	0.9490	0.9531	0.9473	0.9502	0.0026	0.0027
85%	0.9784	0.9766	0.9793	0.9750	0.9773	0.0019	0.0020
90%	1.0168	1.0084	1.0119	1.0122	1.0123	0.0034	0.0034
95%	1.0661	1.0619	1.0676	1.0645	1.0650	0.0024	0.0023
97%	1.0996	1.1000	1.1036	1.0993	1.1007	0.0020	0.0018
99%	1.1700	1.1564	1.1686	1.1631	1.1645	0.0062	0.0053
Kurtosis	0.02	-0.11	0.04	0.03	-0.01	0.07	
Skewness	0.03	0.00	0.00	-0.03	0.00	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Northwest Grassed Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
GA-Soil-033	86155.261212	0.00057046	0.260	0.000148
GA-SOIL-038	70907.954302	2.79429E-05	0.214	0.000006
PL	23229.437767	0.000574223	0.070	0.000040
SS007	12089.974387	0.00032301	0.036	0.000012
SS026	124683.277028	0.001290781	0.376	0.000485
SS046	14800.723480	0.0009858	0.045	0.000044
	331,866.63	0.00	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
Max	0.0013	0.0013	0.0013	0.0013	0.0013	0.0000	0.0000
Average	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0015
Std Dev	0.0002	0.0002	0.0002	0.0002	0.0002	0.0000	0.0088
1%	0.0003	0.0003	0.0003	0.0003	0.0003	0.0000	0.0708
5%	0.0004	0.0004	0.0004	0.0004	0.0004	0.0000	0.0090
10%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0103
15%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0006
20%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0072
25%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0069
30%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0008
35%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0000
40%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0066
45%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0088
50%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0000
55%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0000
60%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0144
65%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0004
70%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0000
75%	0.0008	0.0008	0.0008	0.0009	0.0008	0.0000	0.0106
80%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0000
85%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0000
90%	0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0000
95%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0003
97%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0000
99%	0.0012	0.0012	0.0012	0.0012	0.0012	0.0000	0.0000
Kurtosis	-0.22	-0.29	-0.33	-0.27	-0.28	0.05	
Skewness	-0.03	-0.06	-0.02	-0.08	-0.05	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS001	25418.945292	0.415	0.033	0.013776
SS002	35691.377965	0.38	0.047	0.017712
SS003	37428.094614	0.2	0.049	0.009776
SS004	32569.593128	0.215	0.043	0.009145
SS005	7657.899600	0.1775	0.010	0.001775
SS010	44987.144442	2.525	0.059	0.148348
SS011	44985.824618	1.28	0.059	0.075200
SS012	44989.420873	0.995	0.059	0.058461
SS013	31893.766123	0.685	0.042	0.028532
SS019	30238.616681	0.175	0.039	0.006911
SS020	41769.977557	0.99	0.055	0.054005
SS021	41915.666234	21	0.055	1.149550
SS022	54253.028763	0.2725	0.071	0.019307
SS028	24594.542762	0.1725	0.032	0.005541
SS029	33392.102982	0.1775	0.044	0.007741
SS035	17345.287243	1.14	0.023	0.025824
SS036	25219.787268	3.35	0.033	0.110336
SS037	16024.975778	1.65	0.021	0.034531
SS038	19993.741147	4.65	0.026	0.121417
SS039	18698.960450	0.885	0.024	0.021612
SS040	39848.184658	5.9	0.052	0.307038
SS048	5322.769935	0.5525	0.007	0.003841
SS095	30987.719361	175	0.040	7.082063
SS096	34257.364848	6.6	0.045	0.295277
SS097	26231.428918	0.1825	0.034	0.006252
	765716.22	229.57	1.00	9.61

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.5895	0.5981	0.5206	0.5875	0.5739	0.0358	0.0625
Max	46.3281	45.1805	44.9449	45.2996	45.4383	0.6113	0.0135
Average	9.8813	9.8171	9.8009	9.9310	9.8576	0.0600	0.0061
Std Dev	7.0438	6.8547	6.9418	7.1389	6.9948	0.1233	0.0176
1%	1.0358	1.0964	1.0500	1.0917	1.0685	0.0302	0.0282
5%	1.5640	1.6068	1.6019	1.6113	1.5960	0.0217	0.0136
10%	1.9749	2.0834	2.0531	2.0732	2.0462	0.0491	0.0240
15%	2.3330	2.4243	2.3477	2.4001	2.3763	0.0431	0.0181
20%	2.7634	2.7854	2.6983	2.7370	2.7460	0.0375	0.0137
25%	3.1640	3.1786	3.0913	3.1142	3.1370	0.0411	0.0131
30%	3.8703	3.7957	3.6928	3.6957	3.7636	0.0857	0.0228
35%	8.0239	7.8765	5.8458	7.8900	7.4090	1.0443	0.1409
40%	8.5073	8.5585	8.4510	8.5058	8.5056	0.0439	0.0052
45%	8.9081	8.9267	8.8763	8.9078	8.9047	0.0209	0.0023
50%	9.1970	9.2361	9.1962	9.2258	9.2138	0.0203	0.0022
55%	9.5368	9.5663	9.5592	9.5539	9.5541	0.0126	0.0013
60%	9.8716	9.9161	9.9585	9.9013	9.9119	0.0361	0.0036
65%	10.3553	10.4021	10.4059	10.4133	10.3941	0.0263	0.0025
70%	11.1648	11.3979	11.3886	11.4546	11.3514	0.1278	0.0113
75%	15.5085	15.4680	15.5380	15.5614	15.5190	0.0403	0.0026
80%	16.1748	16.1279	16.1149	16.2075	16.1563	0.0428	0.0026
85%	16.8243	16.6915	16.7689	16.8413	16.7815	0.0675	0.0040
90%	18.0105	17.7259	17.7989	18.1589	17.9236	0.1979	0.0110
95%	23.3207	22.9942	23.3135	23.3440	23.2431	0.1664	0.0072
97%	24.3058	23.9393	24.2232	24.4003	24.2172	0.1989	0.0082
99%	30.3096	30.1614	30.1090	30.8365	30.3541	0.3326	0.0110
Kurtosis	1.03	0.51	0.42	0.85	0.70	0.29	
Skewness	0.95	0.83	0.83	0.94	0.89	0.07	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
GA-SOIL-034	15096.001089	10	0.020	0.197149
GA-SOIL-035	16606.965160	30.3	0.022	0.657151
GA-SOIL-036	23573.808900	10	0.031	0.307866
SS001	21718.616564	59.5	0.028	1.687646
SS002	21288.424127	5.95	0.028	0.165422
SS003	30964.156342	14	0.040	0.566134
SS004	12622.572702	5.375	0.016	0.088605
SS005	7657.899600	8.5	0.010	0.085008
SS010	41313.111900	9.65	0.054	0.520652
SS011	40869.403257	9.5	0.053	0.507054
SS012	42241.785850	37	0.055	2.041156
SS013	31724.568272	52	0.041	2.154424
SS019	30238.616681	4.875	0.039	0.192517
SS020	41769.977557	60	0.055	3.273012
SS021	41915.666234	1050	0.055	57.477494
SS022	54197.781674	2.7	0.071	0.191107
SS028	24594.542762	2.875	0.032	0.092344
SS029	33392.102982	3.25	0.044	0.141729
SS035	17345.287245	7.25	0.023	0.164230
SS036	25219.787270	109.25	0.033	3.598281
SS037	16024.975775	140	0.021	2.929932
SS038	19993.741147	265	0.026	6.919458
SS039	18698.960451	45	0.024	1.098910
SS040	39848.184659	275	0.052	14.311112
SS048	5322.769937	29.725	0.007	0.206629
SS095	30987.719361	2160	0.040	87.412898
SS096	34257.364848	295	0.045	13.198000
SS097	26231.428918	2.3	0.034	0.078792
	765,716.22	4,704.00	1.00	200.26

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	19.7554	12.8455	14.6446	20.5920	16.9594	3.7989	0.2240
Max	608.2001	593.8822	596.3723	712.2233	627.6694	56.7142	0.0904
Average	202.2724	201.0805	200.7267	203.9181	201.9994	1.4399	0.0071
Std Dev	91.0770	89.5502	88.7482	91.8345	90.3025	1.4058	0.0156
1%	40.7764	40.2566	43.8717	44.3537	42.3146	2.0963	0.0495
5%	69.8625	68.8538	70.9203	72.2853	70.4805	1.4696	0.0209
10%	91.4282	91.1729	92.1244	93.8435	92.1422	1.2033	0.0131
15%	109.6025	107.7620	109.6413	109.2946	109.0751	0.8890	0.0082
20%	123.9241	122.6075	123.3025	121.7227	122.8892	0.9455	0.0077
25%	136.0828	134.4027	134.8156	133.7029	134.7510	0.9996	0.0074
30%	148.3603	146.3298	147.1656	145.8446	146.9251	1.1014	0.0075
35%	158.1798	157.3520	159.4843	157.9679	158.2460	0.8971	0.0057
40%	168.6270	168.7495	169.8652	170.0179	169.3149	0.7280	0.0043
45%	179.6148	180.4413	180.0911	184.1646	181.0779	2.0855	0.0115
50%	191.7995	191.5634	191.0165	196.0259	192.6013	2.3065	0.0120
55%	202.7681	203.2500	202.3717	206.1922	203.6455	1.7354	0.0085
60%	215.6619	216.3037	213.8987	218.2407	216.0263	1.7926	0.0083
65%	229.5640	229.9451	228.1745	231.4045	229.7720	1.3279	0.0058
70%	242.0397	244.0426	240.9447	244.2886	242.8289	1.6101	0.0066
75%	258.1692	260.3835	255.2331	262.0082	258.9485	2.9345	0.0113
80%	275.6577	275.8816	272.9096	280.2216	276.1676	3.0216	0.0109
85%	298.8391	294.8767	294.7142	300.7282	297.2896	2.9821	0.0100
90%	326.9711	322.7964	319.9984	328.8105	324.6441	3.9904	0.0123
95%	366.4695	360.5737	362.0967	371.3062	365.1115	4.8270	0.0132
97%	397.9923	386.9755	387.9191	398.0277	392.7287	6.1105	0.0156
99%	451.3060	441.9635	440.4240	447.7722	445.3664	5.0686	0.0114
Kurtosis	0.30	0.09	0.28	0.42	0.27	0.14	
Skewness	0.62	0.53	0.60	0.63	0.60	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
GA-SOIL-034	15096.001089	1.2	0.020	0.023658
GA-SOIL-035	16606.965160	22.7	0.022	0.492321
GA-SOIL-036	23573.808900	11.6	0.031	0.357125
SS001	21718.616564	4.6	0.028	0.130473
SS002	21288.424127	6	0.028	0.166812
SS003	30964.156342	11.5	0.040	0.465039
SS004	12622.572702	15.25	0.016	0.251391
SS005	7657.899600	11.5	0.010	0.115011
SS010	41313.111900	12.05	0.054	0.650140
SS011	40869.403257	19	0.053	1.014108
SS012	42241.785850	29.75	0.055	1.641200
SS013	31724.568272	68.5	0.041	2.838040
SS019	30238.616681	9.8	0.039	0.387008
SS020	41769.977557	136	0.055	7.418828
SS021	41915.666234	1800	0.055	98.532847
SS022	54197.781674	6.15	0.071	0.435300
SS028	24594.542762	4.825	0.032	0.154977
SS029	33392.102982	8.75	0.044	0.381579
SS035	17345.287245	13.2	0.023	0.299011
SS036	25219.787270	110	0.033	3.622983
SS037	16024.975775	94.5	0.021	1.977704
SS038	19993.741147	487.5	0.026	12.729192
SS039	18698.960451	79.5	0.024	1.941408
SS040	39848.184659	455	0.052	23.678386
SS048	5322.769937	36.25	0.007	0.251987
SS095	30987.719361	2700	0.040	109.266122
SS096	34257.364848	395	0.045	17.671898
SS097	26231.428918	4.45	0.034	0.152445
	765,716.22	6,554.58	1.00	287.05

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	23.0152	20.3000	22.3536	19.1955	21.2161	1.7751	0.0837
Max	878.0536	860.7339	799.0732	840.8741	844.6837	33.9902	0.0402
Average	289.4514	289.1132	290.6705	289.7856	289.7552	0.6691	0.0023
Std Dev	123.5242	124.1603	124.0834	125.1882	124.2390	0.6934	0.0056
1%	65.3330	58.9633	61.6809	56.2674	60.5612	3.8736	0.0640
5%	104.9406	107.0324	107.2644	100.9450	105.0456	2.9267	0.0279
10%	140.5001	139.5562	136.9446	136.5583	138.3898	1.9371	0.0140
15%	161.7596	159.6544	160.0719	159.0544	160.1351	1.1607	0.0072
20%	182.3236	179.2466	181.0555	179.4963	180.5305	1.4386	0.0080
25%	200.2938	196.4884	199.6594	198.9755	198.8542	1.6666	0.0084
30%	216.8739	212.8965	217.9035	216.3213	215.9988	2.1697	0.0100
35%	232.0563	229.7080	233.5419	233.9303	232.3091	1.9129	0.0082
40%	247.6037	245.9046	250.0361	250.1418	248.4216	2.0469	0.0082
45%	260.9352	260.9791	265.8352	264.5870	263.0841	2.5084	0.0095
50%	275.5478	278.0786	280.4924	280.2348	278.5884	2.2979	0.0082
55%	292.0659	294.9425	296.1801	295.5423	294.6827	1.8163	0.0062
60%	308.1464	310.7628	312.0025	310.6632	310.3937	1.6173	0.0052
65%	327.1350	329.1037	328.5642	328.1534	328.2391	0.8326	0.0025
70%	346.2291	347.0846	346.6313	346.2962	346.5603	0.3913	0.0011
75%	366.6764	369.4616	367.8063	368.0534	367.9994	1.1444	0.0031
80%	390.6277	393.0052	393.0486	391.4031	392.0211	1.2038	0.0031
85%	421.5878	420.7971	420.8383	418.1587	420.3455	1.5025	0.0036
90%	455.7325	454.1325	457.2993	452.9326	455.0242	1.9016	0.0042
95%	509.9796	508.5031	511.9966	516.3781	511.7143	3.4231	0.0067
97%	549.7083	547.3590	547.4133	550.2584	548.6847	1.5164	0.0028
99%	628.0824	614.1590	628.2183	632.1977	625.6644	7.9042	0.0126
Kurtosis	0.28	0.21	0.14	0.26	0.22	0.06	
Skewness	0.55	0.53	0.50	0.52	0.53	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS001	25418.945292	23.5	0.033	0.780113
SS002	35691.377965	24.25	0.047	1.130335
SS003	37428.094614	9.95	0.049	0.486355
SS004	32569.593128	13.75	0.043	0.584854
SS005	7657.899600	25.5	0.010	0.255025
SS010	44987.144442	114	0.059	6.697696
SS011	44985.824618	77	0.059	4.523750
SS012	44989.420873	34.25	0.059	2.012348
SS013	31893.766123	19.5	0.042	0.812218
SS019	30238.616681	45.25	0.039	1.786951
SS020	41769.977557	16.5	0.055	0.900078
SS021	41915.666234	81	0.055	4.433978
SS022	54253.028763	11.5	0.071	0.814806
SS028	24594.542762	5.85	0.032	0.187900
SS029	33392.102982	11.45	0.044	0.499323
SS035	17345.287243	160	0.023	3.624379
SS036	25219.787268	15.75	0.033	0.518745
SS037	16024.975778	232	0.021	4.855316
SS038	19993.741147	26	0.026	0.678890
SS039	18698.960450	17.925	0.024	0.437732
SS040	39848.184658	250	0.052	13.010102
SS048	5322.769935	9.775	0.007	0.067950
SS095	30987.719361	36.1	0.040	1.460929
SS096	34257.364848	47.5	0.045	2.125102
SS097	26231.428918	102	0.034	3.494252
	765716.22	1410.30	1.00	56.18

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	19.6740	20.4830	21.5710	21.3750	20.7757	0.8739	0.0421
Max	114.2320	111.0790	107.3200	105.6370	109.5670	3.8532	0.0352
Average	54.6727	55.0096	54.6484	54.9736	54.8261	0.1919	0.0035
Std Dev	12.6155	12.7399	12.5455	12.5333	12.6085	0.0947	0.0075
1%	29.5418	30.3867	30.0390	30.0049	29.9931	0.3468	0.0116
5%	35.3435	35.9647	35.6938	35.9745	35.7441	0.2971	0.0083
10%	39.1841	39.3798	39.1870	39.3065	39.2644	0.0958	0.0024
15%	41.5463	41.8070	41.7227	41.8087	41.7212	0.1233	0.0030
20%	43.6080	43.8564	43.8164	44.1462	43.8567	0.2216	0.0051
25%	45.6225	45.7513	45.5547	46.1638	45.7731	0.2729	0.0060
30%	47.4088	47.5560	47.2452	47.7007	47.4777	0.1955	0.0041
35%	49.0973	49.2849	48.8348	49.4853	49.1756	0.2770	0.0056
40%	50.6864	50.9160	50.5832	50.8922	50.7694	0.1614	0.0032
45%	52.3348	52.4644	52.1913	52.4400	52.3576	0.1243	0.0024
50%	53.8025	53.9190	53.6655	54.1395	53.8816	0.2007	0.0037
55%	55.3785	55.7551	55.1218	55.7609	55.5041	0.3114	0.0056
60%	57.1784	57.4896	57.0176	57.3536	57.2598	0.2057	0.0036
65%	58.9770	59.2592	58.8364	59.0257	59.0246	0.1758	0.0030
70%	60.7882	61.2888	60.8430	60.9116	60.9579	0.2263	0.0037
75%	62.8723	63.3170	62.8207	62.9830	62.9982	0.2230	0.0035
80%	65.1186	65.5512	65.1508	65.3656	65.2965	0.2021	0.0031
85%	67.7115	68.2223	67.8981	68.1471	67.9947	0.2342	0.0034
90%	71.3360	71.5924	71.4678	71.7320	71.5320	0.1695	0.0024
95%	76.6243	77.3466	76.8349	77.2793	77.0213	0.3487	0.0045
97%	80.0600	81.0316	80.4493	80.0949	80.4090	0.4508	0.0056
99%	87.1971	88.4435	85.9180	87.3825	87.2353	1.0357	0.0119
Kurtosis	0.22	0.18	0.00	0.08	0.12	0.10	
Skewness	0.41	0.43	0.39	0.40	0.41	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS001	25418.945292	0.0745	0.033	0.002473
SS002	35691.377965	0.4125	0.047	0.019227
SS003	37428.094614	0.1445	0.049	0.007063
SS004	32569.593128	0.2175	0.043	0.009251
SS005	7657.899600	0.193	0.010	0.001930
SS010	44987.144442	0.2275	0.059	0.013366
SS011	44985.824618	0.235	0.059	0.013806
SS012	44989.420873	0.1175	0.059	0.006904
SS013	31893.766123	0.18	0.042	0.007497
SS019	30238.616681	0.05	0.039	0.001975
SS020	41769.977557	0.086	0.055	0.004691
SS021	41915.666234	1.9	0.055	0.104007
SS022	54253.028763	0.035	0.071	0.002480
SS028	24594.542762	0.088	0.032	0.002827
SS029	33392.102982	0.038	0.044	0.001657
SS035	17345.287243	0.27	0.023	0.006116
SS036	25219.787268	0.0475	0.033	0.001564
SS037	16024.975778	0.21	0.021	0.004395
SS038	19993.741147	0.335	0.026	0.008747
SS039	18698.960450	0.06575	0.024	0.001606
SS040	39848.184658	1.035	0.052	0.053862
SS048	5322.769935	0.0795	0.007	0.000553
SS095	30987.719361	1.825	0.040	0.073856
SS096	34257.364848	0.375	0.045	0.016777
SS097	26231.428918	0.15	0.034	0.005139
	765716.22	8.39	1.00	0.37

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1168	0.1175	0.1002	0.1194	0.1135	0.0089	0.0788
Max	0.8686	0.8574	0.8220	0.8495	0.8494	0.0199	0.0234
Average	0.3729	0.3731	0.3699	0.3712	0.3718	0.0015	0.0041
Std Dev	0.1065	0.1055	0.1079	0.1067	0.1067	0.0010	0.0094
1%	0.1611	0.1614	0.1571	0.1580	0.1594	0.0021	0.0134
5%	0.2122	0.2115	0.2083	0.2126	0.2112	0.0019	0.0091
10%	0.2406	0.2415	0.2366	0.2400	0.2397	0.0022	0.0090
15%	0.2634	0.2623	0.2577	0.2607	0.2611	0.0025	0.0094
20%	0.2823	0.2800	0.2786	0.2790	0.2800	0.0016	0.0059
25%	0.2976	0.2975	0.2941	0.2926	0.2955	0.0025	0.0085
30%	0.3117	0.3131	0.3079	0.3082	0.3102	0.0026	0.0083
35%	0.3247	0.3276	0.3210	0.3243	0.3244	0.0027	0.0084
40%	0.3379	0.3410	0.3354	0.3368	0.3378	0.0024	0.0070
45%	0.3531	0.3551	0.3487	0.3505	0.3518	0.0028	0.0081
50%	0.3659	0.3673	0.3624	0.3643	0.3650	0.0021	0.0058
55%	0.3786	0.3793	0.3751	0.3776	0.3777	0.0018	0.0049
60%	0.3923	0.3931	0.3893	0.3914	0.3915	0.0016	0.0042
65%	0.4072	0.4076	0.4030	0.4042	0.4055	0.0023	0.0056
70%	0.4236	0.4221	0.4207	0.4220	0.4221	0.0012	0.0029
75%	0.4402	0.4414	0.4372	0.4402	0.4398	0.0018	0.0041
80%	0.4595	0.4600	0.4563	0.4597	0.4589	0.0017	0.0038
85%	0.4827	0.4857	0.4821	0.4842	0.4837	0.0016	0.0034
90%	0.5135	0.5148	0.5145	0.5124	0.5138	0.0011	0.0022
95%	0.5612	0.5581	0.5614	0.5561	0.5592	0.0025	0.0045
97%	0.5912	0.5864	0.5913	0.5905	0.5899	0.0023	0.0040
99%	0.6512	0.6405	0.6550	0.6440	0.6477	0.0066	0.0102
Kurtosis	0.17	0.03	0.24	0.27	0.18	0.11	
Skewness	0.42	0.36	0.46	0.45	0.42	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
GA-SOIL-034	15096.001062	0.28733	0.020	0.005665
GA-SOIL-035	16606.965160	7.9546	0.022	0.172521
GA-SOIL-036	23573.808900	0.107927	0.031	0.003323
SL	14165.325407	26.334	0.018	0.487164
SS001	21718.616564	0.617433	0.028	0.017513
SS002	21288.424127	1.933675	0.028	0.053760
SS003	30964.156342	4.94787	0.040	0.200083
SS004	12622.572702	1.89947	0.016	0.031312
SS005	7657.899600	5.6786	0.010	0.056791
SS010	41313.111900	0.9118525	0.054	0.049198
SS011	40869.403257	1.099075	0.053	0.058662
SS012	42241.785850	2.0761	0.055	0.114531
SS013	31724.568272	1.69645	0.041	0.070286
SS019	30238.616681	0.7375975	0.039	0.029128
SS020	41769.977557	0.63229	0.055	0.034492
SS021	41915.666234	20.038	0.055	1.096890
SS022	54197.781674	0.0739475	0.071	0.005234
SS028	24594.542762	13.5802	0.032	0.436191
SS029	33392.102982	0.03928875	0.044	0.001713
SS035	17345.287241	1.45637	0.023	0.032990
SS036	18246.727501	0.715355	0.024	0.017047
SS037	12672.888992	7.86625	0.017	0.130189
SS038	19993.741147	2.383725	0.026	0.062242
SS039	18698.960451	0.41349915	0.024	0.010098
SS040	39848.184659	3.15885	0.052	0.164388
SS048	5322.769937	1.0719375	0.007	0.007451
SS095	30987.719361	5.02877	0.040	0.203509
SS096	30560.207478	40.348	0.040	1.610314
SS097	26088.407426	0.1786165	0.034	0.006086
	765716.22	153.27	1.00	5.17

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.9968	1.2351	1.2903	1.1363	1.1646	0.1288	0.1106
Max	13.4766	12.4690	12.8704	14.0512	13.2168	0.6935	0.0525
Average	5.2531	5.3181	5.3041	5.2995	5.2937	0.0282	0.0053
Std Dev	1.7515	1.7511	1.7001	1.7576	1.7401	0.0268	0.0154
1%	1.9659	2.0216	2.0015	1.9822	1.9928	0.0241	0.0121
5%	2.6887	2.6855	2.7544	2.6726	2.7003	0.0367	0.0136
10%	3.1184	3.1728	3.2149	3.1404	3.1616	0.0420	0.0133
15%	3.4944	3.5046	3.5356	3.4988	3.5083	0.0186	0.0053
20%	3.7562	3.7943	3.8179	3.7933	3.7904	0.0255	0.0067
25%	4.0039	4.0370	4.0753	4.0345	4.0377	0.0293	0.0072
30%	4.2376	4.2997	4.3074	4.2524	4.2743	0.0345	0.0081
35%	4.4359	4.5222	4.5423	4.4757	4.4940	0.0477	0.0106
40%	4.6428	4.7452	4.7496	4.6947	4.7081	0.0501	0.0106
45%	4.8720	4.9573	4.9409	4.9125	4.9207	0.0374	0.0076
50%	5.0865	5.1713	5.1653	5.1508	5.1435	0.0390	0.0076
55%	5.3216	5.3891	5.3726	5.3802	5.3659	0.0303	0.0056
60%	5.5441	5.6422	5.5995	5.5961	5.5955	0.0402	0.0072
65%	5.7770	5.8800	5.8584	5.8362	5.8379	0.0444	0.0076
70%	6.0502	6.1389	6.1164	6.1112	6.1042	0.0379	0.0062
75%	6.3150	6.4317	6.4259	6.4003	6.3932	0.0539	0.0084
80%	6.6507	6.7296	6.7274	6.7273	6.7087	0.0387	0.0058
85%	7.0634	7.1352	7.0895	7.1235	7.1029	0.0327	0.0046
90%	7.6423	7.6418	7.5254	7.6579	7.6168	0.0614	0.0081
95%	8.3852	8.4568	8.2415	8.4876	8.3928	0.1096	0.0131
97%	8.9234	8.9622	8.7906	8.9931	8.9173	0.0892	0.0100
99%	9.9192	9.9669	9.8370	9.9262	9.9123	0.0544	0.0055
Kurtosis	0.32	0.19	0.18	0.19	0.22	0.07	
Skewness	0.54	0.48	0.46	0.50	0.50	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS001	25418.945292	0.0205	0.033	0.000681
SS002	35691.377965	0.10375	0.047	0.004836
SS003	37428.094614	0.285	0.049	0.013931
SS004	32569.593128	0.04525	0.043	0.001925
SS005	7657.899600	0.315	0.010	0.003150
SS010	44987.144442	0.0565	0.059	0.003319
SS011	44985.824618	0.11	0.059	0.006462
SS012	44989.420873	0.2175	0.059	0.012779
SS013	31893.766123	0.28	0.042	0.011663
SS019	30238.616681	0.03875	0.039	0.001530
SS020	41769.977557	0.0515	0.055	0.002809
SS021	41915.666234	1.105	0.055	0.060488
SS022	54253.028763	0.00875	0.071	0.000620
SS028	24594.542762	0.38	0.032	0.012205
SS029	33392.102982	0.00875	0.044	0.000382
SS035	17345.287243	0.039	0.023	0.000883
SS036	25219.787268	0.053	0.033	0.001746
SS037	16024.975778	1.24	0.021	0.025951
SS038	19993.741147	0.21	0.026	0.005483
SS039	18698.960450	0.04175	0.024	0.001020
SS040	39848.184658	0.385	0.052	0.020036
SS048	5322.769935	0.1035	0.007	0.000719
SS095	30987.719361	0.479	0.040	0.019385
SS096	34257.364848	1.24	0.045	0.055476
SS097	26231.428918	0.023	0.034	0.000788
	765716.22	6.84	1.00	0.27

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0617	0.0649	0.0712	0.0896	0.0719	0.0124	0.1732
Max	0.5923	0.5422	0.5688	0.5788	0.5705	0.0212	0.0372
Average	0.2638	0.2662	0.2656	0.2674	0.2657	0.0015	0.0057
Std Dev	0.0729	0.0718	0.0723	0.0715	0.0721	0.0006	0.0089
1%	0.1132	0.1219	0.1210	0.1250	0.1203	0.0050	0.0415
5%	0.1528	0.1559	0.1556	0.1574	0.1554	0.0019	0.0125
10%	0.1742	0.1778	0.1770	0.1789	0.1770	0.0020	0.0114
15%	0.1895	0.1918	0.1918	0.1948	0.1919	0.0022	0.0113
20%	0.2012	0.2032	0.2029	0.2069	0.2035	0.0024	0.0117
25%	0.2121	0.2146	0.2137	0.2173	0.2144	0.0022	0.0101
30%	0.2212	0.2257	0.2236	0.2267	0.2243	0.0024	0.0109
35%	0.2318	0.2340	0.2325	0.2354	0.2334	0.0016	0.0068
40%	0.2408	0.2444	0.2422	0.2446	0.2430	0.0018	0.0075
45%	0.2496	0.2526	0.2516	0.2532	0.2517	0.0016	0.0062
50%	0.2591	0.2608	0.2601	0.2619	0.2605	0.0012	0.0047
55%	0.2685	0.2697	0.2693	0.2718	0.2698	0.0014	0.0053
60%	0.2787	0.2798	0.2790	0.2812	0.2797	0.0011	0.0040
65%	0.2887	0.2909	0.2898	0.2911	0.2901	0.0011	0.0038
70%	0.2989	0.3018	0.3003	0.3014	0.3006	0.0013	0.0043
75%	0.3096	0.3143	0.3117	0.3125	0.3120	0.0019	0.0062
80%	0.3236	0.3266	0.3273	0.3255	0.3258	0.0016	0.0049
85%	0.3388	0.3421	0.3425	0.3401	0.3408	0.0017	0.0051
90%	0.3587	0.3605	0.3631	0.3600	0.3606	0.0018	0.0051
95%	0.3909	0.3915	0.3930	0.3925	0.3920	0.0010	0.0025
97%	0.4102	0.4108	0.4120	0.4161	0.4122	0.0026	0.0064
99%	0.4521	0.4506	0.4424	0.4551	0.4500	0.0054	0.0121
Kurtosis	0.33	-0.01	-0.02	0.22	0.13	0.17	
Skewness	0.42	0.34	0.36	0.42	0.38	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
SL	14165.325407	0.35	0.018	0.006475
SS001	25418.945292	0.0028	0.033	0.000093
SS002	35691.377965	0.08225	0.047	0.003834
SS003	37428.094614	0.084	0.049	0.004106
SS004	32569.593128	0.082	0.043	0.003488
SS005	7657.899600	0.4845	0.010	0.004845
SS010	44987.144442	0.28	0.059	0.016450
SS011	44985.824618	0.2	0.059	0.011750
SS012	44989.420873	0.05325	0.059	0.003129
SS013	31893.766123	0.0435	0.042	0.001812
SS019	30238.616681	0.02525	0.039	0.000997
SS020	41769.977557	0.001625	0.055	0.000089
SS021	41915.666234	0.765	0.055	0.041876
SS022	54253.028763	0.0002725	0.071	0.000019
SS028	24594.542762	0.11275	0.032	0.003621
SS029	33392.102982	0.0014875	0.044	0.000065
SS035	17345.287245	0.0405	0.023	0.000917
SS036	18246.727501	0.04475	0.024	0.001066
SS037	12672.888992	0.72	0.017	0.011916
SS038	19993.741147	0.006	0.026	0.000157
SS039	18698.960451	0.00151	0.024	0.000037
SS040	39848.184659	0.465	0.052	0.024199
SS048	5322.769937	0.076	0.007	0.000528
SS095	30987.719361	0.418	0.040	0.016916
SS096	30560.207478	0.325	0.040	0.012971
SS097	26088.407426	0.0015675	0.034	0.000053
	765,716.22	4.67	1.00	0.17

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0419	0.0397	0.0501	0.0498	0.0454	0.0054	0.1180
Max	0.3388	0.3252	0.3437	0.3604	0.3420	0.0145	0.0425
Average	0.1691	0.1683	0.1695	0.1671	0.1685	0.0010	0.0062
Std Dev	0.0419	0.0423	0.0417	0.0422	0.0420	0.0003	0.0061
1%	0.0824	0.0809	0.0817	0.0800	0.0813	0.0010	0.0129
5%	0.1042	0.1036	0.1046	0.1016	0.1035	0.0014	0.0131
10%	0.1176	0.1157	0.1177	0.1138	0.1162	0.0018	0.0159
15%	0.1260	0.1256	0.1261	0.1235	0.1253	0.0012	0.0098
20%	0.1329	0.1316	0.1331	0.1304	0.1320	0.0012	0.0094
25%	0.1391	0.1386	0.1397	0.1373	0.1387	0.0010	0.0073
30%	0.1454	0.1445	0.1455	0.1428	0.1445	0.0012	0.0086
35%	0.1508	0.1501	0.1512	0.1492	0.1503	0.0009	0.0058
40%	0.1566	0.1556	0.1566	0.1544	0.1558	0.0010	0.0066
45%	0.1616	0.1608	0.1621	0.1595	0.1610	0.0011	0.0071
50%	0.1669	0.1658	0.1680	0.1650	0.1664	0.0013	0.0079
55%	0.1722	0.1711	0.1728	0.1706	0.1717	0.0010	0.0059
60%	0.1772	0.1763	0.1782	0.1765	0.1770	0.0009	0.0049
65%	0.1833	0.1823	0.1840	0.1824	0.1830	0.0008	0.0044
70%	0.1891	0.1886	0.1906	0.1885	0.1892	0.0010	0.0052
75%	0.1961	0.1947	0.1971	0.1949	0.1957	0.0011	0.0056
80%	0.2036	0.2032	0.2050	0.2022	0.2035	0.0012	0.0059
85%	0.2123	0.2127	0.2141	0.2110	0.2125	0.0013	0.0061
90%	0.2248	0.2252	0.2248	0.2217	0.2241	0.0016	0.0073
95%	0.2406	0.2412	0.2403	0.2392	0.2403	0.0008	0.0035
97%	0.2525	0.2533	0.2514	0.2512	0.2521	0.0010	0.0039
99%	0.2788	0.2761	0.2698	0.2714	0.2740	0.0042	0.0153
Kurtosis	0.08	0.04	-0.07	0.11	0.04	0.08	
Skewness	0.31	0.30	0.24	0.30	0.29	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
SL	14165.325407	9	0.018	0.166495
SS001	25418.945292	0.0085	0.033	0.000282
SS002	35691.377965	0.0475	0.047	0.002214
SS003	37428.094614	0.047	0.049	0.002297
SS004	32569.593128	0.0795	0.043	0.003382
SS005	7657.899600	0.345	0.010	0.003450
SS010	44987.144442	0.1575	0.059	0.009253
SS011	44985.824618	0.18	0.059	0.010575
SS012	44989.420873	0.032	0.059	0.001880
SS013	31893.766123	0.032	0.042	0.001333
SS019	30238.616681	0.0215	0.039	0.000849
SS020	41769.977557	0.00495	0.055	0.000270
SS021	41915.666234	0.53	0.055	0.029012
SS022	54253.028763	0.000825	0.071	0.000058
SS028	24594.542762	0.04775	0.032	0.001534
SS029	33392.102982	0.004425	0.044	0.000193
SS035	17345.287245	0.024	0.023	0.000544
SS036	18246.727501	0.0475	0.024	0.001132
SS037	12672.888992	0.45	0.017	0.007448
SS038	19993.741147	0.01675	0.026	0.000437
SS039	18698.960451	0.00465	0.024	0.000114
SS040	39848.184659	0.38	0.052	0.019775
SS048	5322.769937	0.04925	0.007	0.000342
SS095	30987.719361	0.4505	0.040	0.018231
SS096	30560.207478	0.1825	0.040	0.007284
SS097	26088.407426	0.004675	0.034	0.000159
	765,716.22	12.15	1.00	0.29

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0356	0.0214	0.0261	0.0232	0.0266	0.0063	0.2376
Max	1.5151	2.1695	1.8190	1.8509	1.8386	0.2675	0.1455
Average	0.3136	0.3091	0.3038	0.3105	0.3093	0.0041	0.0132
Std Dev	0.2524	0.2509	0.2541	0.2538	0.2528	0.0015	0.0058
1%	0.0607	0.0612	0.0600	0.0624	0.0611	0.0010	0.0163
5%	0.0800	0.0800	0.0782	0.0810	0.0798	0.0012	0.0149
10%	0.0916	0.0932	0.0902	0.0919	0.0917	0.0013	0.0138
15%	0.1002	0.1019	0.0998	0.1009	0.1007	0.0009	0.0090
20%	0.1086	0.1095	0.1075	0.1083	0.1085	0.0008	0.0074
25%	0.1166	0.1162	0.1141	0.1154	0.1156	0.0011	0.0097
30%	0.1243	0.1225	0.1210	0.1230	0.1227	0.0014	0.0111
35%	0.1313	0.1300	0.1283	0.1299	0.1299	0.0012	0.0095
40%	0.1394	0.1381	0.1358	0.1384	0.1379	0.0015	0.0111
45%	0.1485	0.1483	0.1450	0.1470	0.1472	0.0016	0.0108
50%	0.1615	0.1601	0.1562	0.1581	0.1590	0.0023	0.0144
55%	0.1858	0.1831	0.1724	0.1799	0.1803	0.0058	0.0322
60%	0.4248	0.4222	0.4096	0.4206	0.4193	0.0067	0.0160
65%	0.4413	0.4400	0.4372	0.4388	0.4393	0.0018	0.0040
70%	0.4549	0.4531	0.4527	0.4535	0.4535	0.0009	0.0021
75%	0.4674	0.4640	0.4642	0.4668	0.4656	0.0018	0.0038
80%	0.4815	0.4771	0.4776	0.4811	0.4793	0.0023	0.0048
85%	0.4993	0.4927	0.4936	0.4988	0.4961	0.0034	0.0069
90%	0.7641	0.5496	0.7418	0.7615	0.7042	0.1036	0.1471
95%	0.8173	0.8122	0.8125	0.8153	0.8143	0.0024	0.0030
97%	0.8389	0.8381	0.8377	0.8387	0.8384	0.0005	0.0007
99%	1.1393	1.1492	1.1398	1.1430	1.1428	0.0045	0.0040
Kurtosis	1.00	2.12	2.22	1.59	1.73	0.56	
Skewness	1.17	1.34	1.41	1.28	1.30	0.10	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
GA-SOIL-034	15096.001062	0.003	0.020	0.000059
GA-SOIL-035	16606.965160	0.094	0.022	0.002039
GA-SOIL-036	23573.808900	0.028	0.031	0.000862
SL	14165.325407	1.75	0.018	0.032374
SS001	21718.616564	0.115	0.028	0.003262
SS002	21288.424127	0.185	0.028	0.005143
SS003	30964.156342	0.0772	0.040	0.003122
SS004	12622.572702	0.05425	0.016	0.000894
SS005	7657.899600	0.31	0.010	0.003100
SS010	41313.111900	0.05675	0.054	0.003062
SS011	40869.403257	0.0465	0.053	0.002482
SS012	42241.785850	0.615	0.055	0.033927
SS013	31724.568272	0.5	0.041	0.020716
SS019	30238.616681	0.118	0.039	0.004660
SS020	41769.977557	0.465	0.055	0.025366
SS021	41915.666234	11.45	0.055	0.626778
SS022	54197.781674	0.01685	0.071	0.001193
SS028	24594.542762	1.735	0.032	0.055728
SS029	33392.102982	0.05519	0.044	0.002407
SS035	17345.287241	0.111875	0.023	0.002534
SS036	18246.727501	0.205	0.024	0.004885
SS037	12672.888992	0.815	0.017	0.013489
SS038	19993.741147	0.99	0.026	0.025850
SS039	18698.960451	0.14225	0.024	0.003474
SS040	39848.184659	4.85	0.052	0.252396
SS048	5322.769937	0.3125	0.007	0.002172
SS095	30987.719361	8	0.040	0.323751
SS096	30560.207478	5.95	0.040	0.237468
SS097	26088.407426	0.0985	0.034	0.003356
	765716.22	39.15	1.00	1.70

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1359	0.2191	0.1449	0.1187	0.1547	0.0443	0.2865
Max	4.3994	4.2649	4.4473	4.5043	4.4040	0.1021	0.0232
Average	1.7113	1.7252	1.6979	1.7116	1.7115	0.0111	0.0065
Std Dev	0.5790	0.5838	0.5907	0.5949	0.5871	0.0071	0.0121
1%	0.5533	0.5450	0.5481	0.5224	0.5422	0.0137	0.0252
5%	0.8193	0.8404	0.8075	0.8021	0.8173	0.0170	0.0208
10%	0.9902	0.9993	0.9866	0.9684	0.9861	0.0130	0.0132
15%	1.1099	1.1174	1.0890	1.0893	1.1014	0.0144	0.0131
20%	1.2063	1.2176	1.1899	1.1947	1.2021	0.0124	0.0103
25%	1.3075	1.3063	1.2780	1.2863	1.2945	0.0147	0.0113
30%	1.3869	1.3888	1.3569	1.3721	1.3762	0.0149	0.0108
35%	1.4638	1.4645	1.4300	1.4461	1.4511	0.0164	0.0113
40%	1.5388	1.5400	1.4984	1.5213	1.5246	0.0194	0.0127
45%	1.6022	1.6136	1.5781	1.5957	1.5974	0.0148	0.0093
50%	1.6757	1.6927	1.6596	1.6794	1.6769	0.0136	0.0081
55%	1.7461	1.7616	1.7332	1.7512	1.7480	0.0118	0.0068
60%	1.8206	1.8394	1.8106	1.8323	1.8257	0.0127	0.0070
65%	1.8977	1.9281	1.8884	1.9077	1.9055	0.0170	0.0089
70%	1.9899	2.0152	1.9739	1.9949	1.9934	0.0170	0.0085
75%	2.0903	2.1058	2.0692	2.0964	2.0904	0.0155	0.0074
80%	2.1891	2.2106	2.1780	2.2126	2.1976	0.0169	0.0077
85%	2.3215	2.3310	2.3110	2.3384	2.3255	0.0119	0.0051
90%	2.4707	2.4929	2.4634	2.5103	2.4843	0.0214	0.0086
95%	2.7332	2.7411	2.7349	2.7571	2.7416	0.0109	0.0040
97%	2.9165	2.8903	2.9271	2.9058	2.9100	0.0157	0.0054
99%	3.1759	3.2156	3.2863	3.2227	3.2251	0.0457	0.0142
Kurtosis	0.07	0.05	0.29	0.02	0.11	0.12	
Skewness	0.35	0.36	0.47	0.35	0.38	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Southwest Wooded Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
GA-SOIL-034	26579.483126	9.5043E-06	0.035	0.000000
GA-SOIL-035	29157.020829	0.000952974	0.038	0.000036
GA-SOIL-036	56952.789366	0.000404181	0.074	0.000030
SL	27570.641690	0.000510991	0.036	0.000018
SS001	37029.334174	1.1219E-05	0.048	0.000001
SS002	27719.448758	8.01007E-05	0.036	0.000003
SS003	64003.566395	0.000149838	0.084	0.000013
SS005	21245.915367	0.000484775	0.028	0.000013
SS020	83939.819944	0.000494771	0.110	0.000054
SS022	128987.652024	3.7241E-05	0.168	0.000006
SS035	21246.916600	4.31979E-05	0.028	0.000001
SS037	16665.927746	0.00075937	0.022	0.000017
SS038	70179.110158	0.00084781	0.092	0.000078
SS041	14901.618233	0.001114581	0.019	0.000022
SS062	2655.056818	0.000826882	0.003	0.000003
SS095	56456.290796	0.003101134	0.074	0.000229
SS096	30560.258089	0.003909679	0.040	0.000156
SS097	49865.371049	3.19864E-05	0.065	0.000002
	765,716.22	0.01	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0663
Max	0.0019	0.0018	0.0019	0.0017	0.0018	0.0001	0.0537
Average	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0028
Std Dev	0.0002	0.0002	0.0002	0.0002	0.0002	0.0000	0.0043
1%	0.0002	0.0002	0.0002	0.0002	0.0002	0.0000	0.0179
5%	0.0003	0.0003	0.0003	0.0003	0.0003	0.0000	0.0226
10%	0.0004	0.0004	0.0004	0.0004	0.0004	0.0000	0.0140
15%	0.0004	0.0004	0.0004	0.0004	0.0004	0.0000	0.0093
20%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0086
25%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0056
30%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0042
35%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0051
40%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0040
45%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0033
50%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0056
55%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0039
60%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0034
65%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0020
70%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0027
75%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0023
80%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0029
85%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0031
90%	0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0077
95%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0063
97%	0.0012	0.0012	0.0012	0.0012	0.0012	0.0000	0.0073
99%	0.0013	0.0013	0.0013	0.0013	0.0013	0.0000	0.0134
Kurtosis	0.16	0.19	0.17	0.09	0.15	0.04	
Skewness	0.46	0.55	0.52	0.48	0.50	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS005	18586.086007	0.1775	0.022	0.003874
SS006	24646.956235	0.175	0.029	0.005065
SS007	24788.079546	0.2175	0.029	0.006331
SS008	22.071339	0.175	0.000	0.000005
SS013	13108.100078	0.685	0.015	0.010544
SS014	44969.460629	0.675	0.053	0.035645
SS015	44979.531616	0.43	0.053	0.022713
SS016	23233.707778	0.18	0.027	0.004911
SS022	1999.677816	0.2725	0.002	0.000640
SS023	54485.706600	0.1775	0.064	0.011357
SS024	42022.430629	0.18	0.049	0.008883
SS025	43796.757290	0.435	0.051	0.022372
SS026	565.234353	0.1775	0.001	0.000118
SS030	33689.532647	0.525	0.040	0.020770
SS031	37594.358876	0.1825	0.044	0.008057
SS032	27481.386884	106	0.032	3.420796
SS033	6973.361334	0.1775	0.008	0.001454
SS040	2944.948959	5.9	0.003	0.020404
SS041	48178.807350	0.7	0.057	0.039604
SS042	18282.485388	0.3475	0.021	0.007461
SS043	18095.854803	0.38	0.021	0.008075
SS044	28379.854973	0.645	0.033	0.021496
SS045	64410.783757	0.8875	0.076	0.067129
SS046	43235.434967	0.1825	0.051	0.009266
SS047	14853.220921	0.18	0.017	0.003140
SS049	4705.608709	0.72	0.006	0.003979
SS050	4538.327841	1.83	0.005	0.009753
SS051	9114.085515	0.595	0.011	0.006368
SS052	13334.121816	0.385	0.016	0.006028
SS068	17100.217060	1.65	0.020	0.033134
SS069	53083.461630	0.605	0.062	0.037714
SS070	15150.373062	0.4225	0.018	0.007517
SS094	23840.438858	0.1825	0.028	0.005109
SS101	29373.585660	0.785	0.034	0.027078
	851564.05	127.24	1.00	3.90

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.3251	0.3357	0.3159	0.3014	0.3195	0.0145	0.0455
Max	25.2707	19.1022	19.2322	22.1927	21.4494	2.9200	0.1361
Average	3.9538	3.9261	3.9252	3.9081	3.9283	0.0189	0.0048
Std Dev	3.2716	3.2326	3.2469	3.2295	3.2451	0.0192	0.0059
1%	0.3871	0.3827	0.3868	0.3832	0.3849	0.0023	0.0060
5%	0.4223	0.4204	0.4221	0.4221	0.4217	0.0009	0.0022
10%	0.4478	0.4477	0.4496	0.4482	0.4483	0.0009	0.0019
15%	0.4742	0.4727	0.4732	0.4731	0.4733	0.0006	0.0013
20%	0.4998	0.4970	0.4970	0.4989	0.4982	0.0014	0.0028
25%	0.5354	0.5306	0.5322	0.5341	0.5331	0.0021	0.0040
30%	0.6147	0.6076	0.6074	0.6160	0.6114	0.0046	0.0075
35%	3.4981	3.4954	3.5012	3.5034	3.4995	0.0035	0.0010
40%	3.5367	3.5338	3.5339	3.5371	3.5354	0.0018	0.0005
45%	3.5568	3.5571	3.5560	3.5569	3.5567	0.0005	0.0001
50%	3.5777	3.5782	3.5788	3.5768	3.5779	0.0009	0.0002
55%	3.5990	3.5996	3.6002	3.5984	3.5993	0.0008	0.0002
60%	3.6266	3.6263	3.6273	3.6276	3.6269	0.0006	0.0002
65%	3.6840	3.6842	3.6804	3.6722	3.6802	0.0056	0.0015
70%	6.5941	6.5937	6.5744	3.8226	5.8962	1.3824	0.2345
75%	6.6551	6.6536	6.6480	6.6420	6.6497	0.0060	0.0009
80%	6.6886	6.6882	6.6856	6.6812	6.6859	0.0034	0.0005
85%	6.7389	6.7340	6.7345	6.7257	6.7333	0.0055	0.0008
90%	9.7004	6.9482	9.6874	6.8817	8.3044	1.6047	0.1932
95%	9.8169	9.8199	9.8186	9.8148	9.8176	0.0022	0.0002
97%	9.9240	9.9284	9.9354	9.9250	9.9282	0.0051	0.0005
99%	12.9515	12.9373	12.9513	12.9813	12.9553	0.0185	0.0014
Kurtosis	1.04	0.61	0.73	1.19	0.89	0.27	
Skewness	0.95	0.88	0.92	1.01	0.94	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
GA-SOIL-037	15017.057599	10	0.018	0.176347
SS005	18586.086007	8.5	0.022	0.185519
SS006	21745.340887	17.5	0.026	0.446876
SS007	19611.806402	4.55	0.023	0.104788
SS008	22.071339	4.75	0.000	0.000123
SS013	13108.100078	52	0.015	0.800434
SS014	44969.460629	117	0.053	6.178545
SS015	38040.362651	56	0.045	2.501586
SS016	23233.707778	17	0.027	0.463821
SS022	1999.677816	2.7	0.002	0.006340
SS023	54485.706600	15.75	0.064	1.007734
SS024	42022.430629	24	0.049	1.184336
SS025	43796.757290	69	0.051	3.548736
SS026	565.234353	128.5	0.001	0.085293
SS030	33689.532647	12.35	0.040	0.488590
SS031	37594.358876	49.1	0.044	2.167638
SS032	27481.386884	40.5	0.032	1.307002
SS033	6973.361334	56	0.008	0.458578
SS040	2944.948959	275	0.003	0.951028
SS041	48178.807350	31.5	0.057	1.782171
SS042	18282.485388	18.75	0.021	0.402549
SS043	18095.854803	17.5	0.021	0.371877
SS044	28379.854973	57	0.033	1.899624
SS045	64410.783757	51	0.076	3.857549
SS046	43235.434967	14	0.051	0.710805
SS047	14853.220921	6.9	0.017	0.120352
SS049	4705.608709	44.5	0.006	0.245900
SS050	4538.327841	145	0.005	0.772763
SS051	9114.085515	60	0.011	0.642166
SS052	13334.121816	61	0.016	0.955162
SS068	17100.217060	175	0.020	3.514167
SS069	53083.461630	20	0.062	1.246729
SS070	15150.373062	55.75	0.018	0.991861
SS094	23840.438858	27.75	0.028	0.776891
SS101	29373.585660	56	0.034	1.931647
	851,564.05	1,801.85	1.00	42.29

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	23.1800	25.6686	23.7229	23.8743	24.1114	1.0800	0.0448
Max	68.4957	65.3271	70.8543	67.6000	68.0693	2.2860	0.0336
Average	42.3384	42.2365	42.2964	42.0540	42.2313	0.1254	0.0030
Std Dev	6.2176	6.1241	6.0983	6.0426	6.1207	0.0731	0.0119
1%	29.8726	30.0992	29.7999	29.7443	29.8790	0.1559	0.0052
5%	32.9839	32.8926	32.9985	32.7166	32.8979	0.1296	0.0039
10%	34.8284	34.5543	34.7899	34.4784	34.6627	0.1726	0.0050
15%	36.0014	35.9229	36.0814	35.9175	35.9808	0.0772	0.0021
20%	36.9554	36.9277	37.1366	36.9177	36.9844	0.1027	0.0028
25%	37.8971	37.9182	37.8982	37.8518	37.8913	0.0281	0.0007
30%	38.7659	38.7877	38.7910	38.6814	38.7565	0.0513	0.0013
35%	39.5795	39.6537	39.5671	39.4004	39.5502	0.1069	0.0027
40%	40.3243	40.4183	40.3729	40.1694	40.3212	0.1082	0.0027
45%	41.0086	41.1195	41.0708	40.8395	41.0096	0.1221	0.0030
50%	41.8214	41.8543	41.8714	41.5971	41.7861	0.1276	0.0031
55%	42.6621	42.6569	42.6256	42.4327	42.5943	0.1089	0.0026
60%	43.3920	43.3934	43.4469	43.2674	43.3749	0.0761	0.0018
65%	44.2871	44.2329	44.3001	44.0596	44.2199	0.1108	0.0025
70%	45.3019	45.1314	45.3091	44.8576	45.1500	0.2115	0.0047
75%	46.3289	46.0757	46.2293	45.8971	46.1328	0.1885	0.0041
80%	47.5749	47.1034	47.4017	47.1089	47.2972	0.2317	0.0049
85%	48.9644	48.4104	48.7440	48.3758	48.6236	0.2813	0.0058
90%	50.6050	50.1700	50.4783	50.0946	50.3370	0.2439	0.0048
95%	53.1361	52.9720	53.0115	52.6344	52.9385	0.2145	0.0041
97%	55.0865	54.7846	54.5245	54.4430	54.7097	0.2904	0.0053
99%	58.3807	58.9625	58.2215	57.4340	58.2497	0.6302	0.0108
Kurtosis	0.15	0.25	0.08	0.09	0.14	0.07	
Skewness	0.39	0.42	0.35	0.35	0.38	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
GA-SOIL-037	15017.057599	13.7	0.018	0.241595
SS005	18586.086007	11.5	0.022	0.250997
SS006	21745.340887	15.5	0.026	0.395804
SS007	19611.806402	7.45	0.023	0.171576
SS008	22.071339	4.8	0.000	0.000124
SS013	13108.100078	68.5	0.015	1.054418
SS014	44969.460629	57.5	0.053	3.036464
SS015	38040.362651	72.5	0.045	3.238660
SS016	23233.707778	18.5	0.027	0.504746
SS022	1999.677816	6.15	0.002	0.014442
SS023	54485.706600	19.4	0.064	1.241272
SS024	42022.430629	32.5	0.049	1.603789
SS025	43796.757290	65.5	0.051	3.368728
SS026	565.234353	9.5	0.001	0.006306
SS030	33689.532647	14	0.040	0.553867
SS031	37594.358876	33.75	0.044	1.489976
SS032	27481.386884	47.5	0.032	1.532904
SS033	6973.361334	3.95	0.008	0.032346
SS040	2944.948959	455	0.003	1.573518
SS041	48178.807350	48.5	0.057	2.743977
SS042	18282.485388	34.25	0.021	0.735324
SS043	18095.854803	23.75	0.021	0.504691
SS044	28379.854973	93	0.033	3.099387
SS045	64410.783757	8.35	0.076	0.631579
SS046	43235.434967	11	0.051	0.558490
SS047	14853.220921	5.475	0.017	0.095496
SS049	4705.608709	77.5	0.006	0.428253
SS050	4538.327841	220	0.005	1.172469
SS051	9114.085515	78.5	0.011	0.840167
SS052	13334.121816	115	0.016	1.800715
SS068	17100.217060	250	0.020	5.020238
SS069	53083.461630	8.7	0.062	0.542327
SS070	15150.373062	40	0.018	0.711649
SS094	23840.438858	35.5	0.028	0.993860
SS101	29373.585660	96.5	0.034	3.328641
	851,564.05	2,103.23	1.00	43.52

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	22.9343	20.7221	23.0614	20.9650	21.9207	1.2488	0.0570
Max	82.3700	83.3386	80.0793	86.5171	83.0762	2.6702	0.0321
Average	43.5842	43.6400	43.4553	43.5188	43.5496	0.0800	0.0018
Std Dev	8.3226	8.5030	8.3852	8.3219	8.3832	0.0852	0.0102
1%	27.8048	27.9672	27.9756	28.5896	28.0843	0.3459	0.0123
5%	31.3364	31.4707	31.5302	31.7477	31.5212	0.1714	0.0054
10%	33.6739	33.6489	33.6431	33.6662	33.6580	0.0144	0.0004
15%	35.2211	35.1442	35.0708	35.1569	35.1482	0.0616	0.0018
20%	36.4969	36.4096	36.2893	36.3153	36.3777	0.0947	0.0026
25%	37.6421	37.5523	37.3105	37.4729	37.4945	0.1408	0.0038
30%	38.6899	38.6057	38.3677	38.5811	38.5611	0.1371	0.0036
35%	39.6914	39.5780	39.3612	39.5715	39.5505	0.1377	0.0035
40%	40.6704	40.5351	40.3426	40.6549	40.5507	0.1514	0.0037
45%	41.6936	41.5733	41.4151	41.6026	41.5712	0.1160	0.0028
50%	42.7589	42.6054	42.4571	42.6118	42.6083	0.1232	0.0029
55%	43.8680	43.7021	43.5221	43.6461	43.6846	0.1436	0.0033
60%	44.9359	44.9414	44.6701	44.6991	44.8116	0.1471	0.0033
65%	46.0014	46.0676	45.7986	45.7893	45.9142	0.1415	0.0031
70%	47.2857	47.2646	47.0940	46.9906	47.1587	0.1412	0.0030
75%	48.6700	48.7900	48.4930	48.4652	48.6046	0.1533	0.0032
80%	50.3903	50.3226	50.1656	50.0623	50.2352	0.1488	0.0030
85%	52.2591	52.3270	52.0692	51.9716	52.1567	0.1647	0.0032
90%	54.4319	54.9577	54.8514	54.4415	54.6706	0.2736	0.0050
95%	58.1100	59.1025	59.2694	58.7182	58.8000	0.5147	0.0088
97%	60.6935	61.9593	61.5273	61.9323	61.5281	0.5904	0.0096
99%	66.9354	67.8429	65.6820	66.6738	66.7835	0.8890	0.0133
Kurtosis	0.63	0.60	0.36	0.74	0.58	0.16	
Skewness	0.61	0.66	0.62	0.69	0.64	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS005	18586.086007	25.5	0.022	0.556558
SS006	24646.956235	16.5	0.029	0.477562
SS007	24788.079546	4.75	0.029	0.138267
SS008	22.071339	5.9	0.000	0.000153
SS013	13108.100078	19.5	0.015	0.300163
SS014	44969.460629	36	0.053	1.901091
SS015	44979.531616	35.5	0.053	1.875107
SS016	23233.707778	5.2	0.027	0.141875
SS022	1999.677816	11.5	0.002	0.027005
SS023	54485.706600	8.7	0.064	0.556653
SS024	42022.430629	5.45	0.049	0.268943
SS025	43796.757290	12	0.051	0.617172
SS026	565.234353	9.7	0.001	0.006438
SS030	33689.532647	25.5	0.040	1.008830
SS031	37594.358876	7.2	0.044	0.317861
SS032	27481.386884	1190	0.032	38.403277
SS033	6973.361334	3.15	0.008	0.025795
SS040	2944.948959	250	0.003	0.864571
SS041	48178.807350	29	0.057	1.640729
SS042	18282.485388	12.5	0.021	0.268366
SS043	18095.854803	5.15	0.021	0.109438
SS044	28379.854973	20	0.033	0.666535
SS045	64410.783757	14.85	0.076	1.123227
SS046	43235.434967	5.7	0.051	0.289399
SS047	14853.220921	5.325	0.017	0.092880
SS049	4705.608709	8.85	0.006	0.048904
SS050	4538.327841	21	0.005	0.111917
SS051	9114.085515	22.5	0.011	0.240812
SS052	13334.121816	15.5	0.016	0.242705
SS068	17100.217060	26.5	0.020	0.532145
SS069	53083.461630	24	0.062	1.496074
SS070	15150.373062	24.25	0.018	0.431437
SS094	23840.438858	4.65	0.028	0.130182
SS101	29373.585660	20	0.034	0.689874
	851564.05	1931.83	1.00	55.60

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	11.8500	11.7824	11.5522	10.8132	11.4994	0.4749	0.0413
Max	231.5500	224.6368	258.1500	229.0110	235.8370	15.1469	0.0642
Average	54.9846	55.5133	55.1081	56.2667	55.4682	0.5783	0.0104
Std Dev	35.4339	35.6103	35.4706	35.2932	35.4520	0.1303	0.0037
1%	13.8100	13.8462	13.6529	13.9434	13.8131	0.1207	0.0087
5%	15.3200	15.3100	15.2551	15.2801	15.2913	0.0295	0.0019
10%	16.2226	16.1646	16.0968	16.2276	16.1779	0.0612	0.0038
15%	16.9286	16.9882	16.8389	16.9742	16.9325	0.0674	0.0040
20%	17.6432	17.7978	17.6844	17.7676	17.7233	0.0717	0.0040
25%	18.5399	18.8175	18.7561	19.0276	18.7852	0.2007	0.0107
30%	21.4731	22.3282	21.7797	23.8112	22.3480	1.0376	0.0464
35%	48.5257	48.7091	48.4763	49.2807	48.7479	0.3690	0.0076
40%	49.9337	49.9991	49.9565	50.3298	50.0548	0.1854	0.0037
45%	50.7732	50.7354	50.7607	51.0505	50.8300	0.1479	0.0029
50%	51.3974	51.4040	51.3996	51.7467	51.4869	0.1732	0.0034
55%	52.0235	52.1237	52.1582	52.4286	52.1835	0.1731	0.0033
60%	52.8069	52.9088	53.0406	53.4226	53.0447	0.2695	0.0051
65%	54.4268	54.6036	54.9542	57.0586	55.2608	1.2184	0.0220
70%	61.4150	81.9715	82.4343	83.5126	77.3334	10.6319	0.1375
75%	84.9013	85.0827	84.9123	85.2368	85.0333	0.1591	0.0019
80%	86.1500	86.2848	86.0023	86.3165	86.1884	0.1435	0.0017
85%	87.3754	87.7246	87.3747	87.4983	87.4933	0.1648	0.0019
90%	93.9500	117.7823	93.2404	93.0816	99.5136	12.1850	0.1224
95%	121.0740	121.2724	121.2764	121.1254	121.1870	0.1030	0.0009
97%	123.6060	123.8734	123.8387	125.3344	124.1631	0.7898	0.0064
99%	155.8783	155.1439	155.9834	155.8480	155.7134	0.3841	0.0025
Kurtosis	0.70	0.42	0.90	0.70	0.68	0.20	
Skewness	0.89	0.84	0.91	0.84	0.87	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS005	18586.086007	0.193	0.022	0.004212
SS006	24646.956235	0.1075	0.029	0.003111
SS007	24788.079546	0.0595	0.029	0.001732
SS008	22.071339	0.081	0.000	0.000002
SS013	13108.100078	0.18	0.015	0.002771
SS014	44969.460629	0.099	0.053	0.005228
SS015	44979.531616	0.148	0.053	0.007817
SS016	23233.707778	0.195	0.027	0.005320
SS022	1999.677816	0.035	0.002	0.000082
SS023	54485.706600	0.024	0.064	0.001536
SS024	42022.430629	0.032	0.049	0.001579
SS025	43796.757290	0.485	0.051	0.024944
SS026	565.234353	0.066	0.001	0.000044
SS030	33689.532647	0.16	0.040	0.006330
SS031	37594.358876	0.2085	0.044	0.009205
SS032	27481.386884	1.15	0.032	0.037112
SS033	6973.361334	0.0315	0.008	0.000258
SS040	2944.948959	1.035	0.003	0.003579
SS041	48178.807350	0.24	0.057	0.013578
SS042	18282.485388	0.125	0.021	0.002684
SS043	18095.854803	0.088	0.021	0.001870
SS044	28379.854973	1.5	0.033	0.049990
SS045	64410.783757	0.0735	0.076	0.005559
SS046	43235.434967	0.515	0.051	0.026147
SS047	14853.220921	0.08075	0.017	0.001408
SS049	4705.608709	0.0745	0.006	0.000412
SS050	4538.327841	0.37	0.005	0.001972
SS051	9114.085515	0.225	0.011	0.002408
SS052	13334.121816	0.195	0.016	0.003053
SS068	17100.217060	0.155	0.020	0.003113
SS069	53083.461630	0.065	0.062	0.004052
SS070	15150.373062	1.895	0.018	0.033714
SS094	23840.438858	0.089	0.028	0.002492
SS101	29373.585660	1.3	0.034	0.044842
	851564.05	11.28	1.00	0.31

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1268	0.0932	0.1156	0.1274	0.1158	0.0160	0.1379
Max	0.5910	0.6586	0.6044	0.5923	0.6116	0.0319	0.0522
Average	0.3128	0.3131	0.3108	0.3115	0.3120	0.0011	0.0035
Std Dev	0.0734	0.0745	0.0745	0.0733	0.0739	0.0007	0.0091
1%	0.1667	0.1628	0.1603	0.1631	0.1632	0.0026	0.0161
5%	0.1986	0.1994	0.1960	0.1986	0.1982	0.0015	0.0076
10%	0.2205	0.2225	0.2180	0.2195	0.2201	0.0019	0.0086
15%	0.2374	0.2356	0.2346	0.2342	0.2354	0.0014	0.0061
20%	0.2503	0.2486	0.2463	0.2481	0.2483	0.0017	0.0067
25%	0.2618	0.2595	0.2582	0.2582	0.2594	0.0017	0.0066
30%	0.2717	0.2702	0.2681	0.2691	0.2698	0.0015	0.0057
35%	0.2817	0.2802	0.2780	0.2785	0.2796	0.0017	0.0060
40%	0.2911	0.2896	0.2869	0.2886	0.2891	0.0018	0.0061
45%	0.2999	0.2994	0.2960	0.2978	0.2983	0.0018	0.0059
50%	0.3084	0.3082	0.3055	0.3067	0.3072	0.0014	0.0044
55%	0.3172	0.3176	0.3160	0.3165	0.3168	0.0007	0.0023
60%	0.3269	0.3272	0.3257	0.3266	0.3266	0.0007	0.0020
65%	0.3367	0.3379	0.3353	0.3368	0.3367	0.0010	0.0031
70%	0.3474	0.3481	0.3476	0.3478	0.3477	0.0003	0.0008
75%	0.3589	0.3608	0.3598	0.3593	0.3597	0.0008	0.0022
80%	0.3725	0.3748	0.3723	0.3734	0.3732	0.0011	0.0030
85%	0.3879	0.3908	0.3884	0.3885	0.3889	0.0013	0.0034
90%	0.4097	0.4106	0.4089	0.4091	0.4096	0.0008	0.0019
95%	0.4442	0.4443	0.4407	0.4396	0.4422	0.0024	0.0054
97%	0.4650	0.4634	0.4616	0.4601	0.4625	0.0021	0.0046
99%	0.4997	0.5029	0.5011	0.4957	0.4999	0.0031	0.0061
Kurtosis	0.11	0.18	0.06	-0.03	0.08	0.09	
Skewness	0.36	0.39	0.37	0.35	0.37	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
GA-SOIL-037	15017.057599	11.28	0.018	0.198919
NL	13648.423873	92.48	0.016	1.482221
PL	7972.722207	7.2914	0.009	0.068265
SS005	18586.086007	5.6786	0.022	0.123940
SS006	21745.340887	2.77095	0.026	0.070758
SS007	19611.806402	1.037855	0.023	0.023902
SS008	22.071339	3.1026	0.000	0.000080
SS013	13108.100078	1.69645	0.015	0.026113
SS014	44969.460629	4.77755	0.053	0.252293
SS015	38040.362651	1.20621	0.045	0.053883
SS016	23233.707778	3.54995	0.027	0.096855
SS022	1999.677816	0.0739475	0.002	0.000174
SS023	54485.706600	1.7739575	0.064	0.113503
SS024	42022.430629	0.3807	0.049	0.018787
SS025	43796.757290	2.0775	0.051	0.106848
SS026	565.234353	6.00902	0.001	0.003989
SS030	33689.532647	3.2829	0.040	0.129878
SS031	37566.187193	1.162692	0.044	0.051291
SS032	27481.386884	3.0823	0.032	0.099471
SS033	6973.361334	0.003103628	0.008	0.000025
SS040	2944.948959	3.15885	0.003	0.010924
SS041	48178.807350	1.691095	0.057	0.095677
SS042	18282.485388	6.593625	0.021	0.141561
SS043	17422.394552	2.72175	0.020	0.055685
SS044	26953.028808	43.686	0.032	1.382715
SS045	64410.783757	1.9228	0.076	0.145437
SS046	39845.121367	3.49255	0.047	0.163418
SS047	10359.237848	0.255035	0.012	0.003102
SS049	4705.608709	1.16392	0.006	0.006432
SS050	4538.327841	1.58355	0.005	0.008439
SS051	5775.898326	5.17785	0.007	0.035120
SS052	13334.121816	3.80755	0.016	0.059620
SS068	17100.217060	3.38205	0.020	0.067915
SS069	52995.036228	2.09655	0.062	0.130474
SS070	15150.373062	16.319775	0.018	0.290349
SS094	23840.438858	1.9318325	0.028	0.054084
SS101	21191.807075	40.98	0.025	1.019818
	851564.05	292.68	1.00	6.59

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	1.9381	2.0133	2.0336	1.9318	1.9792	0.0518	0.0262
Max	22.7315	17.9059	17.8918	18.1770	19.1765	2.3736	0.1238
Average	6.6123	6.5366	6.5838	6.5094	6.5605	0.0462	0.0070
Std Dev	2.4407	2.3980	2.3925	2.3475	2.3947	0.0381	0.0159
1%	2.4944	2.4778	2.5266	2.4982	2.4993	0.0203	0.0081
5%	3.1945	3.1326	3.2265	3.1833	3.1842	0.0390	0.0122
10%	3.7249	3.6717	3.7117	3.6888	3.6993	0.0237	0.0064
15%	4.0702	4.0325	4.0799	4.0290	4.0529	0.0259	0.0064
20%	4.4796	4.3984	4.4987	4.4549	4.4579	0.0435	0.0098
25%	4.7939	4.7421	4.8167	4.7874	4.7850	0.0312	0.0065
30%	5.0734	5.0337	5.0937	5.0479	5.0622	0.0267	0.0053
35%	5.3845	5.3430	5.3887	5.3273	5.3609	0.0305	0.0057
40%	5.7181	5.6774	5.7310	5.6979	5.7061	0.0235	0.0041
45%	6.0092	5.9744	6.0073	5.9873	5.9945	0.0167	0.0028
50%	6.2708	6.2327	6.2578	6.2308	6.2480	0.0195	0.0031
55%	6.6152	6.5507	6.5729	6.5399	6.5697	0.0333	0.0051
60%	6.9989	6.8787	6.9071	6.8859	6.9176	0.0555	0.0080
65%	7.3274	7.2375	7.2504	7.2243	7.2599	0.0463	0.0064
70%	7.6801	7.5781	7.6125	7.5318	7.6006	0.0624	0.0082
75%	8.1379	7.9942	8.0896	7.9692	8.0477	0.0794	0.0099
80%	8.5703	8.4953	8.5266	8.3953	8.4969	0.0744	0.0088
85%	9.1532	9.0474	9.0983	8.8798	9.0447	0.1181	0.0131
90%	9.8596	9.7857	9.8349	9.6086	9.7722	0.1133	0.0116
95%	11.0701	11.0141	10.9521	10.7681	10.9511	0.1311	0.0120
97%	11.8393	11.7700	11.7265	11.4645	11.7001	0.1638	0.0140
99%	13.4150	13.1920	13.2356	13.0240	13.2166	0.1607	0.0122
Kurtosis	0.76	0.27	0.53	0.63	0.55	0.21	
Skewness	0.74	0.66	0.71	0.70	0.70	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS005	18586.086007	0.315	0.022	0.006875
SS006	24646.956235	0.25	0.029	0.007236
SS007	24788.079546	0.082	0.029	0.002387
SS008	22.071339	0.181	0.000	0.000005
SS013	13108.100078	0.28	0.015	0.004310
SS014	44969.460629	0.255	0.053	0.013466
SS015	44979.531616	0.15	0.053	0.007923
SS016	23233.707778	0.13	0.027	0.003547
SS022	1999.677816	0.00875	0.002	0.000021
SS023	54485.706600	0.04525	0.064	0.002895
SS024	42022.430629	0.036	0.049	0.001777
SS025	43796.757290	0.155	0.051	0.007972
SS026	565.234353	0.476	0.001	0.000316
SS030	33689.532647	0.47	0.040	0.018594
SS031	37594.358876	0.08925	0.044	0.003940
SS032	27481.386884	0.315	0.032	0.010166
SS033	6973.361334	0.00875	0.008	0.000072
SS040	2944.948959	0.385	0.003	0.001331
SS041	48178.807350	0.195	0.057	0.011032
SS042	18282.485388	0.37	0.021	0.007944
SS043	18095.854803	0.11175	0.021	0.002375
SS044	28379.854973	1.4	0.033	0.046657
SS045	64410.783757	0.165	0.076	0.012480
SS046	43235.434967	0.29	0.051	0.014724
SS047	14853.220921	0.03125	0.017	0.000545
SS049	4705.608709	0.101	0.006	0.000558
SS050	4538.327841	0.175	0.005	0.000933
SS051	9114.085515	0.3	0.011	0.003211
SS052	13334.121816	0.75	0.016	0.011744
SS068	17100.217060	0.45	0.020	0.009036
SS069	53083.461630	0.1385	0.062	0.008634
SS070	15150.373062	1.55	0.018	0.027576
SS094	23840.438858	0.16475	0.028	0.004612
SS101	29373.585660	1.01	0.034	0.034839
	851564.05	10.83	1.00	0.29

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1447	0.1396	0.1308	0.1455	0.1402	0.0068	0.0482
Max	0.5335	0.5180	0.5761	0.5579	0.5464	0.0258	0.0472
Average	0.2895	0.2902	0.2886	0.2893	0.2894	0.0007	0.0023
Std Dev	0.0572	0.0567	0.0567	0.0576	0.0571	0.0004	0.0071
1%	0.1784	0.1775	0.1782	0.1774	0.1779	0.0005	0.0029
5%	0.2040	0.2041	0.2020	0.2003	0.2026	0.0018	0.0089
10%	0.2183	0.2192	0.2205	0.2180	0.2190	0.0011	0.0051
15%	0.2306	0.2314	0.2315	0.2295	0.2307	0.0009	0.0041
20%	0.2396	0.2405	0.2407	0.2389	0.2399	0.0008	0.0035
25%	0.2483	0.2486	0.2489	0.2476	0.2483	0.0005	0.0022
30%	0.2554	0.2563	0.2569	0.2557	0.2561	0.0007	0.0026
35%	0.2637	0.2650	0.2633	0.2637	0.2639	0.0007	0.0028
40%	0.2704	0.2726	0.2700	0.2702	0.2708	0.0012	0.0045
45%	0.2778	0.2799	0.2762	0.2770	0.2778	0.0016	0.0057
50%	0.2860	0.2868	0.2837	0.2849	0.2854	0.0013	0.0047
55%	0.2931	0.2936	0.2907	0.2931	0.2926	0.0013	0.0045
60%	0.3011	0.3007	0.2981	0.3005	0.3001	0.0014	0.0045
65%	0.3088	0.3089	0.3055	0.3093	0.3081	0.0018	0.0057
70%	0.3171	0.3168	0.3154	0.3183	0.3169	0.0012	0.0037
75%	0.3263	0.3260	0.3241	0.3264	0.3257	0.0011	0.0033
80%	0.3362	0.3379	0.3352	0.3372	0.3366	0.0012	0.0035
85%	0.3479	0.3502	0.3476	0.3488	0.3486	0.0012	0.0033
90%	0.3657	0.3673	0.3620	0.3651	0.3650	0.0022	0.0061
95%	0.3905	0.3907	0.3875	0.3913	0.3900	0.0017	0.0043
97%	0.4048	0.4062	0.4058	0.4074	0.4060	0.0011	0.0026
99%	0.4431	0.4308	0.4458	0.4373	0.4393	0.0066	0.0151
Kurtosis	0.20	-0.04	0.52	0.03	0.18	0.25	
Skewness	0.45	0.37	0.52	0.39	0.43	0.07	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
NL	13648.423873	250	0.016	4.006869
PL	7972.722207	2.05	0.009	0.019193
SS005	18586.086007	0.4845	0.022	0.010575
SS006	24646.956235	0.135	0.029	0.003907
SS007	24788.079546	0.04525	0.029	0.001317
SS008	22.071339	0.0315	0.000	0.000001
SS013	13108.100078	0.0435	0.015	0.000670
SS014	44969.460629	0.12	0.053	0.006337
SS015	44979.531616	0.129	0.053	0.006814
SS016	23233.707778	0.064	0.027	0.001746
SS022	1999.677816	0.0002725	0.002	0.000001
SS023	54485.706600	0.0745	0.064	0.004767
SS024	42022.430629	0.034	0.049	0.001678
SS025	43796.757290	0.039	0.051	0.002006
SS026	565.234353	0.026	0.001	0.000017
SS030	33689.532647	0.0865	0.040	0.003422
SS031	37566.187193	0.0243	0.044	0.001072
SS032	27481.386884	0.0565	0.032	0.001823
SS033	6973.361334	0.0002725	0.008	0.000002
SS040	2944.948959	0.465	0.003	0.001608
SS041	48178.807350	0.16	0.057	0.009052
SS042	18282.485388	0.1525	0.021	0.003274
SS043	17422.394552	0.08225	0.020	0.001683
SS044	26953.028808	0.745	0.032	0.023580
SS045	64410.783757	0.0215	0.076	0.001626
SS046	39845.121367	0.002925	0.047	0.000137
SS047	10359.237848	0.02	0.012	0.000243
SS049	4705.608709	0.049	0.006	0.000271
SS050	4538.327841	0.0385	0.005	0.000205
SS051	5775.898326	0.0565	0.007	0.000383
SS052	13334.121816	0.056	0.016	0.000877
SS068	17100.217060	0.079	0.020	0.001586
SS069	52995.036228	0.0495	0.062	0.003081
SS070	15150.373062	0.2925	0.018	0.005204
SS094	23840.438858	0.049	0.028	0.001372
SS101	21191.807075	0.49	0.025	0.012194
	851,564.05	256.25	1.00	4.14

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0516	0.0492	0.0523	0.0513	0.0511	0.0013	0.0262
Max	34.8506	34.8057	34.8134	27.9800	33.1124	3.4217	0.1033
Average	4.0867	4.1598	4.0927	4.1730	4.1280	0.0447	0.0108
Std Dev	5.1754	5.2192	5.1867	5.3306	5.2280	0.0709	0.0136
1%	0.0727	0.0710	0.0710	0.0694	0.0710	0.0013	0.0187
5%	0.0871	0.0871	0.0862	0.0853	0.0864	0.0009	0.0103
10%	0.0971	0.0978	0.0973	0.0958	0.0970	0.0009	0.0088
15%	0.1060	0.1058	0.1053	0.1046	0.1054	0.0006	0.0061
20%	0.1144	0.1139	0.1133	0.1127	0.1136	0.0007	0.0065
25%	0.1221	0.1213	0.1209	0.1211	0.1214	0.0005	0.0042
30%	0.1303	0.1305	0.1302	0.1292	0.1300	0.0006	0.0044
35%	0.1401	0.1410	0.1390	0.1407	0.1402	0.0009	0.0064
40%	0.1509	0.1530	0.1512	0.1517	0.1517	0.0009	0.0062
45%	0.1652	0.1669	0.1664	0.1663	0.1662	0.0007	0.0042
50%	0.1841	0.1889	0.1862	0.1860	0.1863	0.0020	0.0106
55%	0.2275	0.2589	0.2334	0.2343	0.2385	0.0139	0.0584
60%	7.0315	7.0345	7.0317	7.0315	7.0323	0.0015	0.0002
65%	7.0460	7.0495	7.0468	7.0466	7.0472	0.0016	0.0002
70%	7.0596	7.0611	7.0606	7.0600	7.0603	0.0007	0.0001
75%	7.0741	7.0759	7.0758	7.0754	7.0753	0.0008	0.0001
80%	7.0929	7.0952	7.0945	7.0949	7.0944	0.0010	0.0001
85%	7.1243	7.1262	7.1225	7.1271	7.1250	0.0021	0.0003
90%	13.9701	13.9769	13.9716	13.9847	13.9758	0.0066	0.0005
95%	14.0216	14.0304	14.0296	14.0392	14.0302	0.0072	0.0005
97%	14.0517	14.0687	14.0703	14.0831	14.0685	0.0129	0.0009
99%	20.9529	20.9582	20.9522	20.9522	20.9539	0.0029	0.0001
Kurtosis	1.70	1.41	1.45	1.29	1.46	0.17	
Skewness	1.29	1.25	1.27	1.27	1.27	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
NL	13648.423873	68	0.016	1.089868
PL	7972.722207	10.5	0.009	0.098306
SS005	18586.086007	0.345	0.022	0.007530
SS006	24646.956235	0.1245	0.029	0.003603
SS007	24788.079546	0.02925	0.029	0.000851
SS008	22.071339	0.012	0.000	0.000000
SS013	13108.100078	0.032	0.015	0.000493
SS014	44969.460629	0.135	0.053	0.007129
SS015	44979.531616	0.112	0.053	0.005916
SS016	23233.707778	0.053	0.027	0.001446
SS022	1999.677816	0.000825	0.002	0.000002
SS023	54485.706600	0.05925	0.064	0.003791
SS024	42022.430629	0.0335	0.049	0.001653
SS025	43796.757290	0.029	0.051	0.001491
SS026	565.234353	0.0535	0.001	0.000036
SS030	33689.532647	0.054	0.040	0.002136
SS031	37566.187193	0.01535	0.044	0.000677
SS032	27481.386884	0.041	0.032	0.001323
SS033	6973.361334	0.0008	0.008	0.000007
SS040	2944.948959	0.38	0.003	0.001314
SS041	48178.807350	0.1115	0.057	0.006308
SS042	18282.485388	0.121	0.021	0.002598
SS043	17422.394552	0.07	0.020	0.001432
SS044	26953.028808	0.42	0.032	0.013294
SS045	64410.783757	0.01375	0.076	0.001040
SS046	39845.121367	0.00875	0.047	0.000409
SS047	10359.237848	0.0064	0.012	0.000078
SS049	4705.608709	0.0375	0.006	0.000207
SS050	4538.327841	0.0295	0.005	0.000157
SS051	5775.898326	0.0395	0.007	0.000268
SS052	13334.121816	0.073	0.016	0.001143
SS068	17100.217060	0.073	0.020	0.001466
SS069	52995.036228	0.0295	0.062	0.001836
SS070	15150.373062	0.18	0.018	0.003202
SS094	23840.438858	0.03775	0.028	0.001057
SS101	21191.807075	0.28	0.025	0.006968
	851,564.05	81.54	1.00	1.27

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0371	0.0401	0.0395	0.0385	0.0388	0.0013	0.0341
Max	7.9157	9.8074	9.4932	9.5341	9.1876	0.8593	0.0935
Average	1.2533	1.2896	1.2759	1.2635	1.2706	0.0157	0.0124
Std Dev	1.4113	1.4538	1.4283	1.4132	1.4266	0.0196	0.0137
1%	0.0561	0.0567	0.0554	0.0560	0.0560	0.0006	0.0099
5%	0.0647	0.0648	0.0661	0.0661	0.0654	0.0008	0.0117
10%	0.0714	0.0718	0.0725	0.0727	0.0721	0.0006	0.0085
15%	0.0766	0.0776	0.0776	0.0778	0.0774	0.0005	0.0070
20%	0.0822	0.0824	0.0827	0.0826	0.0825	0.0002	0.0027
25%	0.0866	0.0876	0.0879	0.0876	0.0874	0.0006	0.0064
30%	0.0918	0.0939	0.0938	0.0934	0.0932	0.0010	0.0105
35%	0.0995	0.1031	0.1026	0.1017	0.1017	0.0016	0.0155
40%	0.1207	0.3467	0.3511	0.3492	0.2919	0.1142	0.3911
45%	0.3650	0.3669	0.3694	0.3667	0.3670	0.0018	0.0049
50%	0.3825	0.3844	0.3841	0.3825	0.3834	0.0010	0.0026
55%	0.6678	0.6886	0.6779	0.6660	0.6751	0.0104	0.0154
60%	1.9531	1.9560	1.9560	1.9556	1.9552	0.0014	0.0007
65%	1.9625	1.9648	1.9649	1.9640	1.9641	0.0011	0.0006
70%	1.9708	1.9733	1.9730	1.9718	1.9722	0.0011	0.0006
75%	1.9803	1.9841	1.9834	1.9819	1.9824	0.0017	0.0009
80%	2.2329	2.2407	2.2406	2.2368	2.2378	0.0037	0.0017
85%	2.2646	2.2681	2.2658	2.2643	2.2657	0.0017	0.0008
90%	3.8391	3.8461	3.8427	3.8424	3.8426	0.0028	0.0007
95%	3.8802	4.1129	3.8818	3.8762	3.9378	0.1168	0.0297
97%	4.1496	4.1588	4.1539	4.1505	4.1532	0.0042	0.0010
99%	5.7538	5.7616	5.7514	5.7511	5.7545	0.0049	0.0009
Kurtosis	1.18	1.79	1.53	1.33	1.45	0.26	
Skewness	1.21	1.29	1.26	1.22	1.24	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
GA-SOIL-037	15017.057599	0.7	0.018	0.012344
NL	13648.423873	240	0.016	3.846595
PL	7972.722207	2.05	0.009	0.019193
SS005	18586.086007	0.31	0.022	0.006766
SS006	21745.340887	0.52	0.026	0.013279
SS007	19611.806402	0.3575	0.023	0.008233
SS008	22.071339	0.53	0.000	0.000014
SS013	13108.100078	0.5	0.015	0.007696
SS014	44969.460629	0.295	0.053	0.015578
SS015	38040.362651	0.23	0.045	0.010274
SS016	23233.707778	0.685	0.027	0.018689
SS022	1999.677816	0.01685	0.002	0.000040
SS023	54485.706600	0.8675	0.064	0.055505
SS024	42022.430629	0.000375	0.049	0.000019
SS025	43796.757290	4.6	0.051	0.236582
SS026	565.234353	1.525	0.001	0.001012
SS030	33689.532647	0.0037	0.040	0.000146
SS031	37566.187193	0.19785	0.044	0.008728
SS032	27481.386884	1.85	0.032	0.059703
SS033	6973.361334	0.0003725	0.008	0.000003
SS040	2944.948959	4.85	0.003	0.016773
SS041	48178.807350	0.355	0.057	0.020085
SS042	18282.485388	0.36	0.021	0.007729
SS043	17422.394552	0.69	0.020	0.014117
SS044	26953.028808	4	0.032	0.126605
SS045	64410.783757	0.22	0.076	0.016640
SS046	39845.121367	1.185	0.047	0.055447
SS047	10359.237848	0.3025	0.012	0.003680
SS049	4705.608709	0.185	0.006	0.001022
SS050	4538.327841	0.33	0.005	0.001759
SS051	5775.898326	1.35	0.007	0.009157
SS052	13334.121816	1.25	0.016	0.019573
SS068	17100.217060	2.4	0.020	0.048194
SS069	52995.036228	0.03225	0.062	0.002007
SS070	15150.373062	5.35	0.018	0.095183
SS094	23840.438858	0.4625	0.028	0.012948
SS101	21191.807075	3.1	0.025	0.077146
	851564.05	281.66	1.00	4.85

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.4298	0.3974	0.3988	0.3878	0.4034	0.0182	0.0452
Max	33.2702	39.9463	27.0849	27.2407	31.8855	6.0968	0.1912
Average	4.9692	4.7430	4.7245	4.8319	4.8171	0.1117	0.0232
Std Dev	4.9818	4.8966	4.7913	4.9914	4.9153	0.0930	0.0189
1%	0.5933	0.6011	0.5758	0.5912	0.5903	0.0106	0.0179
5%	0.7252	0.7207	0.7180	0.7220	0.7214	0.0030	0.0042
10%	0.8138	0.8022	0.8025	0.8122	0.8077	0.0062	0.0077
15%	0.8732	0.8675	0.8629	0.8699	0.8684	0.0043	0.0050
20%	0.9327	0.9234	0.9196	0.9259	0.9254	0.0055	0.0060
25%	0.9877	0.9736	0.9783	0.9778	0.9793	0.0060	0.0061
30%	1.0393	1.0286	1.0288	1.0266	1.0308	0.0057	0.0055
35%	1.0964	1.0861	1.0814	1.0792	1.0858	0.0077	0.0071
40%	1.1644	1.1439	1.1442	1.1348	1.1468	0.0125	0.0109
45%	1.2406	1.2139	1.2185	1.2200	1.2233	0.0119	0.0097
50%	1.3771	1.3046	1.3026	1.3220	1.3266	0.0348	0.0262
55%	7.0896	1.5111	1.5803	1.6065	2.9469	2.7621	0.9373
60%	7.2822	7.2140	7.2261	7.2453	7.2419	0.0298	0.0041
65%	7.3757	7.3383	7.3419	7.3484	7.3511	0.0170	0.0023
70%	7.4548	7.4255	7.4294	7.4404	7.4375	0.0131	0.0018
75%	7.5383	7.5177	7.5173	7.5169	7.5225	0.0105	0.0014
80%	7.6483	7.6231	7.6042	7.6184	7.6235	0.0184	0.0024
85%	7.8125	7.7769	7.7475	7.7739	7.7777	0.0267	0.0034
90%	13.7677	13.7206	13.6643	13.7416	13.7236	0.0440	0.0032
95%	14.0575	14.0247	13.9989	14.0520	14.0333	0.0270	0.0019
97%	14.2403	14.2042	14.1840	14.2560	14.2211	0.0329	0.0023
99%	20.4579	20.4436	20.3263	20.5170	20.4362	0.0799	0.0039
Kurtosis	1.38	1.78	1.17	1.59	1.48	0.26	
Skewness	1.21	1.30	1.20	1.31	1.26	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Western Active Area 0 to 6 Inch Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
GA-SOIL-037	38687.111429	0.00134668	0.045	0.000061
NL	18733.327163	0.002452535	0.022	0.000054
PL	19580.284937	0.000574223	0.023	0.000013
SS005	51153.885112	0.000484775	0.060	0.000029
SS006	34790.530152	0.000827608	0.041	0.000034
SS007	46526.001228	0.00032301	0.055	0.000018
SS022	26097.564754	3.7241E-05	0.031	0.000001
SS024	96396.231773	0.000225046	0.113	0.000025
SS026	54302.458919	0.001290781	0.064	0.000082
SS041	91826.950197	0.001114581	0.108	0.000120
SS043	33143.604995	0.000226308	0.039	0.000009
SS044	89727.583434	0.007128588	0.105	0.000751
SS046	84568.968975	0.0009858	0.099	0.000098
SS068	51387.361267	0.004206603	0.060	0.000254
SS070	34554.066183	0.01133734	0.041	0.000460
SS094	40212.616432	0.000494145	0.047	0.000023
SS101	39875.503526	0.012337787	0.047	0.000578
	851,564.05	0.05	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0662
Max	0.0063	0.0067	0.0062	0.0065	0.0064	0.0003	0.0390
Average	0.0027	0.0026	0.0026	0.0026	0.0026	0.0000	0.0079
Std Dev	0.0009	0.0009	0.0008	0.0008	0.0009	0.0000	0.0064
1%	0.0010	0.0009	0.0010	0.0010	0.0010	0.0000	0.0483
5%	0.0014	0.0013	0.0013	0.0014	0.0013	0.0000	0.0106
10%	0.0016	0.0016	0.0016	0.0016	0.0016	0.0000	0.0085
15%	0.0018	0.0017	0.0018	0.0017	0.0018	0.0000	0.0085
20%	0.0019	0.0019	0.0019	0.0019	0.0019	0.0000	0.0120
25%	0.0021	0.0020	0.0020	0.0020	0.0020	0.0000	0.0113
30%	0.0022	0.0021	0.0021	0.0021	0.0022	0.0000	0.0077
35%	0.0023	0.0023	0.0023	0.0023	0.0023	0.0000	0.0065
40%	0.0024	0.0024	0.0024	0.0024	0.0024	0.0000	0.0065
45%	0.0025	0.0025	0.0025	0.0025	0.0025	0.0000	0.0052
50%	0.0026	0.0026	0.0026	0.0026	0.0026	0.0000	0.0077
55%	0.0027	0.0027	0.0027	0.0027	0.0027	0.0000	0.0071
60%	0.0028	0.0028	0.0028	0.0028	0.0028	0.0000	0.0072
65%	0.0030	0.0029	0.0029	0.0029	0.0029	0.0000	0.0080
70%	0.0031	0.0031	0.0030	0.0031	0.0031	0.0000	0.0087
75%	0.0033	0.0032	0.0032	0.0032	0.0032	0.0000	0.0120
80%	0.0034	0.0033	0.0033	0.0034	0.0034	0.0000	0.0124
85%	0.0036	0.0035	0.0035	0.0035	0.0035	0.0000	0.0081
90%	0.0038	0.0038	0.0038	0.0038	0.0038	0.0000	0.0066
95%	0.0042	0.0041	0.0041	0.0041	0.0041	0.0000	0.0085
97%	0.0045	0.0043	0.0044	0.0043	0.0044	0.0001	0.0118
99%	0.0048	0.0048	0.0049	0.0048	0.0048	0.0000	0.0063
Kurtosis	0.01	0.07	0.19	-0.02	0.06	0.09	
Skewness	0.37	0.36	0.42	0.38	0.38	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	1.9	0.016	0.029963
SD002	493.20651	13	0.147	1.908747
SD003	521.04496	160	0.155	24.818266
SD004	293.37739	22	0.087	1.921434
SD005	407.31919	390	0.121	47.290699
SD006	447.33690	245	0.133	32.626994
SD007	650.68497	120	0.194	23.244932
SD008	445.63233	18	0.133	2.387951
SD009	47.53159	31	0.014	0.438652
	3,359.11	1,000.90	1.00	134.67

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	16.1111	27.1111	26.2111	17.3222	21.6889	5.7744	0.2662
Max	292.7778	283.8889	313.8889	299.7778	297.5833	12.6665	0.0426
Average	138.3167	137.3919	137.3291	138.4139	137.8629	0.5820	0.0042
Std Dev	41.7885	41.8534	41.6781	41.8640	41.7960	0.0854	0.0020
1%	52.6643	50.6633	52.6534	52.3289	52.0775	0.9555	0.0183
5%	74.1111	71.1111	71.8622	72.8889	72.4933	1.3016	0.0180
10%	85.4444	83.7778	83.8889	85.3333	84.6111	0.9004	0.0106
15%	95.3333	93.3333	93.3333	94.9889	94.2472	1.0646	0.0113
20%	102.6667	100.5089	99.8667	102.6667	101.4272	1.4550	0.0143
25%	108.6667	107.6667	107.7778	109.3222	108.3583	0.7831	0.0072
30%	113.4411	113.4411	113.8889	114.4444	113.8039	0.4764	0.0042
35%	119.8889	119.8889	120.5167	120.6667	120.2403	0.4103	0.0034
40%	124.7333	124.7267	125.1778	124.7778	124.8539	0.2171	0.0017
45%	130.5506	130.2222	131.1061	130.3333	130.5531	0.3931	0.0030
50%	135.8889	136.1667	135.8278	136.2111	136.0236	0.1933	0.0014
55%	141.1050	141.4444	140.1561	140.7167	140.8556	0.5530	0.0039
60%	147.6667	147.7778	146.8889	147.4444	147.4444	0.3954	0.0027
65%	152.8889	152.8889	152.1461	152.9239	152.7119	0.3776	0.0025
70%	159.3333	158.7778	158.2889	160.8889	159.3222	1.1282	0.0071
75%	165.6667	164.7778	164.8889	166.4361	165.4424	0.7716	0.0047
80%	173.1111	172.6667	172.3333	174.5556	173.1667	0.9792	0.0057
85%	182.0000	180.3333	180.3500	182.5556	181.3097	1.1406	0.0063
90%	193.6667	191.8989	192.8889	193.7778	193.0581	0.8681	0.0045
95%	210.0000	207.2389	208.3667	209.7778	208.8458	1.2926	0.0062
97%	223.7778	220.4578	219.0000	219.5589	220.6986	2.1388	0.0097
99%	242.2422	242.2332	240.0100	242.2245	241.6775	1.1117	0.0046
Kurtosis	-0.04	-0.12	-0.09	-0.03	-0.07	0.04	
Skewness	0.30	0.23	0.26	0.26	0.26	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	Chromium (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	9.15	0.016	0.144294
SD002	493.20651	56	0.147	8.222296
SD003	521.04496	500	0.155	77.557082
SD004	293.37739	57	0.087	4.978262
SD005	407.31919	570	0.121	69.117176
SD006	447.33690	395	0.133	52.602705
SD007	650.68497	220	0.194	42.615708
SD008	445.63233	22	0.133	2.918607
SD009	47.53159	47	0.014	0.665053
	3,359.11	1,876.15	1.00	258.82

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	59.8889	39.4611	41.0000	35.7944	44.0361	10.7917	0.2451
Max	523.3333	489.5555	535.0000	511.6667	514.8889	19.3901	0.0377
Average	263.1179	264.8427	263.4793	264.0593	263.8748	0.7528	0.0029
Std Dev	69.0858	68.8685	69.7534	69.6180	69.3314	0.4222	0.0061
1%	108.4444	113.8879	108.3244	109.4652	110.0305	2.6221	0.0238
5%	152.6667	153.6167	150.0000	151.4342	151.9294	1.5661	0.0103
10%	175.8778	176.0000	174.2817	173.4444	174.9010	1.2473	0.0071
15%	191.3333	192.7919	190.3333	190.1253	191.1460	1.2174	0.0064
20%	203.0000	205.7944	203.1111	203.1111	203.7542	1.3612	0.0067
25%	213.6667	216.0167	216.0000	214.7778	215.1153	1.1266	0.0052
30%	225.0117	226.3333	226.3333	226.4444	226.0307	0.6814	0.0030
35%	233.1111	235.5556	235.5722	235.6667	234.9764	1.2445	0.0053
40%	243.2222	244.6667	244.6667	244.7778	244.3333	0.7426	0.0030
45%	252.5556	254.7778	253.6833	254.7944	253.9528	1.0667	0.0042
50%	262.6667	263.9444	262.6194	263.5000	263.1826	0.6492	0.0025
55%	271.7778	273.7333	270.5555	273.1111	272.2944	1.4175	0.0052
60%	280.8889	283.5555	280.8889	282.1278	281.8653	1.2692	0.0045
65%	289.8889	292.6667	289.8889	292.4445	291.2222	1.5423	0.0053
70%	300.3333	301.6667	299.1111	301.6667	300.6944	1.2285	0.0041
75%	310.6667	312.0000	309.4445	312.1111	311.0556	1.2587	0.0040
80%	323.5555	322.5778	323.5555	325.0000	323.6722	0.9980	0.0031
85%	335.7833	336.5864	339.1111	339.2222	337.6758	1.7531	0.0052
90%	353.6667	353.4461	355.0000	354.8889	354.2504	0.8077	0.0023
95%	378.1111	381.8889	378.2222	378.1111	379.0833	1.8711	0.0049
97%	393.5555	397.5555	396.2256	392.3333	394.9175	2.3947	0.0061
99%	423.4445	422.2345	427.3333	419.5567	423.1422	3.2320	0.0076
Kurtosis	-0.21	-0.22	-0.15	-0.27	-0.21	0.05	
Skewness	0.09	0.08	0.08	0.02	0.07	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	Lead (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	116	0.016	1.829297
SD002	493.20651	280	0.147	41.111478
SD003	521.04496	430	0.155	66.699090
SD004	293.37739	42	0.087	3.668193
SD005	407.31919	75	0.121	9.094365
SD006	447.33690	55	0.133	7.324427
SD007	650.68497	41	0.194	7.942018
SD008	445.63233	6.5	0.133	0.862316
SD009	47.53159	12	0.014	0.169801
	3,359.11	1,057.50	1.00	138.70

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	23.5000	22.4444	24.9444	22.0556	23.2361	1.2921	0.0556
Max	355.0000	340.5555	346.6667	370.1111	353.0833	12.8028	0.0363
Average	139.3344	138.7127	137.8907	140.1833	139.0303	0.9698	0.0070
Std Dev	50.1240	50.0239	50.3812	51.4017	50.4827	0.6309	0.0125
1%	40.1617	40.9433	38.5489	38.7778	39.6079	1.1403	0.0288
5%	63.6667	63.7778	61.3861	61.5528	62.5958	1.3032	0.0208
10%	76.6111	76.0500	74.9944	75.8167	75.8681	0.6711	0.0088
15%	85.8333	85.7222	85.1667	85.9444	85.6667	0.3455	0.0040
20%	93.8333	94.3889	93.3778	94.1667	93.9417	0.4398	0.0047
25%	104.0556	102.4861	101.2222	103.1111	102.7188	1.1881	0.0116
30%	110.8889	110.3556	109.3167	111.6667	110.5569	0.9867	0.0089
35%	116.3333	116.2583	115.9444	117.6111	116.5368	0.7357	0.0063
40%	122.8667	122.1667	121.4444	123.8889	122.5917	1.0417	0.0085
45%	129.7222	128.7333	128.6528	130.4444	129.3882	0.8558	0.0066
50%	136.1111	135.0556	135.1667	136.7222	135.7639	0.7953	0.0059
55%	143.4139	141.1667	141.3333	143.4139	142.3319	1.2512	0.0088
60%	150.9667	148.1111	148.7222	151.7222	149.8806	1.7363	0.0116
65%	157.0556	155.6111	155.6111	158.1361	156.6035	1.2279	0.0078
70%	163.2222	163.1111	162.0278	164.7778	163.2847	1.1318	0.0069
75%	172.1667	172.1111	170.2639	173.6250	172.0417	1.3769	0.0080
80%	181.3444	180.8333	179.3222	182.7333	181.0583	1.4086	0.0078
85%	192.6667	192.6667	190.2306	195.0556	192.6549	1.9698	0.0102
90%	206.2222	207.0556	204.1111	208.0556	206.3611	1.6768	0.0081
95%	226.8333	226.0417	224.5917	227.5556	226.2556	1.2699	0.0056
97%	240.3922	241.2239	240.5689	242.7994	241.2461	1.0956	0.0045
99%	266.9445	264.7283	268.5555	270.8900	267.7796	2.6003	0.0097
Kurtosis	-0.01	-0.15	0.01	-0.01	-0.04	0.07	
Skewness	0.36	0.36	0.36	0.35	0.36	0.01	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	0.029	0.016	0.000457
SD002	493.20651	0.14	0.147	0.020556
SD003	521.04496	0.5	0.155	0.077557
SD004	293.37739	0.18	0.087	0.015721
SD005	407.31919	1.6	0.121	0.194013
SD006	447.33690	0.85	0.133	0.113196
SD007	650.68497	0.7	0.194	0.135595
SD008	445.63233	0.087	0.133	0.011542
SD009	47.53159	0.16	0.014	0.002264
	3,359.11	4.25	1.00	0.57

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1421	0.1546	0.1591	0.1063	0.1405	0.0239	0.1701
Max	1.2486	1.2322	1.1500	1.3333	1.2410	0.0751	0.0606
Average	0.5835	0.5828	0.5854	0.5802	0.5830	0.0022	0.0037
Std Dev	0.1580	0.1578	0.1582	0.1577	0.1579	0.0002	0.0014
1%	0.2641	0.2560	0.2567	0.2587	0.2589	0.0037	0.0142
5%	0.3390	0.3393	0.3374	0.3360	0.3379	0.0015	0.0045
10%	0.3859	0.3837	0.3893	0.3819	0.3852	0.0032	0.0083
15%	0.4196	0.4194	0.4219	0.4179	0.4197	0.0017	0.0039
20%	0.4474	0.4449	0.4482	0.4446	0.4463	0.0018	0.0041
25%	0.4727	0.4711	0.4727	0.4697	0.4715	0.0014	0.0031
30%	0.4949	0.4937	0.4962	0.4943	0.4948	0.0011	0.0022
35%	0.5156	0.5149	0.5174	0.5129	0.5152	0.0019	0.0037
40%	0.5354	0.5382	0.5363	0.5338	0.5359	0.0019	0.0035
45%	0.5544	0.5576	0.5574	0.5549	0.5561	0.0017	0.0030
50%	0.5738	0.5767	0.5756	0.5738	0.5750	0.0014	0.0025
55%	0.5946	0.5960	0.5960	0.5926	0.5948	0.0016	0.0027
60%	0.6141	0.6133	0.6171	0.6133	0.6145	0.0018	0.0029
65%	0.6349	0.6361	0.6406	0.6349	0.6366	0.0027	0.0042
70%	0.6586	0.6574	0.6597	0.6551	0.6577	0.0020	0.0030
75%	0.6820	0.6852	0.6852	0.6808	0.6833	0.0023	0.0033
80%	0.7127	0.7122	0.7186	0.7078	0.7128	0.0044	0.0062
85%	0.7474	0.7478	0.7523	0.7408	0.7471	0.0047	0.0063
90%	0.7956	0.7911	0.8004	0.7819	0.7923	0.0079	0.0099
95%	0.8597	0.8519	0.8641	0.8430	0.8547	0.0093	0.0108
97%	0.9030	0.9005	0.9063	0.8944	0.9011	0.0050	0.0056
99%	0.9923	0.9945	0.9907	0.9922	0.9924	0.0016	0.0016
Kurtosis	0.07	0.08	-0.08	0.40	0.12	0.20	
Skewness	0.35	0.32	0.29	0.37	0.33	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	6.8476	0.016	0.107985
SD002	493.20651	18.682	0.147	2.743017
SD003	521.04496	13.0286	0.155	2.020920
SD004	293.37739	0.54833	0.087	0.047890
SD005	407.31919	5.7582	0.121	0.698229
SD006	447.33690	4.32265	0.133	0.575653
SD007	650.68497	5.484	0.194	1.062293
SD008	445.63233	4.169	0.133	0.553076
SD009	47.53159	6.7905	0.014	0.096086
	3,359.11	65.63	1.00	7.91

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	3.0762	3.2223	2.7230	2.6739	2.9238	0.2678	0.0916
Max	14.7029	14.7029	15.1514	15.3522	14.9774	0.3273	0.0219
Average	7.8634	7.9068	7.8599	7.8539	7.8710	0.0242	0.0031
Std Dev	1.8113	1.8543	1.8379	1.8452	1.8372	0.0185	0.0101
1%	4.0877	4.1577	4.1425	4.1432	4.1328	0.0309	0.0075
5%	4.9959	4.9637	4.9808	4.9979	4.9846	0.0159	0.0032
10%	5.5818	5.5439	5.5426	5.5416	5.5525	0.0195	0.0035
15%	5.9641	5.9481	5.8992	5.9297	5.9353	0.0279	0.0047
20%	6.2910	6.2711	6.2384	6.2555	6.2640	0.0224	0.0036
25%	6.5937	6.5757	6.5629	6.5440	6.5691	0.0209	0.0032
30%	6.8639	6.8495	6.8359	6.8039	6.8383	0.0256	0.0037
35%	7.0832	7.0941	7.0767	7.0315	7.0714	0.0275	0.0039
40%	7.3317	7.3653	7.3351	7.2773	7.3273	0.0366	0.0050
45%	7.5441	7.5943	7.5542	7.5082	7.5502	0.0354	0.0047
50%	7.7929	7.8436	7.7713	7.7139	7.7804	0.0537	0.0069
55%	8.0330	8.0767	7.9962	7.9393	8.0113	0.0582	0.0073
60%	8.2838	8.3321	8.2526	8.2193	8.2719	0.0480	0.0058
65%	8.5096	8.5723	8.5104	8.4755	8.5170	0.0403	0.0047
70%	8.7699	8.8505	8.7708	8.7860	8.7943	0.0382	0.0043
75%	9.0491	9.1579	9.0902	9.0646	9.0905	0.0481	0.0053
80%	9.3483	9.4770	9.3811	9.3973	9.4009	0.0546	0.0058
85%	9.7331	9.9097	9.8021	9.8462	9.8228	0.0743	0.0076
90%	10.1706	10.3479	10.2677	10.3155	10.2754	0.0772	0.0075
95%	10.9139	11.0152	10.9115	11.0756	10.9790	0.0805	0.0073
97%	11.4941	11.5241	11.4613	11.5716	11.5128	0.0468	0.0041
99%	12.4007	12.3489	12.4591	12.3982	12.4017	0.0451	0.0036
Kurtosis	0.03	-0.14	0.00	-0.06	-0.05	0.07	
Skewness	0.28	0.24	0.29	0.32	0.28	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	0.11	0.016	0.001735
SD002	493.20651	0.38	0.147	0.055794
SD003	521.04496	0.82	0.155	0.127194
SD004	293.37739	0.14	0.087	0.012227
SD005	407.31919	0.96	0.121	0.116408
SD006	447.33690	1.6	0.133	0.213074
SD007	650.68497	1	0.194	0.193708
SD008	445.63233	0.95	0.133	0.126031
SD009	47.53159	1.3	0.014	0.018395
	3,359.11	7.26	1.00	0.86

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.3878	0.3411	0.3722	0.3978	0.3747	0.0248	0.0661
Max	1.3411	1.3033	1.3211	1.3167	1.3206	0.0156	0.0118
Average	0.8662	0.8664	0.8665	0.8654	0.8661	0.0005	0.0006
Std Dev	0.1351	0.1334	0.1368	0.1357	0.1352	0.0014	0.0106
1%	0.5567	0.5578	0.5500	0.5478	0.5530	0.0049	0.0089
5%	0.6455	0.6533	0.6367	0.6378	0.6433	0.0077	0.0120
10%	0.6900	0.6944	0.6911	0.6867	0.6906	0.0032	0.0046
15%	0.7243	0.7267	0.7244	0.7222	0.7244	0.0018	0.0025
20%	0.7522	0.7533	0.7511	0.7533	0.7525	0.0011	0.0014
25%	0.7744	0.7744	0.7733	0.7756	0.7744	0.0009	0.0012
30%	0.7933	0.7944	0.7944	0.7967	0.7947	0.0014	0.0018
35%	0.8100	0.8133	0.8122	0.8156	0.8128	0.0023	0.0028
40%	0.8311	0.8311	0.8311	0.8322	0.8314	0.0006	0.0007
45%	0.8500	0.8489	0.8511	0.8500	0.8500	0.0009	0.0011
50%	0.8656	0.8667	0.8678	0.8667	0.8667	0.0009	0.0010
55%	0.8833	0.8822	0.8838	0.8833	0.8832	0.0007	0.0008
60%	0.9022	0.8989	0.9033	0.9000	0.9011	0.0020	0.0023
65%	0.9222	0.9193	0.9222	0.9189	0.9207	0.0018	0.0020
70%	0.9400	0.9381	0.9389	0.9370	0.9385	0.0013	0.0013
75%	0.9578	0.9544	0.9578	0.9556	0.9564	0.0017	0.0017
80%	0.9822	0.9789	0.9811	0.9789	0.9803	0.0017	0.0017
85%	1.0078	1.0078	1.0111	1.0067	1.0083	0.0019	0.0019
90%	1.0368	1.0357	1.0411	1.0378	1.0378	0.0023	0.0023
95%	1.0867	1.0889	1.0933	1.0878	1.0892	0.0029	0.0027
97%	1.1145	1.1167	1.1200	1.1145	1.1164	0.0026	0.0023
99%	1.1745	1.1700	1.1778	1.1800	1.1756	0.0044	0.0037
Kurtosis	-0.14	-0.12	-0.09	-0.08	-0.11	0.03	
Skewness	-0.02	0.01	-0.01	-0.02	-0.01	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Drainage Ditch 0 to 6 Inch Sediment

ThPolyID	Segment Length (ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
SD001	52.97243	5.67369E-05	0.016	0.000001
SD002	493.20651	0.000162247	0.147	0.000024
SD003	521.04496	0.000752033	0.155	0.000117
SD004	293.37739	0.000292983	0.087	0.000026
SD005	407.31919	0.001686579	0.121	0.000205
SD006	447.33690	0.002707296	0.133	0.000361
SD007	650.68497	0.000513724	0.194	0.000100
SD008	445.63233	0.000501019	0.133	0.000066
SD009	47.53159	0.001474056	0.014	0.000021
	3,359.11	0.01	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0003	0.0003	0.0003	0.0003	0.0003	0.0000	0.0102
Max	0.0022	0.0019	0.0022	0.0020	0.0021	0.0002	0.0798
Average	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0042
Std Dev	0.0003	0.0003	0.0003	0.0003	0.0003	0.0000	0.0148
1%	0.0004	0.0004	0.0004	0.0004	0.0004	0.0000	0.0174
5%	0.0005	0.0005	0.0005	0.0005	0.0005	0.0000	0.0181
10%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0082
15%	0.0006	0.0006	0.0006	0.0006	0.0006	0.0000	0.0041
20%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0034
25%	0.0007	0.0007	0.0007	0.0007	0.0007	0.0000	0.0036
30%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0019
35%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0014
40%	0.0008	0.0008	0.0008	0.0008	0.0008	0.0000	0.0021
45%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0035
50%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0026
55%	0.0009	0.0009	0.0009	0.0009	0.0009	0.0000	0.0044
60%	0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0044
65%	0.0010	0.0010	0.0010	0.0010	0.0010	0.0000	0.0048
70%	0.0010	0.0011	0.0010	0.0011	0.0010	0.0000	0.0066
75%	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0089
80%	0.0011	0.0011	0.0011	0.0012	0.0011	0.0000	0.0084
85%	0.0012	0.0012	0.0012	0.0012	0.0012	0.0000	0.0081
90%	0.0013	0.0013	0.0013	0.0013	0.0013	0.0000	0.0063
95%	0.0014	0.0014	0.0014	0.0014	0.0014	0.0000	0.0063
97%	0.0015	0.0015	0.0015	0.0015	0.0015	0.0000	0.0097
99%	0.0016	0.0016	0.0016	0.0016	0.0016	0.0000	0.0134
Kurtosis	0.04	0.03	0.21	-0.08	0.05	0.12	
Skewness	0.38	0.41	0.46	0.37	0.41	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Antimony Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Antimony (mg/kg)	% of Area	Weighted Avg
SS001	25418.94529	0.30125	0.007	0.002253
SS002	35691.37797	0.38	0.011	0.003990
SS003	37428.09461	0.185	0.011	0.002037
SS004	32569.59313	0.215	0.010	0.002060
SS005	26243.98561	0.17875	0.008	0.001380
SS006	24646.95624	0.175	0.007	0.001269
SS007	24788.07955	0.195	0.007	0.001422
SS008	26283.02726	0.175	0.008	0.001353
SS009	27942.57571	0.175	0.008	0.001439
SS010	44987.14444	2.525	0.013	0.033420
SS011	44985.82462	1.28	0.013	0.016941
SS012	44989.42087	0.995	0.013	0.013170
SS013	45001.8662	0.685	0.013	0.009069
SS014	44969.46063	0.675	0.013	0.008931
SS015	44979.53162	0.43	0.013	0.005690
SS016	44981.03583	0.18	0.013	0.002382
SS017	44798.37514	0.1775	0.013	0.002339
SS018	31703.76762	0.18	0.009	0.001679
SS019	30238.61668	0.175	0.009	0.001557
SS020	41769.97756	0.6825	0.012	0.008387
SS021	41915.66623	21	0.012	0.258974
SS022	56252.70658	0.22125	0.017	0.003662
SS023	54485.7066	0.1775	0.016	0.002845
SS024	42022.43063	0.1775	0.012	0.002195
SS025	43796.75729	0.435	0.013	0.005605
SS026	41192.24624	0.17375	0.012	0.002106
SS027	41072.50452	0.25	0.012	0.003021
SS028	24594.54276	0.17375	0.007	0.001257
SS029	33392.10298	0.1775	0.010	0.001744
SS030	33689.53265	0.34875	0.010	0.003457
SS031	37594.35888	0.17625	0.011	0.001949
SS032	35761.30671	106	0.011	1.115270
SS033	41704.18033	0.1775	0.012	0.002178
SS034	29977.86136	0.175	0.009	0.001543
SS035	20509.33762	0.655	0.006	0.003952
SS036	37690.06466	1.765	0.011	0.019572
SS037	17600.84045	1.65	0.005	0.008544
SS038	37399.55072	2.525	0.011	0.027784
SS039	36051.96541	0.52875	0.011	0.005608
SS040	64967.81685	5.9	0.019	0.112775
SS041	60317.71593	0.43625	0.018	0.007742
SS042	18282.48539	0.3475	0.005	0.001869
SS043	18095.8548	0.38	0.005	0.002023
SS044	28379.85497	0.645	0.008	0.005386
SS045	64410.78376	0.53	0.019	0.010044
SS046	53795.13163	0.17625	0.016	0.002790
SS047	29019.03336	0.18	0.009	0.001537
SS048	36980.18459	0.36625	0.011	0.003985
SS049	31962.86872	0.445	0.009	0.004185
SS050	22962.10462	1.83	0.007	0.012363
SS051	31681.11706	0.595	0.009	0.005546
SS052	35907.07926	0.27875	0.011	0.002945
SS054	27005.8435	1.675	0.008	0.013309
SS057	23684.94378	0.17	0.007	0.001185
SS058	40892.75825	1.85	0.012	0.022258
SS059	30610.85504	3.05	0.009	0.027469
SS060	49138.56862	1.8	0.014	0.026023
SS062	75396.23963	0.48625	0.022	0.010786
SS064	45745.51326	0.43125	0.013	0.005804
SS066	35406.19652	0.405	0.010	0.004219
SS067	60631.65369	2.775	0.018	0.049502
SS068	65814.66451	0.90875	0.019	0.017597
SS069	85900.32574	0.605	0.025	0.015290
SS070	53606.93651	0.3	0.016	0.004732
SS071	15258.22418	0.18	0.004	0.000808
SS072	22449.49319	0.46875	0.007	0.003096
SS073	36277.7988	4.5	0.011	0.048030
SS074	32138.57422	0.805	0.009	0.007612
SS075	18648.49523	5.47	0.005	0.030012
SS076	26621.33223	1	0.008	0.007832
SS077	19534.31339	0.17625	0.006	0.001013
SS078	20418.57794	0.175	0.006	0.001051
SS079	39554.34659	1.15	0.012	0.013383
SS080	11679.29592	0.235	0.003	0.000808
SS081	17233.39033	0.4025	0.005	0.002041
SS082	17020.32289	0.64875	0.005	0.003249
SS083	16372.16138	1.1	0.005	0.005299
SS084	23869.86934	0.1825	0.007	0.001282
SS085	40357.70732	1.28	0.012	0.015198
SS086	23258.04748	0.3525	0.007	0.002412
SS087	22447.91493	0.17	0.007	0.001123
SS088	35448.70895	0.56125	0.010	0.005854
SS089	25110.63681	1.7	0.007	0.012559
SS090	44026.61233	1.2	0.013	0.015544
SS091	51314.85984	1.79375	0.015	0.027081
SS092	53569.77669	1.85	0.016	0.029158
SS093	50604.52317	0.575	0.015	0.008561
SS094	23840.43886	0.17375	0.007	0.001219
SS095	30987.71936	99.075	0.009	0.903264
SS096	34257.36485	3.38875	0.010	0.034155
SS097	26231.42892	0.1825	0.008	0.001408
SS098	28107.6746	0.18125	0.008	0.001499
SS099	23405.40518	0.19625	0.007	0.001351
SS100	17769.14005	0.845	0.005	0.004418
SS101	29373.58566	0.4775	0.009	0.004127
	3398905.59	303.82	1.00	3.16

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.6183	0.6411	0.6155	0.5796	0.6136	0.0254	0.0414
Max	11.3574	9.5809	10.1025	10.8329	10.4684	0.7842	0.0749
Average	3.2532	3.2432	3.2401	3.2211	3.2394	0.0134	0.0041
Std Dev	1.4914	1.4927	1.4495	1.4833	1.4792	0.0203	0.0137
1%	0.8565	0.8396	0.8316	0.8409	0.8422	0.0104	0.0124
5%	1.0678	1.0633	1.0786	1.0579	1.0669	0.0088	0.0082
10%	1.3334	1.3168	1.3250	1.2818	1.3143	0.0227	0.0173
15%	1.8851	1.8712	1.8723	1.8003	1.8572	0.0385	0.0207
20%	2.0452	2.0448	2.0509	2.0348	2.0439	0.0067	0.0033
25%	2.1647	2.1413	2.1760	2.1510	2.1583	0.0153	0.0071
30%	2.2841	2.2524	2.2935	2.2653	2.2738	0.0185	0.0081
35%	2.4184	2.3742	2.4400	2.4025	2.4088	0.0277	0.0115
40%	2.6512	2.5738	2.7272	2.6230	2.6438	0.0642	0.0243
45%	2.9999	2.9840	3.0313	2.9990	3.0036	0.0199	0.0066
50%	3.1428	3.1291	3.1538	3.1489	3.1437	0.0107	0.0034
55%	3.2685	3.2631	3.2715	3.2568	3.2650	0.0064	0.0020
60%	3.3886	3.3987	3.4037	3.3760	3.3918	0.0122	0.0036
65%	3.5741	3.5734	3.5815	3.5264	3.5639	0.0253	0.0071
70%	3.9796	4.0234	4.0059	3.8666	3.9689	0.0705	0.0178
75%	4.2284	4.2414	4.2390	4.2004	4.2273	0.0188	0.0044
80%	4.4314	4.4272	4.4089	4.3990	4.4166	0.0153	0.0035
85%	4.7060	4.7483	4.6367	4.6556	4.6867	0.0504	0.0108
90%	5.3206	5.3389	5.2523	5.2936	5.3014	0.0376	0.0071
95%	6.0170	6.0160	5.7454	5.8611	5.9099	0.1318	0.0223
97%	6.4997	6.4522	6.4170	6.4808	6.4624	0.0361	0.0056
99%	7.4275	7.4551	7.2954	7.4510	7.4072	0.0756	0.0102
Kurtosis	0.63	0.26	0.30	0.48	0.42	0.17	
Skewness	0.72	0.66	0.60	0.69	0.67	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Arsenic Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Arsenic (mg/kg)	% of Area	Weighted Avg
B1	13989.07317	7.2	0.004	0.029633
B3	11857.58262	8.1	0.003	0.028258
B4	14672.6484	11	0.004	0.047486
B5	20989.42821	3.1	0.006	0.019144
GA-SOIL-034	15095.6102	10	0.004	0.044413
GA-SOIL-035	16607.0695	30.3	0.005	0.148046
GA-SOIL-036	23561.84603	10	0.007	0.069322
GA-SOIL-037	15017.51629	10	0.004	0.044183
GA-SOIL-038	15343.86327	10	0.005	0.045144
SS001	21720.8328	56.9	0.006	0.363622
SS002	21287.95069	5.95	0.006	0.037266
SS003	30957.72509	12.475	0.009	0.113624
SS004	12645.49602	5.375	0.004	0.019997
SS005	26243.98561	8.825	0.008	0.068141
SS006	21747.84771	17.5	0.006	0.111973
SS007	19608.2255	2.735	0.006	0.015778
SS008	26283.02726	4.75	0.008	0.036731
SS009	17570.65467	1.15	0.005	0.005945
SS010	41313.99873	9.65	0.012	0.117297
SS011	40869.24708	9.5	0.012	0.114230
SS012	42233.25367	37	0.012	0.459745
SS013	44834.28452	52	0.013	0.685922
SS014	44969.46063	117	0.013	1.547977
SS015	38040.97786	56	0.011	0.626759
SS016	44981.03583	17	0.013	0.224978
SS017	44798.37514	8.2	0.013	0.108078
SS018	26731.82539	2.7	0.008	0.021235
SS019	30006.23912	4.875	0.009	0.043038
SS020	41174.71474	33.3375	0.012	0.403854
SS021	39684.61871	1050	0.012	12.259490
SS022	56197.65946	1.64125	0.017	0.027137
SS023	54485.7066	15.75	0.016	0.252478
SS024	42022.43063	16.5525	0.012	0.204647
SS025	43796.75729	69	0.013	0.889103
SS026	41192.24624	71.985	0.012	0.872405
SS027	41072.50452	13.5	0.012	0.163135
SS028	15231.08133	1.80875	0.004	0.008105
SS029	33392.10298	1.94	0.010	0.019059
SS030	33689.53265	6.5025	0.010	0.064452
SS031	35730.66059	24.90125	0.011	0.261772
SS032	35761.30671	40.5	0.011	0.426117
SS033	41508.59154	56	0.012	0.683891
SS034	26449.04883	8.8	0.008	0.068478
SS035	18730.95125	3.855	0.006	0.021244
SS036	22688.00652	54.81125	0.007	0.365870
SS037	16315.33743	140	0.005	0.672024
SS038	36642.70606	174.875	0.011	1.885281
SS039	36051.96541	23.775	0.011	0.252180
SS040	64967.81685	275	0.019	5.256442
SS041	60317.71593	16.62875	0.018	0.295097
SS042	18282.48539	18.75	0.005	0.100855
SS043	18095.8548	17.5	0.005	0.093170
SS044	17815.25558	57	0.005	0.298764
SS045	64410.78376	41.25	0.019	0.781706
SS046	47843.38598	7.24875	0.014	0.102034
SS047	24706.10706	5.025	0.007	0.036526
SS048	24829.41406	14.97125	0.007	0.109367
SS049	31906.28909	28.175	0.009	0.264485
SS050	22962.10462	145	0.007	0.979582
SS051	31582.1521	60	0.009	0.557512
SS052	35907.07926	38	0.011	0.401444
SS054	24921.12047	22.25	0.007	0.163139
SS057	21950.86342	4.705	0.006	0.030386
SS058	14452.87988	149	0.004	0.633580
SS059	22394.97512	200	0.007	1.317776
SS060	48751.20535	180	0.014	2.581777
SS062	75396.23963	26.5175	0.022	0.588225
SS064	43062.15287	45.5375	0.013	0.576934
SS066	35406.19652	38.01375	0.010	0.395987
SS067	60631.65369	200	0.018	3.567716
SS068	65814.66451	95.4425	0.019	1.848100
SS069	85900.32574	20	0.025	0.505459
SS070	53606.93651	30.2	0.016	0.476309
SS071	15258.22418	5.35	0.004	0.024017
SS072	12870.03782	34.4725	0.004	0.130531
SS073	36165.8598	165	0.011	1.755673
SS074	32138.57422	82.5	0.009	0.780084
SS075	18351.04032	101.275	0.005	0.546794
SS076	20933.50195	125	0.006	0.769862
SS077	13054.98103	5.63	0.004	0.021624
SS078	20418.57794	2.43	0.006	0.014598
SS079	39554.34659	113	0.012	1.315024
SS080	11679.29592	1.7625	0.003	0.006056
SS081	13080.04213	12.4	0.004	0.047719
SS082	14403.89587	37.975	0.004	0.160931
SS083	15893.25933	45.5	0.005	0.212758
SS084	23869.86934	10.005	0.007	0.070263
SS085	40357.70732	94.5	0.012	1.122068
SS086	23258.04748	38.775	0.007	0.265330
SS087	22447.91493	17.5	0.007	0.115578
SS088	35448.70895	43.3225	0.010	0.451830
SS089	25110.63681	128	0.007	0.945646
SS090	44026.61233	79	0.013	1.023301
SS091	51314.85984	193.3	0.015	2.918340
SS092	53569.77669	130	0.016	2.048916
SS093	50604.52317	36.5	0.015	0.543429
SS094	23840.43886	15.825	0.007	0.110999
SS095	23365.1818	1257.5	0.007	8.644464
SS096	28838.09936	159.25	0.008	1.351161
SS097	18254.56533	1.26	0.005	0.006767
SS098	18316.82595	3.14	0.005	0.016922
SS099	13491.62384	5.0375	0.004	0.019996
SS100	17769.14005	103.90375	0.005	0.543198
SS101	28554.43218	28.65	0.008	0.240691
TP1	25141.75034	5.4	0.007	0.039944
TP10	13346.41611	32	0.004	0.125654
TP11	11720.60966	2.9	0.003	0.010000
TP12	11126.26873	2.1	0.003	0.006874
TP13	15204.55757	0.5	0.004	0.002237
TP4	5966.83009	4140	0.002	7.267833
TP8	23779.53411	3.5	0.007	0.024487
TP9	14666.35337	7.8	0.004	0.033657
	3398905.59	11347.00	1.00	80.70

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	37.6012	38.7257	37.8665	39.5992	38.4481	0.9051	0.0235
Max	182.2363	223.3080	205.2493	195.0424	201.4590	17.3438	0.0861
Average	81.4642	82.0080	81.4181	81.7333	81.6559	0.2728	0.0033
Std Dev	21.8994	22.2599	21.8038	22.0057	21.9922	0.1966	0.0089
1%	46.7607	46.7024	47.1440	46.8747	46.8705	0.1959	0.0042
5%	52.8727	53.3171	53.5968	53.3545	53.2853	0.3017	0.0057
10%	57.4094	57.8060	57.2421	57.9433	57.6002	0.3290	0.0057
15%	60.6026	60.9317	60.3562	61.2067	60.7743	0.3724	0.0061
20%	63.0863	63.4351	63.0249	63.7495	63.3240	0.3363	0.0053
25%	65.5456	65.8490	65.6799	66.0030	65.7694	0.1992	0.0030
30%	67.8951	68.2870	67.9632	68.2320	68.0943	0.1941	0.0028
35%	70.1018	70.8400	70.3098	70.4493	70.4252	0.3112	0.0044
40%	72.5115	73.0028	72.7039	72.6616	72.7200	0.2059	0.0028
45%	74.8063	75.2597	74.8673	74.7055	74.9097	0.2427	0.0032
50%	77.3444	77.5078	77.2716	77.0984	77.3055	0.1698	0.0022
55%	79.8386	80.3504	79.6587	79.9203	79.9420	0.2934	0.0037
60%	82.8620	82.8917	82.4427	82.8271	82.7559	0.2104	0.0025
65%	86.0781	85.8022	86.0847	85.7837	85.9372	0.1667	0.0019
70%	89.4546	89.4333	89.5531	89.3914	89.4581	0.0685	0.0008
75%	93.7421	94.2419	93.3709	93.2092	93.6410	0.4585	0.0049
80%	98.5128	100.0050	98.3662	98.3270	98.8027	0.8055	0.0082
85%	103.9816	105.3027	103.4521	104.7887	104.3813	0.8242	0.0079
90%	110.8958	112.7626	110.5044	112.7430	111.7264	1.1959	0.0107
95%	122.5123	123.9801	122.4181	124.9428	123.4633	1.2183	0.0099
97%	131.9580	132.1003	130.1690	132.9053	131.7831	1.1541	0.0088
99%	149.2611	149.1699	149.1523	148.3229	148.9765	0.4384	0.0029
Kurtosis	1.23	1.55	1.47	1.26	1.38	0.16	
Skewness	1.00	1.05	1.04	1.03	1.03	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Chromium Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Chromium (mg/kg)	% of Area	Weighted Avg
B1	13989.07317	100	0.004	0.411576
B3	11857.58262	12	0.003	0.041864
B4	14672.6484	33	0.004	0.142457
B5	20989.42821	8.4	0.006	0.051873
GA-SOIL-034	15095.6102	1.2	0.004	0.005330
GA-SOIL-035	16607.0695	22.7	0.005	0.110912
GA-SOIL-036	23561.84603	11.6	0.007	0.080413
GA-SOIL-037	15017.51629	13.7	0.004	0.060531
GA-SOIL-038	15343.86327	7	0.005	0.031600
SS001	21720.8328	4.75	0.006	0.030355
SS002	21287.95069	6	0.006	0.037579
SS003	30957.72509	7.6	0.009	0.069222
SS004	12645.49602	15.25	0.004	0.056737
SS005	26243.98561	9.6	0.008	0.074125
SS006	21747.84771	15.5	0.006	0.099177
SS007	19608.2255	5.3375	0.006	0.030792
SS008	26283.02726	4.8	0.008	0.037117
SS009	17570.65467	5.8	0.005	0.029983
SS010	41313.99873	12.05	0.012	0.146469
SS011	40869.24708	19	0.012	0.228461
SS012	42233.25367	29.75	0.012	0.369660
SS013	44834.28452	68.5	0.013	0.903570
SS014	44969.46063	57.5	0.013	0.760758
SS015	38040.97786	72.5	0.011	0.811429
SS016	44981.03583	18.5	0.013	0.244829
SS017	44798.37514	8.65	0.013	0.114009
SS018	26731.82539	5.3	0.008	0.041684
SS019	30006.23912	9.8	0.009	0.086516
SS020	41174.71474	79.875	0.012	0.967615
SS021	39684.61871	1800	0.012	21.016269
SS022	56197.65946	3.5525	0.017	0.058737
SS023	54485.7066	19.4	0.016	0.310989
SS024	42022.43063	20.225	0.012	0.250052
SS025	43796.75729	65.5	0.013	0.844003
SS026	41192.24624	7.3125	0.012	0.088622
SS027	41072.50452	21.5	0.012	0.259807
SS028	15231.08133	5.125	0.004	0.022966
SS029	33392.10298	10.55	0.010	0.103647
SS030	33689.53265	8.45	0.010	0.083755
SS031	35730.66059	19	0.011	0.199736
SS032	35761.30671	47.5	0.011	0.499767
SS033	41508.59154	3.95	0.012	0.048239
SS034	26449.04883	11.55	0.008	0.089878
SS035	18730.95125	9.725	0.006	0.053593
SS036	22688.00652	58.5	0.007	0.390493
SS037	16315.33743	94.5	0.005	0.453616
SS038	36642.70606	272	0.011	2.932360
SS039	36051.96541	44.975	0.011	0.477047
SS040	64967.81685	455	0.019	8.697022
SS041	60317.71593	28.275	0.018	0.501774
SS042	18282.48539	34.25	0.005	0.184228
SS043	18095.8548	23.75	0.005	0.126446
SS044	17815.25558	93	0.005	0.487457
SS045	64410.78376	5.225	0.019	0.099016
SS046	47843.38598	7.925	0.014	0.111553
SS047	24706.10706	5.4875	0.007	0.039888
SS048	24829.41406	22.35	0.007	0.163269
SS049	31906.28909	42.2	0.009	0.396141
SS050	22962.10462	220	0.007	1.486262
SS051	31582.1521	78.5	0.009	0.729411
SS052	35907.07926	60.45	0.011	0.638612
SS054	24921.12047	33.75	0.007	0.247458
SS057	21950.86342	13.0375	0.006	0.084199
SS058	14452.87988	199.5	0.004	0.848317
SS059	22394.97512	230	0.007	1.515442
SS060	48751.20535	215	0.014	3.083789
SS062	75396.23963	80.9875	0.022	1.796506
SS064	43062.15287	93.625	0.013	1.186174
SS066	35406.19652	28.125	0.010	0.292976
SS067	60631.65369	327.5	0.018	5.842135
SS068	65814.66451	128.175	0.019	2.481915
SS069	85900.32574	8.7	0.025	0.219875
SS070	53606.93651	23.625	0.016	0.372609
SS071	15258.22418	9.4	0.004	0.042198
SS072	12870.03782	42.2	0.004	0.159791
SS073	36165.8598	185	0.011	1.968482
SS074	32138.57422	105	0.009	0.992834
SS075	18351.04032	153.5	0.005	0.828762
SS076	20933.50195	230	0.006	1.416546
SS077	13054.98103	10.4	0.004	0.039946
SS078	20418.57794	10.5	0.006	0.063078
SS079	39554.34659	180	0.012	2.094728
SS080	11679.29592	6	0.003	0.020617
SS081	13080.04213	19.5	0.004	0.075042
SS082	14403.89587	9.525	0.004	0.040365
SS083	15893.25933	59.5	0.005	0.278222
SS084	23869.86934	10.625	0.007	0.074617
SS085	40357.70732	123	0.012	1.460470
SS086	23258.04748	41.95	0.007	0.287056
SS087	22447.91493	33	0.007	0.217947
SS088	35448.70895	62.075	0.010	0.647408
SS089	25110.63681	185	0.007	1.366754
SS090	44026.61233	110.25	0.013	1.428087
SS091	51314.85984	253.6	0.015	3.828717
SS092	53569.77669	215	0.016	3.388591
SS093	50604.52317	50.5	0.015	0.751868
SS094	23840.43886	22.35	0.007	0.156766
SS095	23365.1818	1502.5	0.007	10.328673
SS096	28838.09936	213.75	0.008	1.813567
SS097	18254.56533	4.55	0.005	0.024437
SS098	18316.82595	6.975	0.005	0.037589
SS099	13491.62384	9.925	0.004	0.039396
SS100	17769.14005	152.9875	0.005	0.799803
SS101	28554.43218	51.05	0.008	0.428874
TP1	25141.75034	6.2	0.007	0.045861
TP10	13346.41611	94	0.004	0.369108
TP11	11720.60966	3.7	0.003	0.012759
TP12	11126.26873	1.7	0.003	0.005565
TP13	15204.55757	2.7	0.004	0.012078
TP4	5966.83009	7051.5	0.002	12.379015
TP8	23779.53411	10.1	0.007	0.070662
TP9	14666.35337	19	0.004	0.081985
	3398905.59	16905.93	1.00	113.97

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	51.0789	48.5318	49.1998	44.3221	48.2831	2.8524	0.0591
Max	305.2939	335.2322	319.5698	325.7341	321.4575	12.5547	0.0391
Average	114.7744	115.6189	114.8749	115.1465	115.1037	0.3777	0.0033
Std Dev	34.9149	36.3101	35.2952	34.8044	35.3311	0.6857	0.0194
1%	60.5208	61.3365	61.2818	60.8948	61.0085	0.3800	0.0062
5%	70.6065	70.4020	70.8116	70.2909	70.5278	0.2300	0.0033
10%	77.5110	76.9986	77.3633	77.3949	77.3169	0.2215	0.0029
15%	82.1745	82.0979	82.4389	82.9573	82.4172	0.3886	0.0047
20%	86.1050	85.8801	86.3635	87.1500	86.3746	0.5533	0.0064
25%	89.9352	89.6225	89.6009	90.5719	89.9326	0.4527	0.0050
30%	93.0464	93.1894	93.2443	94.0074	93.3719	0.4318	0.0046
35%	96.5804	96.8885	96.6383	97.2818	96.8473	0.3190	0.0033
40%	100.4104	100.1911	100.2423	101.0200	100.4660	0.3811	0.0038
45%	103.8847	103.8928	103.7078	104.1204	103.9014	0.1691	0.0016
50%	107.6334	107.8591	107.3248	107.6537	107.6178	0.2203	0.0020
55%	111.4982	112.0751	111.3315	111.6020	111.6267	0.3190	0.0029
60%	115.8890	116.3913	115.5935	116.2163	116.0225	0.3537	0.0030
65%	120.5140	121.5849	119.7783	120.9825	120.7149	0.7629	0.0063
70%	126.7676	127.2886	125.8071	126.6765	126.6350	0.6143	0.0049
75%	132.9104	135.0100	132.2258	134.1194	133.5664	1.2406	0.0093
80%	141.0194	142.8211	140.8842	141.9241	141.6622	0.9000	0.0064
85%	151.6888	151.6806	151.6340	151.0895	151.5232	0.2902	0.0019
90%	163.3679	165.0851	164.2857	163.4073	164.0365	0.8175	0.0050
95%	180.3075	185.2445	184.1202	181.1110	182.6958	2.3622	0.0129
97%	195.2597	200.9613	196.0240	194.2685	196.6284	2.9767	0.0151
99%	220.2887	228.6817	226.6949	222.6915	224.5892	3.7982	0.0169
Kurtosis	1.67	1.98	1.80	1.74	1.80	0.13	
Skewness	1.11	1.19	1.16	1.11	1.14	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Copper Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Copper (mg/kg)	% of Area	Weighted Avg
B1	13989.07317	4.5	0.004	0.018521
B3	11857.58262	1.25	0.003	0.004361
B4	14672.6484	47	0.004	0.202893
B5	20989.42821	1.25	0.006	0.007719
SS001	25418.94529	2.23875	0.007	0.016743
SS002	35691.37797	6.9	0.011	0.072456
SS003	37428.09461	6.325	0.011	0.069650
SS004	32569.59313	10.225	0.010	0.097980
SS005	26243.98561	7.025	0.008	0.054242
SS006	24646.95624	15	0.007	0.108772
SS007	24788.07955	2.91	0.007	0.021223
SS008	26283.02726	4.5	0.008	0.034798
SS009	27942.57571	2.55	0.008	0.020964
SS010	44987.14444	30	0.013	0.397073
SS011	44985.82462	29	0.013	0.383826
SS012	44989.42087	31.5	0.013	0.416948
SS013	45001.8662	57	0.013	0.754686
SS014	44969.46063	59	0.013	0.780604
SS015	44979.53162	49	0.013	0.648443
SS016	44981.03583	15	0.013	0.198510
SS017	44798.37514	11.75	0.013	0.154868
SS018	31703.76762	5.1	0.009	0.047571
SS019	30006.23912	6.525	0.009	0.057604
SS020	41174.71474	15.4875	0.012	0.187617
SS021	39684.61871	770	0.012	8.990293
SS022	56252.70658	1.8	0.017	0.029790
SS023	54485.7066	17.5	0.016	0.280531
SS024	42022.43063	10.725	0.012	0.132599
SS025	43796.75729	55	0.013	0.708705
SS026	41192.24624	6.29625	0.012	0.076306
SS027	41072.50452	24	0.012	0.290017
SS028	15231.08133	1.6475	0.004	0.007383
SS029	33392.10298	1.83125	0.010	0.017991
SS030	33689.53265	9.0425	0.010	0.089628
SS031	35730.66059	12.25	0.011	0.128777
SS032	35761.30671	70	0.011	0.736499
SS033	41508.59154	1.1	0.012	0.013434
SS034	26449.04883	11.7	0.008	0.091045
SS035	18730.95125	11.9525	0.006	0.065869
SS036	22688.00652	26.8925	0.007	0.179510
SS037	16315.33743	126	0.005	0.604822
SS038	36642.70606	90.075	0.011	0.971075
SS039	36051.96541	16.475	0.011	0.174749
SS040	64967.81685	220	0.019	4.205153
SS041	60317.71593	14.21	0.018	0.252174
SS042	18282.48539	21.5	0.005	0.115647
SS043	18095.8548	14.75	0.005	0.078529
SS044	17815.25558	75.5	0.005	0.395731
SS045	64410.78376	16.805	0.019	0.318462
SS046	47843.38598	4.695	0.014	0.066087
SS047	24706.10706	1.755	0.007	0.012757
SS048	24829.41406	11.6625	0.007	0.085196
SS049	31906.28909	19.235	0.009	0.180563
SS050	22962.10462	100	0.007	0.675573
SS051	31582.1521	285	0.009	2.648180
SS052	35907.07926	35.575	0.011	0.375825
SS054	24921.12047	51.25	0.007	0.375770
SS057	21950.86342	3.4575	0.006	0.022329
SS058	14452.87988	185	0.004	0.786660
SS059	22394.97512	145	0.007	0.955387
SS060	48751.20535	110	0.014	1.577753
SS062	75396.23963	25.06	0.022	0.555894
SS064	43062.15287	31.8625	0.013	0.403679
SS066	35406.19652	12.45125	0.010	0.129704
SS067	60631.65369	173.75	0.018	3.099454
SS068	65814.66451	65.515	0.019	1.268599
SS069	85900.32574	6.55	0.025	0.165538
SS070	53606.93651	20.825	0.016	0.328448
SS071	15258.22418	13	0.004	0.058359
SS072	12870.03782	32.3	0.004	0.122305
SS073	36165.8598	225	0.011	2.394100
SS074	32138.57422	81	0.009	0.765901
SS075	18351.04032	103.2	0.005	0.557187
SS076	20933.50195	135	0.006	0.831451
SS077	13054.98103	9.25375	0.004	0.035543
SS078	20418.57794	2.17	0.006	0.013036
SS079	39554.34659	120	0.012	1.396485
SS080	11679.29592	4.5875	0.003	0.015764
SS081	13080.04213	13.1	0.004	0.050413
SS082	14403.89587	10.78875	0.004	0.045721
SS083	15893.25933	43	0.005	0.201068
SS084	23869.86934	2.88875	0.007	0.020287
SS085	40357.70732	80.5	0.012	0.955836
SS086	23258.04748	23.025	0.007	0.157556
SS087	22447.91493	17.5	0.007	0.115578
SS088	35448.70895	34.4	0.010	0.358773
SS089	25110.63681	116.5	0.007	0.860686
SS090	44026.61233	74.25	0.013	0.961773
SS091	51314.85984	141.525	0.015	2.136669
SS092	53569.77669	125	0.016	1.970111
SS093	50604.52317	25.15	0.015	0.374445
SS094	23840.43886	13.45	0.007	0.094340
SS095	23365.1818	606.55	0.007	4.169622
SS096	28838.09936	151.875	0.008	1.288587
SS097	18254.56533	7.3775	0.005	0.039622
SS098	18316.82595	4.325	0.005	0.023308
SS099	13491.62384	16.72	0.004	0.066368
SS100	17769.14005	75.9	0.005	0.396798
SS101	28554.43218	42.525	0.008	0.357255
TP1	25141.75034	11	0.007	0.081367
TP10	13346.41611	130	0.004	0.510468
TP11	11720.60966	1.25	0.003	0.004310
TP12	11126.26873	1.25	0.003	0.004092
TP13	15204.55757	1.25	0.004	0.005592
TP4	5966.83009	3100	0.002	5.442097
TP8	23779.53411	1.25	0.007	0.008745
TP9	14666.35337	23	0.004	0.099246
	3398905.59	8957.59	1.00	64.42

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	31.6688	31.6197	33.4683	29.7482	31.6262	1.5190	0.0480
Max	147.0663	172.7343	166.5233	161.1905	161.8786	10.9438	0.0676
Average	65.0088	64.9894	64.6567	65.3915	65.0116	0.3004	0.0046
Std Dev	15.8915	16.2010	16.0722	16.0377	16.0506	0.1272	0.0079
1%	39.6190	39.7098	39.3962	39.5447	39.5674	0.1326	0.0034
5%	44.6180	44.4904	44.4809	45.0865	44.6689	0.2853	0.0064
10%	47.5559	47.8201	47.5681	48.2052	47.7873	0.3040	0.0064
15%	50.0665	50.1670	49.9741	50.4145	50.1555	0.1898	0.0038
20%	52.0687	51.9088	51.6356	52.3491	51.9906	0.2985	0.0057
25%	53.7597	53.6384	53.3045	54.0779	53.6951	0.3196	0.0060
30%	55.2931	55.1987	54.8154	55.6499	55.2393	0.3429	0.0062
35%	56.8614	56.8301	56.3010	57.1343	56.7817	0.3484	0.0061
40%	58.5480	58.3061	57.9747	58.7431	58.3930	0.3312	0.0057
45%	60.2124	59.8099	59.6378	60.4867	60.0367	0.3847	0.0064
50%	61.7741	61.4175	61.2631	62.3358	61.6976	0.4762	0.0077
55%	63.6840	63.2143	62.9841	63.9691	63.4629	0.4458	0.0070
60%	65.5770	65.1134	64.9912	65.9469	65.4071	0.4395	0.0067
65%	67.7987	67.6739	67.1862	68.1861	67.7112	0.4124	0.0061
70%	70.1611	70.2995	69.6849	70.8187	70.2410	0.4665	0.0066
75%	73.3764	73.3406	72.8443	73.8510	73.3531	0.4113	0.0056
80%	77.0124	76.7800	76.5253	77.6691	76.9967	0.4904	0.0064
85%	81.8496	81.5490	81.3629	82.3032	81.7662	0.4104	0.0050
90%	87.0495	87.4341	86.8009	87.6568	87.2353	0.3831	0.0044
95%	95.1117	96.0732	95.9428	95.0268	95.5386	0.5457	0.0057
97%	101.2664	102.5538	101.4848	101.7469	101.7630	0.5627	0.0055
99%	113.8013	115.2849	115.1626	114.2523	114.6253	0.7169	0.0063
Kurtosis	1.43	1.89	1.61	1.77	1.67	0.20	
Skewness	1.05	1.15	1.12	1.09	1.10	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Lead Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Lead (mg/kg)	% of Area	Weighted Avg
SS001	25418.94529	14.1	0.007	0.105448
SS002	35691.37797	24.25	0.011	0.254645
SS003	37428.09461	7.175	0.011	0.079010
SS004	32569.59313	13.75	0.010	0.131758
SS005	26243.98561	17.375	0.008	0.134158
SS006	24646.95624	16.5	0.007	0.119649
SS007	24788.07955	4.725	0.007	0.034459
SS008	26283.02726	5.9	0.008	0.045623
SS009	27942.57571	13	0.008	0.106874
SS010	44987.14444	114	0.013	1.508878
SS011	44985.82462	77	0.013	1.019125
SS012	44989.42087	34.25	0.013	0.453348
SS013	45001.8662	19.5	0.013	0.258182
SS014	44969.46063	36	0.013	0.476301
SS015	44979.53162	35.5	0.013	0.469790
SS016	44981.03583	5.2	0.013	0.068817
SS017	44798.37514	6.75	0.013	0.088967
SS018	31703.76762	8.7	0.009	0.081150
SS019	30238.61668	45.25	0.009	0.402570
SS020	41769.97756	11	0.012	0.135182
SS021	41915.66623	81	0.012	0.998901
SS022	56252.70658	6.245	0.017	0.103356
SS023	54485.7066	8.7	0.016	0.139464
SS024	42022.43063	4.875	0.012	0.060272
SS025	43796.75729	12	0.013	0.154627
SS026	41192.24624	9.7625	0.012	0.118314
SS027	41072.50452	9.4	0.012	0.113590
SS028	24594.54276	4.8375	0.007	0.035004
SS029	33392.10298	9.45	0.010	0.092840
SS030	33689.53265	15.15	0.010	0.150165
SS031	37594.35888	6.0375	0.011	0.066779
SS032	35761.30671	1190	0.011	12.520488
SS033	41704.18033	3.15	0.012	0.038650
SS034	29977.86136	7	0.009	0.061739
SS035	20509.33762	83.2	0.006	0.502037
SS036	37690.06466	10.3	0.011	0.114215
SS037	17600.84045	232	0.005	1.201385
SS038	37399.55072	16.6	0.011	0.182657
SS039	36051.96541	11.3625	0.011	0.120521
SS040	64967.81685	250	0.019	4.778584
SS041	60317.71593	16.65	0.018	0.295475
SS042	18282.48539	12.5	0.005	0.067237
SS043	18095.8548	5.15	0.005	0.027419
SS044	28379.85497	20	0.008	0.166994
SS045	64410.78376	8.1	0.019	0.153499
SS046	53795.13163	5.325	0.016	0.084280
SS047	29019.03336	5.4125	0.009	0.046211
SS048	36980.18459	7.1625	0.011	0.077928
SS049	31962.86872	7.7	0.009	0.072410
SS050	22962.10462	21	0.007	0.141870
SS051	31681.11706	22.5	0.009	0.209722
SS052	35907.07926	11.4	0.011	0.120433
SS054	27005.8435	152.5	0.008	1.211682
SS057	23684.94378	207.7	0.007	1.447337
SS058	40892.75825	83.5	0.012	1.004601
SS059	30610.85504	27	0.009	0.243164
SS060	49138.56862	10.6	0.014	0.153246
SS062	75396.23963	9.375	0.022	0.207961
SS064	45745.51326	5.7	0.013	0.076716
SS066	35406.19652	6.8475	0.010	0.071330
SS067	60631.65369	22.75	0.018	0.405828
SS068	65814.66451	15.975	0.019	0.309332
SS069	85900.32574	24	0.025	0.606550
SS070	53606.93651	14.875	0.016	0.234606
SS071	15258.22418	60.5	0.004	0.271594
SS072	22449.49319	25.05	0.007	0.165453
SS073	36277.7988	205	0.011	2.188042
SS074	32138.57422	44.5	0.009	0.420773
SS075	18648.49523	113.1	0.005	0.620536
SS076	26621.33223	24.5	0.008	0.191892
SS077	19534.31339	10.35	0.006	0.059484
SS078	20418.57794	3.6	0.006	0.021627
SS079	39554.34659	10.5	0.012	0.122192
SS080	11679.29592	47.75	0.003	0.164078
SS081	17233.39033	17.5	0.005	0.088730
SS082	17020.32289	24.2	0.005	0.121184
SS083	16372.16138	15	0.005	0.072253
SS084	23869.86934	4.45	0.007	0.031252
SS085	40357.70732	42	0.012	0.498697
SS086	23258.04748	24.425	0.007	0.167136
SS087	22447.91493	4.65	0.007	0.030711
SS088	35448.70895	18.975	0.010	0.197899
SS089	25110.63681	34	0.007	0.251187
SS090	44026.61233	21	0.013	0.272017
SS091	51314.85984	34.05	0.015	0.514069
SS092	53569.77669	29.5	0.016	0.464946
SS093	50604.52317	11	0.015	0.163773
SS094	23840.43886	5.05	0.007	0.035421
SS095	30987.71936	22.425	0.009	0.204448
SS096	34257.36485	26.475	0.010	0.266840
SS097	26231.42892	53.575	0.008	0.413471
SS098	28107.6746	5.725	0.008	0.047344
SS099	23405.40518	10	0.007	0.068862
SS100	17769.14005	7.2375	0.005	0.037837
SS101	29373.58566	13.525	0.009	0.116884
	3398905.59	4174.33	1.00	43.25

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	17.4409	16.5210	18.2113	17.1265	17.3249	0.7035	0.0406
Max	110.1815	133.4223	113.0582	113.6237	117.5714	10.6742	0.0908
Average	43.4044	43.2793	43.6961	43.7502	43.5325	0.2271	0.0052
Std Dev	12.8686	13.0824	12.9315	13.0656	12.9870	0.1039	0.0080
1%	22.3203	22.5024	22.6560	22.4740	22.4882	0.1376	0.0061
5%	25.9181	26.0504	26.2634	26.2663	26.1245	0.1708	0.0065
10%	28.4231	28.1214	28.3176	28.5279	28.3475	0.1735	0.0061
15%	30.1267	29.9322	29.9803	30.3212	30.0901	0.1749	0.0058
20%	31.9601	31.5639	31.7022	31.9262	31.7881	0.1882	0.0059
25%	33.6275	33.1478	33.5318	33.6132	33.4801	0.2255	0.0067
30%	35.2305	34.9367	35.4303	35.3052	35.2257	0.2095	0.0059
35%	36.9429	36.6718	37.4687	37.2421	37.0814	0.3477	0.0094
40%	38.6008	38.3817	39.1485	39.0429	38.7935	0.3628	0.0094
45%	40.0135	39.9852	40.7533	40.6496	40.3504	0.4078	0.0101
50%	41.5319	41.5169	42.1399	42.3168	41.8764	0.4128	0.0099
55%	43.1202	43.0841	43.5253	43.7609	43.3726	0.3271	0.0075
60%	44.8154	44.6207	45.1477	45.3070	44.9727	0.3115	0.0069
65%	46.7490	46.6366	47.0938	47.1081	46.8969	0.2401	0.0051
70%	48.8352	48.6829	49.3857	49.0708	48.9936	0.3062	0.0063
75%	51.1893	51.1749	51.7803	51.5995	51.4360	0.3024	0.0059
80%	53.9098	53.6999	54.5682	53.9644	54.0356	0.3729	0.0069
85%	57.0220	56.9996	57.3898	57.0232	57.1087	0.1877	0.0033
90%	61.0224	60.9102	60.8760	61.3239	61.0331	0.2037	0.0033
95%	67.7086	67.6207	67.0188	68.4283	67.6941	0.5776	0.0085
97%	71.3671	71.6605	71.4224	72.5985	71.7621	0.5720	0.0080
99%	79.5097	80.6398	81.5439	80.9750	80.6671	0.8571	0.0106
Kurtosis	0.62	1.10	0.54	0.80	0.77	0.25	
Skewness	0.77	0.86	0.74	0.81	0.80	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Mercury Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Mercury (mg/kg)	% of Area	Weighted Avg
SS001	25418.94529	0.0505	0.007	0.000378
SS002	35691.37797	0.4125	0.011	0.004332
SS003	37428.09461	0.08175	0.011	0.000900
SS004	32569.59313	0.2175	0.010	0.002084
SS005	26243.98561	0.126	0.008	0.000973
SS006	24646.95624	0.1075	0.007	0.000780
SS007	24788.07955	0.0405	0.007	0.000295
SS008	26283.02726	0.081	0.008	0.000626
SS009	27942.57571	0.0885	0.008	0.000728
SS010	44987.14444	0.2275	0.013	0.003011
SS011	44985.82462	0.235	0.013	0.003110
SS012	44989.42087	0.1175	0.013	0.001555
SS013	45001.8662	0.18	0.013	0.002383
SS014	44969.46063	0.099	0.013	0.001310
SS015	44979.53162	0.148	0.013	0.001959
SS016	44981.03583	0.195	0.013	0.002581
SS017	44798.37514	0.32	0.013	0.004218
SS018	31703.76762	0.265	0.009	0.002472
SS019	30238.61668	0.05	0.009	0.000445
SS020	41769.97756	0.06	0.012	0.000737
SS021	41915.66623	1.9	0.012	0.023431
SS022	56252.70658	0.02045	0.017	0.000338
SS023	54485.7066	0.024	0.016	0.000385
SS024	42022.43063	0.0465	0.012	0.000575
SS025	43796.75729	0.485	0.013	0.006249
SS026	41192.24624	0.052	0.012	0.000630
SS027	41072.50452	0.41	0.012	0.004954
SS028	24594.54276	0.062	0.007	0.000449
SS029	33392.10298	0.036	0.010	0.000354
SS030	33689.53265	0.090475	0.010	0.000897
SS031	37594.35888	0.11625	0.011	0.001286
SS032	35761.30671	1.15	0.011	0.012100
SS033	41704.18033	0.0315	0.012	0.000387
SS034	29977.86136	0.69	0.009	0.006086
SS035	20509.33762	0.1515	0.006	0.000914
SS036	37690.06466	0.04375	0.011	0.000485
SS037	17600.84045	0.21	0.005	0.001087
SS038	37399.55072	0.1865	0.011	0.002052
SS039	36051.96541	0.056625	0.011	0.000601
SS040	64967.81685	1.035	0.019	0.019783
SS041	60317.71593	0.1355	0.018	0.002405
SS042	18282.48539	0.125	0.005	0.000672
SS043	18095.8548	0.088	0.005	0.000469
SS044	28379.85497	1.5	0.008	0.012525
SS045	64410.78376	0.0416	0.019	0.000788
SS046	53795.13163	0.277	0.016	0.004384
SS047	29019.03336	0.125375	0.009	0.001070
SS048	36980.18459	0.0525	0.011	0.000571
SS049	31962.86872	0.053775	0.009	0.000506
SS050	22962.10462	0.37	0.007	0.002500
SS051	31681.11706	0.225	0.009	0.002097
SS052	35907.07926	0.11875	0.011	0.001255
SS054	27005.8435	0.2975	0.008	0.002364
SS057	23684.94378	0.04475	0.007	0.000312
SS058	40892.75825	0.985	0.012	0.011851
SS059	30610.85504	1.72	0.009	0.015490
SS060	49138.56862	0.21	0.014	0.003036
SS062	75396.23963	0.093375	0.022	0.002071
SS064	45745.51326	0.092575	0.013	0.001246
SS066	35406.19652	0.0474	0.010	0.000494
SS067	60631.65369	0.41	0.018	0.007314
SS068	65814.66451	0.09025	0.019	0.001748
SS069	85900.32574	0.065	0.025	0.001643
SS070	53606.93651	0.98225	0.016	0.015492
SS071	15258.22418	0.0625	0.004	0.000281
SS072	22449.49319	1.0515	0.007	0.006945
SS073	36277.7988	1.85	0.011	0.019746
SS074	32138.57422	1.045	0.009	0.009881
SS075	18648.49523	0.18425	0.005	0.001011
SS076	26621.33223	0.13	0.008	0.001018
SS077	19534.31339	0.04925	0.006	0.000283
SS078	20418.57794	0.0185	0.006	0.000111
SS079	39554.34659	0.088	0.012	0.001024
SS080	11679.29592	0.062125	0.003	0.000213
SS081	17233.39033	0.455	0.005	0.002307
SS082	17020.32289	0.36775	0.005	0.001842
SS083	16372.16138	0.21	0.005	0.001012
SS084	23869.86934	0.0465	0.007	0.000327
SS085	40357.70732	0.275	0.012	0.003265
SS086	23258.04748	0.32375	0.007	0.002215
SS087	22447.91493	0.155	0.007	0.001024
SS088	35448.70895	0.28125	0.010	0.002933
SS089	25110.63681	0.61	0.007	0.004507
SS090	44026.61233	0.3825	0.013	0.004955
SS091	51314.85984	0.4085	0.015	0.006167
SS092	53569.77669	0.52	0.016	0.008196
SS093	50604.52317	0.0595	0.015	0.000886
SS094	23840.43886	0.1065	0.007	0.000747
SS095	30987.71936	0.95025	0.009	0.008663
SS096	34257.36485	0.21	0.010	0.002117
SS097	26231.42892	0.09075	0.008	0.000700
SS098	28107.6746	0.0925	0.008	0.000765
SS099	23405.40518	0.80975	0.007	0.005576
SS100	17769.14005	0.1855	0.005	0.000970
SS101	29373.58566	0.69175	0.009	0.005978
	3398905.59	29.82	1.00	0.32

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1942	0.1915	0.1907	0.1879	0.1911	0.0026	0.0137
Max	0.4898	0.4691	0.4852	0.4795	0.4809	0.0089	0.0186
Average	0.3227	0.3221	0.3223	0.3221	0.3223	0.0003	0.0008
Std Dev	0.0422	0.0419	0.0425	0.0419	0.0421	0.0003	0.0065
1%	0.2323	0.2332	0.2302	0.2300	0.2314	0.0016	0.0069
5%	0.2565	0.2546	0.2537	0.2539	0.2547	0.0013	0.0051
10%	0.2704	0.2686	0.2688	0.2700	0.2695	0.0009	0.0033
15%	0.2788	0.2783	0.2784	0.2802	0.2789	0.0009	0.0031
20%	0.2871	0.2864	0.2863	0.2873	0.2868	0.0005	0.0018
25%	0.2932	0.2929	0.2926	0.2939	0.2931	0.0005	0.0018
30%	0.2991	0.2993	0.2984	0.2991	0.2990	0.0004	0.0013
35%	0.3052	0.3052	0.3044	0.3053	0.3050	0.0004	0.0014
40%	0.3101	0.3107	0.3100	0.3106	0.3103	0.0004	0.0012
45%	0.3162	0.3161	0.3153	0.3157	0.3158	0.0004	0.0013
50%	0.3212	0.3212	0.3211	0.3205	0.3210	0.0004	0.0011
55%	0.3267	0.3267	0.3264	0.3256	0.3263	0.0005	0.0016
60%	0.3316	0.3320	0.3326	0.3309	0.3318	0.0007	0.0022
65%	0.3376	0.3373	0.3385	0.3369	0.3376	0.0007	0.0020
70%	0.3430	0.3434	0.3447	0.3427	0.3434	0.0009	0.0025
75%	0.3491	0.3496	0.3519	0.3488	0.3498	0.0014	0.0040
80%	0.3568	0.3560	0.3580	0.3560	0.3567	0.0009	0.0026
85%	0.3658	0.3655	0.3655	0.3651	0.3655	0.0003	0.0008
90%	0.3779	0.3770	0.3765	0.3770	0.3771	0.0006	0.0015
95%	0.3954	0.3943	0.3945	0.3941	0.3946	0.0006	0.0015
97%	0.4084	0.4050	0.4051	0.4059	0.4061	0.0016	0.0039
99%	0.4309	0.4251	0.4278	0.4246	0.4271	0.0029	0.0068
Kurtosis	0.11	-0.09	0.00	0.10	0.03	0.09	
Skewness	0.28	0.17	0.19	0.19	0.21	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Acenaphthene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Acenaphthene (mg/kg)	% of Area	Weighted Avg
B1	11886.497442	0.95	0.003	0.003322
B3	11857.582619	0.2	0.003	0.000698
B4	14672.648402	450	0.004	1.942593
DT	4972.551866	130	0.001	0.190188
GA-SOIL-034	15095.610152	2	0.004	0.008883
GA-SOIL-035	16607.069495	20	0.005	0.097720
GA-SOIL-036	23561.846032	0.2	0.007	0.001386
GA-SOIL-037	15017.516289	20	0.004	0.088367
GA-SOIL-038	15343.863270	0.2	0.005	0.000903
NL	12774.661542	430	0.004	1.616139
PA	8753.206571	30	0.003	0.077259
PL	10125.820742	2.05	0.003	0.006107
SL	9699.688369	1.15	0.003	0.003282
SS001	21720.832797	0.0082875	0.006	0.000053
SS002	21287.950686	0.02975	0.006	0.000186
SS003	30957.725088	0.0244	0.009	0.000222
SS004	12645.496016	0.037	0.004	0.000138
SS005	26243.985607	0.18625	0.008	0.001438
SS006	21747.847708	0.092	0.006	0.000589
SS007	19608.225497	0.0149	0.006	0.000086
SS008	26283.027260	0.0215	0.008	0.000166
SS009	17570.654674	0.01475	0.005	0.000076
SS010	41313.998733	0.02975	0.012	0.000362
SS011	40869.247076	0.048	0.012	0.000577
SS012	42233.253670	0.02625	0.012	0.000326
SS013	44834.284519	0.017	0.013	0.000224
SS014	44969.460629	0.01475	0.013	0.000195
SS015	38040.977860	0.02425	0.011	0.000271
SS016	44981.035825	0.05725	0.013	0.000758
SS017	44798.375144	0.055	0.013	0.000725
SS018	26731.825389	0.01475	0.008	0.000116
SS019	30006.239124	0.015	0.009	0.000132
SS020	41174.714743	0.0050375	0.012	0.000061
SS021	39684.618709	0.345	0.012	0.004028
SS022	56197.659455	0.00225	0.017	0.000037
SS023	54485.706600	0.045	0.016	0.000721
SS024	42022.430629	0.0091	0.012	0.000113
SS025	43796.757290	0.037	0.013	0.000477
SS026	41192.246239	0.047225	0.012	0.000572
SS027	41072.504516	0.0335	0.012	0.000405
SS028	15231.081326	0.054125	0.004	0.000243
SS029	33392.102982	0.00475	0.010	0.000047
SS030	33689.532647	0.02875	0.010	0.000285
SS031	35730.660592	0.0123375	0.011	0.000130
SS032	35761.306711	0.075	0.011	0.000789
SS033	41508.591543	0.00145	0.012	0.000018
SS034	26449.048825	0.01475	0.008	0.000115
SS035	18730.951247	0.011725	0.006	0.000065
SS036	23087.822776	0.228875	0.007	0.001555
SS037	14248.753666	0.14	0.004	0.000587
SS038	36642.706062	0.015625	0.011	0.000168
SS039	36051.965407	0.004725	0.011	0.000050
SS040	64967.816854	0.09	0.019	0.001720
SS041	60317.715928	0.0399625	0.018	0.000709
SS042	18282.485388	0.08	0.005	0.000430
SS043	17422.394552	0.07	0.005	0.000359
SS044	17813.010822	0.88	0.005	0.004612
SS045	64410.783757	0.0079625	0.019	0.000151
SS046	44819.316441	0.008475	0.013	0.000112
SS047	19795.357232	0.099025	0.006	0.000577
SS048	34283.160637	0.01305	0.010	0.000132
SS049	31906.289091	0.01775	0.009	0.000167
SS050	22962.104615	0.01625	0.007	0.000110
SS051	28342.929869	0.055	0.008	0.000459
SS052	35907.079259	0.12765	0.011	0.001349
SS054	24873.233049	0.04475	0.007	0.000327
SS057	20289.371341	0.0051	0.006	0.000030
SS058	14094.406107	0.7525	0.004	0.003120
SS059	30129.485013	0.295	0.009	0.002615
SS060	49138.568623	0.075	0.014	0.001084
SS062	75396.239630	0.0274875	0.022	0.000610
SS064	43060.534382	0.0081	0.013	0.000103
SS066	35406.196522	0.02065	0.010	0.000215
SS067	60631.653686	0.11	0.018	0.001962
SS068	65814.664509	0.0761375	0.019	0.001474
SS069	85811.900336	0.02175	0.025	0.000549
SS070	53606.936509	0.0686	0.016	0.001082
SS071	15258.224184	0.01475	0.004	0.000066
SS072	14699.840927	0.0967	0.004	0.000418
SS073	36277.798801	0.225	0.011	0.002402
SS074	32138.574222	0.315	0.009	0.002979
SS075	18014.766940	0.053733333	0.005	0.000285
SS076	18704.193479	0.0765	0.006	0.000421
SS077	13054.981028	72.873625	0.004	0.279903
SS078	20418.577935	0.002225	0.006	0.000013
SS079	39554.346585	0.05175	0.012	0.000602
SS080	11679.295917	0.017	0.003	0.000058
SS081	13080.042128	0.06	0.004	0.000231
SS082	13261.715464	60.84	0.004	0.237383
SS083	15510.601414	0.05125	0.005	0.000234
SS084	23869.869342	0.03675	0.007	0.000258
SS085	40357.707315	0.1125	0.012	0.001336
SS086	23258.047475	7.179375	0.007	0.049127
SS087	22447.914930	0.01425	0.007	0.000094
SS088	35448.708946	0.039	0.010	0.000407
SS089	25110.636808	0.2425	0.007	0.001792
SS090	44026.612330	0.15	0.013	0.001943
SS091	51314.859842	0.063833333	0.015	0.000964
SS092	53569.776687	0.1575	0.016	0.002482
SS093	50604.523169	0.0295	0.015	0.000439
SS094	23840.438858	240.0185	0.007	1.683526
SS095	23365.181798	0.029525	0.007	0.000203
SS096	26940.630550	0.25825	0.008	0.002047
SS097	18254.565325	0.0049	0.005	0.000026
SS098	17738.797440	0.0304	0.005	0.000159
SS099	10273.278596	0.1255	0.003	0.000379
SS100	17769.140049	123.80625	0.005	0.647247
SS101	21165.502568	430.2775	0.006	2.679403
TC	16219.014622	340	0.005	1.622424
TP1	23799.091399	1100	0.007	7.702185
TP10	11875.611425	9600	0.003	33.541935
TP11	8615.913917	0.15	0.003	0.000380
TP13	12799.206037	640	0.004	2.410038
TP4	5966.830090	990	0.002	1.737960
TP8	21725.038307	2.5	0.006	0.015979
TP9	10047.931062	1.4	0.003	0.004139
	3,398,905.59	14,702.91	1.00	56.71

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1272	0.1351	0.3401	0.0823	0.1712	0.1150	0.6718
Max	342.9250	297.0325	351.8277	363.4944	338.8199	29.1037	0.0859
Average	51.1150	52.8067	52.5952	52.0401	52.1392	0.7555	0.0145
Std Dev	48.5327	49.4610	48.9597	48.8942	48.9619	0.3821	0.0078
1%	3.9733	3.9515	4.5172	3.7191	4.0403	0.3381	0.0837
5%	8.3750	8.5612	9.2383	8.3158	8.6226	0.4236	0.0491
10%	11.9695	11.8940	12.3205	12.0266	12.0527	0.1866	0.0155
15%	14.1137	14.3855	14.7439	14.4596	14.4257	0.2591	0.0180
20%	16.3444	16.4670	16.9993	16.6909	16.6254	0.2876	0.0173
25%	18.3193	18.6253	19.0628	18.8182	18.7064	0.3141	0.0168
30%	19.9504	20.8350	21.2286	20.7932	20.7018	0.5380	0.0260
35%	21.9034	23.0979	23.1030	22.6423	22.6866	0.5651	0.0249
40%	23.8458	25.1056	25.1464	24.7237	24.7054	0.6038	0.0244
45%	26.3842	27.3362	27.2360	26.9870	26.9858	0.4271	0.0158
50%	28.6734	29.4989	29.7397	29.4969	29.3522	0.4667	0.0159
55%	31.4592	32.4241	32.5416	32.4762	32.2253	0.5130	0.0159
60%	35.0019	36.0825	36.1621	36.2525	35.8748	0.5860	0.0163
65%	40.3032	41.1562	41.5065	41.3274	41.0733	0.5330	0.0130
70%	49.7414	62.6614	55.7456	53.8030	55.4879	5.3971	0.0973
75%	94.4643	96.7555	95.4221	95.1780	95.4550	0.9575	0.0100
80%	100.7211	102.5430	101.3960	101.3869	101.5118	0.7566	0.0075
85%	106.6574	108.0147	106.5105	106.6369	106.9549	0.7095	0.0066
90%	113.4516	114.6314	114.7172	113.8014	114.1504	0.6225	0.0055
95%	133.3441	136.5616	137.4098	131.9767	134.8231	2.5822	0.0192
97%	183.9363	184.9128	183.9275	183.7152	184.1229	0.5364	0.0029
99%	199.9236	201.6417	202.1343	204.3615	202.0153	1.8288	0.0091
Kurtosis	2.12	2.06	2.13	2.47	2.20	0.18	
Skewness	1.53	1.49	1.51	1.56	1.52	0.03	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Anthracene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Anthracene (mg/kg)	% of Area	Weighted Avg
B1	11886.497442	3.9	0.003	0.013639
B3	11857.582619	0.54	0.003	0.001884
B4	14672.648402	440	0.004	1.899425
DT	4972.551866	180	0.001	0.263338
GA-SOIL-034	15095.610152	0.04	0.004	0.000178
GA-SOIL-035	16607.069495	0.81	0.005	0.003958
GA-SOIL-036	23561.846032	0.004	0.007	0.000028
GA-SOIL-037	15017.516289	0.4	0.004	0.001767
GA-SOIL-038	15343.863270	0.004	0.005	0.000018
NL	12774.661542	390	0.004	1.465801
PA	8753.206571	64	0.003	0.164819
PL	10125.820742	0.91	0.003	0.002711
SL	9699.688369	3.1	0.003	0.008847
SS001	21720.832797	0.03660625	0.006	0.000234
SS002	21287.950686	0.96	0.006	0.006013
SS003	30957.725088	0.5695	0.009	0.005187
SS004	12645.496016	0.72	0.004	0.002679
SS005	26243.985607	1.81	0.008	0.013976
SS006	21747.847708	2.15	0.006	0.013757
SS007	19608.225497	0.33995	0.006	0.001961
SS008	26283.027260	0.8	0.008	0.006186
SS009	17570.654674	0.16	0.005	0.000827
SS010	41313.998733	0.38	0.012	0.004619
SS011	40869.247076	0.345	0.012	0.004148
SS012	42233.253670	1.025	0.012	0.012736
SS013	44834.284519	0.745	0.013	0.009827
SS014	44969.460629	1.3	0.013	0.017200
SS015	38040.977860	0.735	0.011	0.008226
SS016	44981.035825	1.025	0.013	0.013565
SS017	44798.375144	1.45	0.013	0.019111
SS018	26731.825389	2.1	0.008	0.016516
SS019	30006.239124	0.13975	0.009	0.001234
SS020	41174.714743	0.1385	0.012	0.001678
SS021	39684.618709	8.75	0.012	0.102162
SS022	56197.659455	0.033675	0.017	0.000557
SS023	54485.706600	0.91	0.016	0.014588
SS024	42022.430629	0.1873	0.012	0.002316
SS025	43796.757290	0.96	0.013	0.012370
SS026	41192.246239	0.9935	0.012	0.012040
SS027	41072.504516	1.9	0.012	0.022960
SS028	15231.081326	1.408325	0.004	0.006311
SS029	33392.102982	0.012725	0.010	0.000125
SS030	33689.532647	0.31557875	0.010	0.003128
SS031	35730.660592	0.2604875	0.011	0.002738
SS032	35761.306711	1.9	0.011	0.019991
SS033	41508.591543	0.00345	0.012	0.000042
SS034	26449.048825	1.3	0.008	0.010116
SS035	18730.951247	0.163625	0.006	0.000902
SS036	23087.822776	0.33075	0.007	0.002247
SS037	14248.753666	5.95	0.004	0.024943
SS038	36642.706062	0.5552	0.011	0.005985
SS039	36051.965407	0.135925	0.011	0.001442
SS040	64967.816854	2.4	0.019	0.045874
SS041	60317.715928	0.57225	0.018	0.010155
SS042	18282.485388	3.025	0.005	0.016271
SS043	17422.394552	1.975	0.005	0.010124
SS044	17813.010822	23	0.005	0.120539
SS045	64410.783757	0.4102	0.019	0.007773
SS046	44819.316441	0.82075	0.013	0.010823
SS047	19795.357232	0.7325	0.006	0.004266
SS048	34283.160637	0.22133375	0.010	0.002232
SS049	31906.289091	0.54775	0.009	0.005142
SS050	22962.104615	0.615	0.007	0.004155
SS051	28342.929869	1.9	0.008	0.015844
SS052	35907.079259	1.86	0.011	0.019650
SS054	24873.233049	1.275	0.007	0.009330
SS057	20289.371341	0.01299125	0.006	0.000078
SS058	14094.406107	32	0.004	0.132696
SS059	30129.485013	5.5	0.009	0.048755
SS060	49138.568623	1.95	0.014	0.028191
SS062	75396.239630	0.7473	0.022	0.016577
SS064	43060.534382	0.33875	0.013	0.004292
SS066	35406.196522	0.174725	0.010	0.001820
SS067	60631.653686	4.35	0.018	0.077598
SS068	65814.664509	0.7845	0.019	0.015191
SS069	85811.900336	0.635	0.025	0.016032
SS070	53606.936509	3.98875	0.016	0.062910
SS071	15258.224184	0.0745	0.004	0.000334
SS072	14699.840927	2.1915	0.004	0.009478
SS073	36277.798801	8.55	0.011	0.091257
SS074	32138.574222	11.55	0.009	0.109212
SS075	18014.766940	2.08475	0.005	0.011050
SS076	18704.193479	3.25	0.006	0.017885
SS077	13054.981028	41.17	0.004	0.158131
SS078	20418.577935	0.02225625	0.006	0.000134
SS079	39554.346585	1.55	0.012	0.018038
SS080	11679.295917	0.1535	0.003	0.000527
SS081	13080.042128	1.3	0.004	0.005003
SS082	13261.715464	67.185	0.004	0.262140
SS083	15510.601414	1.07	0.005	0.004883
SS084	23869.869342	0.3002	0.007	0.002108
SS085	40357.707315	7.6	0.012	0.090240
SS086	23258.047475	10.8775	0.007	0.074433
SS087	22447.914930	0.665	0.007	0.004392
SS088	35448.708946	0.6495	0.010	0.006774
SS089	25110.636808	11	0.007	0.081266
SS090	44026.612330	11	0.013	0.142485
SS091	51314.859842	1.30008125	0.015	0.019628
SS092	53569.776687	4	0.016	0.063044
SS093	50604.523169	1.365	0.015	0.020323
SS094	23840.438858	418.2425	0.007	2.933616
SS095	23365.181798	1.31325	0.007	0.009028
SS096	26940.630550	5.8825	0.008	0.046626
SS097	18254.565325	0.0297	0.005	0.000160
SS098	17738.797440	1.3775	0.005	0.007189
SS099	10273.278596	2.169	0.003	0.006556
SS100	17769.140049	104.025	0.005	0.543832
SS101	21165.502568	634	0.006	3.948015
TC	16219.014622	4590	0.005	21.902720
TP1	23799.091399	450	0.007	3.150894
TP10	11875.611425	19000	0.003	66.385079
TP11	8615.913917	0.15	0.003	0.000380
TP13	12799.206037	520	0.004	1.958156
TP4	5966.830090	11610	0.002	20.381530
TP8	21725.038307	1.6	0.006	0.010227
TP9	10047.931062	8	0.003	0.023650
	3,398,905.59	38,752.24	1.00	127.42

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	2.0449	1.5576	2.0179	1.9423	1.8907	0.2263	0.1197
Max	856.1220	802.6727	682.4106	740.9390	770.5361	75.2768	0.0977
Average	111.4101	111.5733	110.0312	114.7470	111.9404	1.9948	0.0178
Std Dev	106.8309	107.7678	106.3984	109.2085	107.5514	1.2438	0.0116
1%	6.1125	6.5346	6.1419	6.6377	6.3567	0.2685	0.0422
5%	10.8661	11.3549	10.6760	11.1098	11.0017	0.2949	0.0268
10%	14.4318	14.7512	14.1625	14.9022	14.5619	0.3307	0.0227
15%	17.1906	17.5492	16.9028	17.5830	17.3064	0.3224	0.0186
20%	20.0514	20.6039	19.8140	20.5582	20.2569	0.3871	0.0191
25%	23.4545	23.7954	22.8310	23.9594	23.5101	0.4991	0.0212
30%	28.1598	27.9716	26.9020	28.3531	27.8466	0.6487	0.0233
35%	41.7662	42.5852	33.4287	40.2417	39.5054	4.1659	0.1055
40%	52.6615	53.4126	50.5295	53.3491	52.4882	1.3493	0.0257
45%	57.7939	57.9865	57.4265	59.2112	58.1045	0.7735	0.0133
50%	63.6212	64.1425	62.9809	65.8958	64.1601	1.2509	0.0195
55%	86.6590	81.8321	77.4544	94.5158	85.1153	7.3080	0.0859
60%	111.3363	109.6204	110.6561	116.9876	112.1501	3.3013	0.0294
65%	128.0849	129.2787	128.5767	149.6536	133.8985	10.5148	0.0785
70%	171.1541	170.3815	171.0739	175.3646	171.9935	2.2740	0.0132
75%	181.2683	180.5943	181.5527	183.8270	181.8106	1.4031	0.0077
80%	191.4051	189.4480	190.9784	193.4788	191.3275	1.6622	0.0087
85%	221.1474	216.1814	217.4755	219.5835	218.5970	2.2038	0.0101
90%	254.8819	253.8369	253.5005	258.1471	255.0916	2.1202	0.0083
95%	329.8749	338.0473	329.5539	343.9062	335.3456	6.9295	0.0207
97%	361.5893	373.6464	355.1744	377.0955	366.8764	10.2494	0.0279
99%	450.8485	474.1638	442.7967	452.8820	455.1728	13.3887	0.0294
Kurtosis	2.23	2.29	1.94	2.06	2.13	0.16	
Skewness	1.38	1.43	1.35	1.35	1.37	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

BAP-TE Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	BAP-TE (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	4.83995	0.003	0.016926
B3	11857.58262	2.3874	0.003	0.008329
B4	14672.6484	187.29	0.004	0.808507
DT	4972.551866	133.94	0.001	0.195952
GA-SOIL-034	15095.61015	0.28733	0.004	0.001276
GA-SOIL-035	16607.0695	7.9546	0.005	0.038866
GA-SOIL-036	23561.84603	0.107927	0.007	0.000748
GA-SOIL-037	15017.51629	11.28	0.004	0.049839
GA-SOIL-038	15343.86327	0.0484	0.005	0.000218
NL	12774.66154	92.48	0.004	0.347583
PA	8753.206571	87.92	0.003	0.226421
PL	10125.82074	7.2914	0.003	0.021722
SL	9699.688369	26.334	0.003	0.075151
SS001	21720.8328	0.31025075	0.006	0.001983
SS002	21287.95069	1.933675	0.006	0.012111
SS003	30957.72509	2.6003175	0.009	0.023684
SS004	12645.49602	1.89947	0.004	0.007067
SS005	26243.98561	3.1672025	0.008	0.024455
SS006	21747.84771	2.77095	0.006	0.017730
SS007	19608.2255	0.546388938	0.006	0.003152
SS008	26283.02726	3.1026	0.008	0.023992
SS009	17570.65467	0.195065	0.005	0.001008
SS010	41313.99873	0.9118525	0.012	0.011084
SS011	40869.24708	1.099075	0.012	0.013216
SS012	42233.25367	2.0761	0.012	0.025797
SS013	44834.28452	1.69645	0.013	0.022378
SS014	44969.46063	4.77755	0.013	0.063210
SS015	38040.97786	1.20621	0.011	0.013500
SS016	44981.03583	3.54995	0.013	0.046980
SS017	44798.37514	2.29015	0.013	0.030185
SS018	26731.82539	2.9926	0.008	0.023536
SS019	30006.23912	0.7375975	0.009	0.006512
SS020	41174.71474	0.343121	0.012	0.004157
SS021	39684.61871	20.038	0.012	0.233958
SS022	56197.65946	0.037578138	0.017	0.000621
SS023	54485.7066	1.7739575	0.016	0.028437
SS024	42022.43063	0.43902775	0.012	0.005428
SS025	43796.75729	2.0775	0.013	0.026770
SS026	41192.24624	3.024610625	0.012	0.036656
SS027	41072.50452	2.9708	0.012	0.035899
SS028	15231.08133	7.06168	0.004	0.031645
SS029	33392.10298	0.020173878	0.010	0.000198
SS030	33689.53265	1.713452	0.010	0.016984
SS031	35730.66059	0.590970513	0.011	0.006213
SS032	35761.30671	3.0823	0.011	0.032430
SS033	41508.59154	0.003103628	0.012	0.000038
SS034	26449.04883	1.4952	0.008	0.011635
SS035	18730.95125	0.7362255	0.006	0.004057
SS036	23087.82278	0.5626725	0.007	0.003822
SS037	14248.75367	7.86625	0.004	0.032977
SS038	36642.70606	1.200000375	0.011	0.012937
SS039	36051.96541	0.209561	0.011	0.002223
SS040	64967.81685	3.15885	0.019	0.060379
SS041	60317.71593	0.8793692	0.018	0.015605
SS042	18282.48539	6.593625	0.005	0.035467
SS043	17422.39455	2.72175	0.005	0.013951
SS044	17813.01082	43.686	0.005	0.228950
SS045	64410.78376	0.978793	0.019	0.018549
SS046	44819.31644	1.78536675	0.013	0.023543
SS047	19795.35723	1.81551	0.006	0.010574
SS048	34283.16064	0.55221875	0.010	0.005570
SS049	31906.28909	1.28035925	0.009	0.012019
SS050	22962.10462	1.58355	0.007	0.010698
SS051	28342.92987	5.17785	0.008	0.043177
SS052	35907.07926	2.2048925	0.011	0.023293
SS054	24873.23305	2.877075	0.007	0.021054
SS057	20289.37134	0.044492228	0.006	0.000266
SS058	14094.40611	83.9465	0.004	0.348105
SS059	30129.48501	7.25605	0.009	0.064321
SS060	49138.56862	2.8515	0.014	0.041225
SS062	75396.23963	3.08806775	0.022	0.068501
SS064	43060.53438	0.983544	0.013	0.012460
SS066	35406.19652	0.417767263	0.010	0.004352
SS067	60631.65369	10.963525	0.018	0.195574
SS068	65814.66451	1.70943075	0.019	0.033101
SS069	85811.90034	2.09655	0.025	0.052931
SS070	53606.93651	8.51725675	0.016	0.134333
SS071	15258.22418	0.40816	0.004	0.001832
SS072	14699.84093	2.9140075	0.004	0.012603
SS073	36277.7988	15.9812	0.011	0.170573
SS074	32138.57422	17.1507	0.009	0.162170
SS075	18014.76694	9.43702675	0.005	0.050018
SS076	18704.19348	9.34505	0.006	0.051426
SS077	13054.98103	38.5884625	0.004	0.148216
SS078	20418.57794	0.064853	0.006	0.000390
SS079	39554.34659	4.28665	0.012	0.049885
SS080	11679.29592	0.2700506	0.003	0.000928
SS081	13080.04213	3.6713	0.004	0.014128
SS082	13261.71546	25.25717825	0.004	0.098547
SS083	15510.60141	2.04075	0.005	0.009313
SS084	23869.86934	0.4903398	0.007	0.003444
SS085	40357.70732	12.2077	0.012	0.144951
SS086	23258.04748	3.4387575	0.007	0.023531
SS087	22447.91493	1.78725	0.007	0.011804
SS088	35448.70895	2.47068325	0.010	0.025768
SS089	25110.63681	15.694	0.007	0.115945
SS090	44026.61233	6.3338	0.013	0.082043
SS091	51314.85984	3.8457315	0.015	0.058061
SS092	53569.77669	10.5707	0.016	0.166604
SS093	50604.52317	2.62055	0.015	0.039016
SS094	23840.43886	81.51391625	0.007	0.571751
SS095	23365.1818	2.532296488	0.007	0.017408
SS096	26940.63055	21.140015	0.008	0.167561
SS097	18254.56533	0.08985492	0.005	0.000483
SS098	17738.79744	0.436272	0.005	0.002277
SS099	10273.2786	4.020436	0.003	0.012152
SS100	17769.14005	41.538525	0.005	0.217159
SS101	21165.50257	299.3425	0.006	1.864051
TC	16219.01462	105.42	0.005	0.503047
TP1	23799.0914	133.38	0.007	0.933925
TP10	11875.61143	617.7	0.003	2.158214
TP11	8615.913917	16.687	0.003	0.042300
TP13	12799.20604	74.57	0.004	0.280807
TP4	5966.83009	274.215	0.002	0.481389
TP8	21725.03831	2.825	0.006	0.018057
TP9	10047.93106	16.779	0.003	0.049603
	3398905.59	2733.51	1.00	12.93

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	3.7420	3.9480	3.0924	3.2441	3.5066	0.4044	0.1153
Max	33.1121	31.2627	33.7459	33.9353	33.0140	1.2194	0.0369
Average	12.6380	12.6450	12.6209	12.7769	12.6702	0.0719	0.0057
Std Dev	4.3126	4.2903	4.2598	4.3546	4.3043	0.0399	0.0093
1%	5.2578	5.3171	5.2363	5.3235	5.2837	0.0433	0.0082
5%	6.6638	6.7297	6.6299	6.7555	6.6947	0.0580	0.0087
10%	7.5862	7.6141	7.6060	7.6517	7.6145	0.0274	0.0036
15%	8.2712	8.3527	8.2823	8.3257	8.3080	0.0380	0.0046
20%	8.8932	8.9530	8.9093	8.9056	8.9153	0.0261	0.0029
25%	9.5069	9.4983	9.4801	9.4763	9.4904	0.0146	0.0015
30%	10.0674	9.9909	10.0285	10.0512	10.0345	0.0332	0.0033
35%	10.5566	10.5090	10.5244	10.5817	10.5429	0.0326	0.0031
40%	11.0720	11.0296	11.0265	11.1247	11.0632	0.0460	0.0042
45%	11.5189	11.5553	11.5649	11.7406	11.5949	0.0991	0.0085
50%	12.0150	12.0748	12.0826	12.3046	12.1193	0.1272	0.0105
55%	12.5774	12.6089	12.6197	12.8421	12.6620	0.1214	0.0096
60%	13.1934	13.1768	13.1389	13.4157	13.2312	0.1251	0.0095
65%	13.7631	13.7774	13.8020	14.0447	13.8468	0.1329	0.0096
70%	14.4163	14.4188	14.4732	14.6880	14.4991	0.1286	0.0089
75%	15.1900	15.1560	15.2530	15.3891	15.2470	0.1029	0.0067
80%	16.0345	16.0143	16.0696	16.2490	16.0918	0.1072	0.0067
85%	17.0674	17.0789	17.0217	17.3132	17.1203	0.1309	0.0076
90%	18.4237	18.4233	18.3851	18.6206	18.4632	0.1065	0.0058
95%	20.6324	20.4504	20.4516	20.6298	20.5411	0.1040	0.0051
97%	21.9855	22.2251	21.7734	22.0965	22.0201	0.1914	0.0087
99%	24.9801	25.3605	24.5699	24.8935	24.9510	0.3251	0.0130
Kurtosis	0.79	0.66	0.58	0.61	0.66	0.10	
Skewness	0.78	0.77	0.72	0.72	0.75	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Carbazole Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Carbazole (mg/kg)	% of Area	Weighted Avg
SS001	25418.94529	0.015	0.007	0.000112
SS002	35691.37797	0.10375	0.011	0.001089
SS003	37428.09461	0.15425	0.011	0.001699
SS004	32569.59313	0.04525	0.010	0.000434
SS005	26243.98561	0.171625	0.008	0.001325
SS006	24646.95624	0.25	0.007	0.001813
SS007	24788.07955	0.04525	0.007	0.000330
SS008	26283.02726	0.181	0.008	0.001400
SS009	27942.57571	0.009	0.008	0.000074
SS010	44987.14444	0.0565	0.013	0.000748
SS011	44985.82462	0.11	0.013	0.001456
SS012	44989.42087	0.2175	0.013	0.002879
SS013	45001.8662	0.28	0.013	0.003707
SS014	44969.46063	0.255	0.013	0.003374
SS015	44979.53162	0.15	0.013	0.001985
SS016	44981.03583	0.13	0.013	0.001720
SS017	44798.37514	0.195	0.013	0.002570
SS018	31703.76762	0.345	0.009	0.003218
SS019	30238.61668	0.03875	0.009	0.000345
SS020	41769.97756	0.030375	0.012	0.000373
SS021	41915.66623	1.105	0.012	0.013627
SS022	56252.70658	0.008625	0.017	0.000143
SS023	54485.7066	0.04525	0.016	0.000725
SS024	42022.43063	0.035375	0.012	0.000437
SS025	43796.75729	0.155	0.013	0.001997
SS026	41192.24624	0.242375	0.012	0.002937
SS027	41072.50452	0.635	0.012	0.007673
SS028	24594.54276	0.1945	0.007	0.001407
SS029	33392.10298	0.008875	0.010	0.000087
SS030	33689.53265	0.23925	0.010	0.002371
SS031	37594.35888	0.048875	0.011	0.000541
SS032	35761.30671	0.315	0.011	0.003314
SS033	41704.18033	0.00875	0.012	0.000107
SS034	29977.86136	0.175	0.009	0.001543
SS035	20509.33762	0.023875	0.006	0.000144
SS036	37690.06466	0.04075	0.011	0.000452
SS037	17600.84045	1.24	0.005	0.006421
SS038	37399.55072	0.109625	0.011	0.001206
SS039	36051.96541	0.02525	0.011	0.000268
SS040	64967.81685	0.385	0.019	0.007359
SS041	60317.71593	0.10175	0.018	0.001806
SS042	18282.48539	0.37	0.005	0.001990
SS043	18095.8548	0.11175	0.005	0.000595
SS044	28379.85497	1.4	0.008	0.011690
SS045	64410.78376	0.08675	0.019	0.001644
SS046	53795.13163	0.149375	0.016	0.002364
SS047	29019.03336	0.102875	0.009	0.000878
SS048	36980.18459	0.05625	0.011	0.000612
SS049	31962.86872	0.09175	0.009	0.000863
SS050	22962.10462	0.175	0.007	0.001182
SS051	31681.11706	0.3	0.009	0.002796
SS052	35907.07926	0.42325	0.011	0.004471
SS054	27005.8435	0.3225	0.008	0.002562
SS057	23684.94378	0.00875	0.007	0.000061
SS058	40892.75825	3.4	0.012	0.040906
SS059	30610.85504	0.515	0.009	0.004638
SS060	49138.56862	0.109	0.014	0.001576
SS062	75396.23963	0.275875	0.022	0.006120
SS064	45745.51326	0.07725	0.013	0.001040
SS066	35406.19652	0.055125	0.010	0.000574
SS067	60631.65369	0.7175	0.018	0.012799
SS068	65814.66451	0.22925	0.019	0.004439
SS069	85900.32574	0.1385	0.025	0.003500
SS070	53606.93651	0.817125	0.016	0.012888
SS071	15258.22418	0.0165	0.004	0.000074
SS072	22449.49319	0.312125	0.007	0.002062
SS073	36277.7988	1.225	0.011	0.013075
SS074	32138.57422	1.075	0.009	0.010165
SS075	18648.49523	0.605125	0.005	0.003320
SS076	26621.33223	0.47	0.008	0.003681
SS077	19534.31339	18.5905	0.006	0.106844
SS078	20418.57794	0.0085	0.006	0.000051
SS079	39554.34659	0.315	0.012	0.003666
SS080	11679.29592	0.024625	0.003	0.000085
SS081	17233.39033	0.17	0.005	0.000862
SS082	17020.32289	7.12475	0.005	0.035678
SS083	16372.16138	0.125	0.005	0.000602
SS084	23869.86934	0.039125	0.007	0.000275
SS085	40357.70732	0.855	0.012	0.010152
SS086	23258.04748	3.39	0.007	0.023197
SS087	22447.91493	0.0915	0.007	0.000604
SS088	35448.70895	0.236875	0.010	0.002470
SS089	25110.63681	0.965	0.007	0.007129
SS090	44026.61233	0.5275	0.013	0.006833
SS091	51314.85984	0.61925	0.015	0.009349
SS092	53569.77669	0.55	0.016	0.008668
SS093	50604.52317	0.215	0.015	0.003201
SS094	23840.43886	29.582375	0.007	0.207495
SS095	30987.71936	0.244	0.009	0.002225
SS096	34257.36485	0.64975	0.010	0.006549
SS097	26231.42892	0.01625	0.008	0.000125
SS098	28107.6746	0.05475	0.008	0.000453
SS099	23405.40518	0.2075	0.007	0.001429
SS100	17769.14005	67.7975	0.005	0.354439
SS101	29373.58566	56.505	0.009	0.488320
	3398905.59	210.47	1.00	1.52

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2224	0.2207	0.2267	0.2151	0.2212	0.0048	0.0216
Max	5.5001	5.2556	6.1298	5.9543	5.7100	0.4027	0.0705
Average	1.7208	1.7402	1.7127	1.7119	1.7214	0.0132	0.0076
Std Dev	0.8449	0.8643	0.8512	0.8575	0.8545	0.0083	0.0097
1%	0.3042	0.3041	0.3137	0.3000	0.3055	0.0058	0.0189
5%	0.4837	0.4782	0.4633	0.4591	0.4711	0.0117	0.0249
10%	0.6676	0.6702	0.6758	0.6513	0.6662	0.0105	0.0158
15%	0.8848	0.8892	0.8790	0.8653	0.8796	0.0104	0.0118
20%	1.0019	0.9921	0.9905	0.9776	0.9905	0.0100	0.0101
25%	1.0974	1.1103	1.0954	1.0677	1.0927	0.0179	0.0164
30%	1.1966	1.2050	1.1965	1.1859	1.1960	0.0078	0.0065
35%	1.2919	1.3035	1.2868	1.2832	1.2914	0.0088	0.0068
40%	1.4084	1.4206	1.4115	1.3933	1.4085	0.0114	0.0081
45%	1.5267	1.5310	1.5189	1.5232	1.5249	0.0051	0.0034
50%	1.6339	1.6379	1.6168	1.6294	1.6295	0.0092	0.0056
55%	1.7166	1.7400	1.7134	1.7293	1.7248	0.0122	0.0071
60%	1.8361	1.8471	1.8180	1.8293	1.8326	0.0122	0.0067
65%	1.9709	1.9686	1.9307	1.9335	1.9509	0.0218	0.0112
70%	2.1039	2.1103	2.0711	2.0821	2.0918	0.0184	0.0088
75%	2.2495	2.2628	2.2230	2.2415	2.2442	0.0166	0.0074
80%	2.4103	2.4681	2.3808	2.4016	2.4152	0.0374	0.0155
85%	2.6061	2.6597	2.5833	2.6071	2.6140	0.0324	0.0124
90%	2.8762	2.9269	2.8610	2.8747	2.8847	0.0289	0.0100
95%	3.2517	3.3160	3.2976	3.2426	3.2770	0.0355	0.0108
97%	3.5142	3.5838	3.5793	3.5151	3.5481	0.0387	0.0109
99%	4.0034	4.1064	4.0891	4.1083	4.0768	0.0497	0.0122
Kurtosis	0.29	0.30	0.69	0.63	0.48	0.21	
Skewness	0.63	0.67	0.74	0.71	0.69	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Fluoranthene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Fluoranthene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.54	0.003	0.001884
B4	14672.6484	990	0.004	4.273706
GA-SOIL-034	15095.61015	1.8	0.004	0.007994
GA-SOIL-035	16607.0695	7.6	0.005	0.037134
GA-SOIL-036	23561.84603	0.053	0.007	0.000367
GA-SOIL-037	15017.51629	8	0.004	0.035347
GA-SOIL-038	15343.86327	0.046	0.005	0.000208
SS001	21720.8328	0.29155375	0.006	0.001863
SS002	21287.95069	0.8125	0.006	0.005089
SS003	30957.72509	1.849	0.009	0.016841
SS004	12645.49602	1.21	0.004	0.004502
SS005	26243.98561	3.5625	0.008	0.027507
SS006	21747.84771	2.05	0.006	0.013117
SS007	19608.2255	0.2825375	0.006	0.001630
SS008	26283.02726	2.135	0.008	0.016510
SS009	17570.65467	0.18	0.005	0.000931
SS010	41313.99873	0.94	0.012	0.011426
SS011	40869.24708	0.855	0.012	0.010281
SS012	42233.25367	0.9675	0.012	0.012022
SS013	44834.28452	5.95	0.013	0.078485
SS014	44969.46063	1.35	0.013	0.017861
SS015	38040.97786	1.25	0.011	0.013990
SS016	44981.03583	1.79	0.013	0.023689
SS017	44798.37514	1.65	0.013	0.021747
SS018	26731.82539	3.8	0.008	0.029886
SS019	30006.23912	0.805	0.009	0.007107
SS020	41174.71474	0.207375	0.012	0.002512
SS021	39684.61871	14	0.012	0.163460
SS022	56197.65946	0.027625	0.017	0.000457
SS023	54485.7066	2.37	0.016	0.037992
SS024	42022.43063	0.4485	0.012	0.005545
SS025	43796.75729	1.5	0.013	0.019328
SS026	41192.24624	1.04175	0.012	0.012625
SS027	41072.50452	2.25	0.012	0.027189
SS028	15231.08133	5.70875	0.004	0.025582
SS029	33392.10298	0.025275	0.010	0.000248
SS030	33689.53265	1.09875	0.010	0.010891
SS031	35730.66059	0.336	0.011	0.003532
SS032	35761.30671	3.2	0.011	0.033669
SS033	41508.59154	0.0025075	0.012	0.000031
SS034	26449.04883	1.7	0.008	0.013229
SS035	18730.95125	0.37575	0.006	0.002071
SS036	23087.82278	2.02125	0.007	0.013730
SS037	14248.75367	7.2	0.004	0.030184
SS038	36642.70606	1.19365	0.011	0.012868
SS039	36051.96541	0.18595625	0.011	0.001972
SS040	64967.81685	3.05	0.019	0.058299
SS041	60317.71593	0.46	0.018	0.008163
SS042	18282.48539	6.25	0.005	0.033618
SS043	17422.39455	5.15	0.005	0.026398
SS044	17813.01082	16	0.005	0.083853
SS045	64410.78376	0.530275	0.019	0.010049
SS046	44819.31644	0.933	0.013	0.012303
SS047	19795.35723	0.66975	0.006	0.003901
SS048	34283.16064	0.49375	0.010	0.004980
SS049	31906.28909	0.855	0.009	0.008026
SS050	22962.10462	1.9	0.007	0.012836
SS051	28342.92987	5.9	0.008	0.049199
SS052	35907.07926	2.94	0.011	0.031059
SS054	24873.23305	2.675	0.007	0.019576
SS057	20289.37134	0.05196625	0.006	0.000310
SS058	14094.40611	193	0.004	0.800322
SS059	30129.48501	8.7	0.009	0.077121
SS060	49138.56862	3.75	0.014	0.054214
SS062	75396.23963	2.48025	0.022	0.055018
SS064	43060.53438	0.9815	0.013	0.012435
SS066	35406.19652	0.362	0.010	0.003771
SS067	60631.65369	10.475	0.018	0.186859
SS068	65814.66451	1.441	0.019	0.027903
SS069	85811.90034	1.65	0.025	0.041657
SS070	53606.93651	5.0465	0.016	0.079593
SS071	15258.22418	0.43	0.004	0.001930
SS072	14699.84093	3.4375	0.004	0.014867
SS073	36277.7988	8.65	0.011	0.092325
SS074	32138.57422	13.5	0.009	0.127650
SS075	18014.76694	6.12875	0.005	0.032483
SS076	18704.19348	6.3	0.006	0.034669
SS077	13054.98103	129	0.004	0.495481
SS078	20418.57794	0.05	0.006	0.000300
SS079	39554.34659	3.55	0.012	0.041313
SS080	11679.29592	0.2455	0.003	0.000844
SS081	13080.04213	3.4	0.004	0.013084
SS082	13261.71546	209.08	0.004	0.815780
SS083	15510.60141	2.3	0.005	0.010496
SS084	23869.86934	0.28516625	0.007	0.002003
SS085	40357.70732	8.4	0.012	0.099739
SS086	23258.04748	18.825	0.007	0.128816
SS087	22447.91493	2.55	0.007	0.016841
SS088	35448.70895	1.856	0.010	0.019357
SS089	25110.63681	18.5	0.007	0.136675
SS090	44026.61233	5.175	0.013	0.067033
SS091	51314.85984	2.76225	0.015	0.041703
SS092	53569.77669	8.3	0.016	0.130815
SS093	50604.52317	2	0.015	0.029777
SS094	23840.43886	395.70875	0.007	2.775561
SS095	23365.1818	1.117175	0.007	0.007680
SS096	26940.63055	12.4775	0.008	0.098900
SS097	18254.56533	0.07891875	0.005	0.000424
SS098	17738.79744	0.3305	0.005	0.001725
SS099	10273.2786	2.945	0.003	0.008901
SS100	17769.14005	223.825	0.005	1.170135
SS101	21165.50257	557.75	0.006	3.473194
TP1	23799.0914	2000	0.007	14.003973
TP10	11875.61143	9800	0.003	34.240725
TP11	8615.913917	17	0.003	0.043093
TP13	12799.20604	970	0.004	3.652714
TP4	5966.83009	1630	0.002	2.861490
TP8	21725.03831	4.7	0.006	0.030041
TP9	10047.93106	12	0.003	0.035475
DT	4972.551866	780	0.001	1.141129
NL	12774.66154	620	0.004	2.330247
PA	8753.206571	600	0.003	1.545181
PL	10125.82074	6.4	0.003	0.019067
SL	9699.688369	28	0.003	0.079906
TC	16219.01462	980	0.005	4.676398
	3398905.59	20458.42	1.00	81.34

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	2.8868	3.2981	3.6523	3.9998	3.4593	0.4772	0.1379
Max	337.0531	414.4440	416.0427	395.4012	390.7352	36.9960	0.0947
Average	76.5166	78.3005	77.4855	77.8419	77.5361	0.7572	0.0098
Std Dev	52.5229	54.9848	53.6152	52.7099	53.4582	1.1240	0.0210
1%	11.9380	12.0529	10.7423	12.0514	11.6962	0.6382	0.0546
5%	21.0353	20.7417	19.9455	21.2990	20.7554	0.5859	0.0282
10%	26.3209	26.3155	25.9819	26.9276	26.3865	0.3940	0.0149
15%	30.7472	30.7802	30.5041	31.7653	30.9492	0.5578	0.0180
20%	34.7074	35.1669	34.5346	35.6725	35.0204	0.5101	0.0146
25%	38.4862	38.9013	38.8085	39.3917	38.8969	0.3747	0.0096
30%	41.8293	42.3064	42.6112	42.7085	42.3639	0.3954	0.0093
35%	45.6216	46.2158	46.3173	46.3268	46.1204	0.3363	0.0073
40%	49.4506	49.5844	49.9092	49.9395	49.7209	0.2415	0.0049
45%	53.1198	53.9029	54.0187	54.3281	53.8424	0.5141	0.0095
50%	57.3888	58.3741	58.4988	59.1934	58.3638	0.7432	0.0127
55%	62.5766	63.4975	63.7033	64.8766	63.6635	0.9456	0.0149
60%	69.7082	69.9676	70.2857	70.7342	70.1739	0.4419	0.0063
65%	78.0011	79.0563	79.2838	80.6301	79.2428	1.0806	0.0136
70%	96.0007	98.5568	98.9406	101.1620	98.6650	2.1151	0.0214
75%	112.4868	114.6233	114.5831	114.5424	114.0589	1.0486	0.0092
80%	123.3313	126.5185	124.8917	124.0514	124.6982	1.3709	0.0110
85%	133.8726	136.8315	135.2505	133.4447	134.8498	1.5294	0.0113
90%	147.0158	149.9257	146.9918	148.0202	147.9884	1.3776	0.0093
95%	178.9333	192.8858	178.9110	184.1608	183.7227	6.5890	0.0359
97%	205.8423	217.0898	209.1274	207.8096	209.9673	4.9365	0.0235
99%	234.6786	247.0445	243.7440	238.9554	241.1056	5.4210	0.0225
Kurtosis	1.81	2.23	2.31	1.68	2.01	0.31	
Skewness	1.33	1.40	1.37	1.28	1.34	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Fluorene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Fluorene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.2	0.003	0.000698
B4	14672.6484	480	0.004	2.072100
DT	4972.551866	170	0.001	0.248708
GA-SOIL-034	15095.61015	0.2	0.004	0.000888
GA-SOIL-035	16607.0695	2	0.005	0.009772
GA-SOIL-036	23561.84603	0.02	0.007	0.000139
GA-SOIL-037	15017.51629	2	0.004	0.008837
GA-SOIL-038	15343.86327	0.02	0.005	0.000090
NL	12774.66154	450	0.004	1.691308
PA	8753.206571	34	0.003	0.087560
PL	10125.82074	2.05	0.003	0.006107
SL	9699.688369	1.05	0.003	0.002996
SS001	21720.8328	0.0046875	0.006	0.000030
SS002	21287.95069	0.02725	0.006	0.000171
SS003	30957.72509	0.035125	0.009	0.000320
SS004	12645.49602	0.05125	0.004	0.000191
SS005	26243.98561	0.19175	0.008	0.001481
SS006	21747.84771	0.087	0.006	0.000557
SS007	19608.2255	0.01415	0.006	0.000082
SS008	26283.02726	0.012	0.008	0.000093
SS009	17570.65467	0.0085	0.005	0.000044
SS010	41313.99873	0.0165	0.012	0.000201
SS011	40869.24708	0.037	0.012	0.000445
SS012	42233.25367	0.03525	0.012	0.000438
SS013	44834.28452	0.0335	0.013	0.000442
SS014	44969.46063	0.032	0.013	0.000423
SS015	38040.97786	0.037	0.011	0.000414
SS016	44981.03583	0.0395	0.013	0.000523
SS017	44798.37514	0.0455	0.013	0.000600
SS018	26731.82539	0.034	0.008	0.000267
SS019	30006.23912	0.01575	0.009	0.000139
SS020	41174.71474	0.0029125	0.012	0.000035
SS021	39684.61871	0.395	0.012	0.004612
SS022	56197.65946	0.0016875	0.017	0.000028
SS023	54485.7066	0.02475	0.016	0.000397
SS024	42022.43063	0.0107	0.012	0.000132
SS025	43796.75729	0.038	0.013	0.000490
SS026	41192.24624	0.0271625	0.012	0.000329
SS027	41072.50452	0.0515	0.012	0.000622
SS028	15231.08133	0.054875	0.004	0.000246
SS029	33392.10298	0.002625	0.010	0.000026
SS030	33689.53265	0.0246	0.010	0.000244
SS031	35730.66059	0.01235	0.011	0.000130
SS032	35761.30671	0.041	0.011	0.000431
SS033	41508.59154	0.0008	0.012	0.000010
SS034	26449.04883	0.0295	0.008	0.000230
SS035	18730.95125	0.0065375	0.006	0.000036
SS036	23087.82278	0.233875	0.007	0.001589
SS037	14248.75367	0.355	0.004	0.001488
SS038	36642.70606	0.0160625	0.011	0.000173
SS039	36051.96541	0.0027375	0.011	0.000029
SS040	64967.81685	0.07475	0.019	0.001429
SS041	60317.71593	0.032025	0.018	0.000568
SS042	18282.48539	0.10525	0.005	0.000566
SS043	17422.39455	0.098	0.005	0.000502
SS044	17813.01082	0.945	0.005	0.004953
SS045	64410.78376	0.0139	0.019	0.000263
SS046	44819.31644	0.004775	0.013	0.000063
SS047	19795.35723	0.1350875	0.006	0.000787
SS048	34283.16064	0.0070625	0.010	0.000071
SS049	31906.28909	0.017875	0.009	0.000168
SS050	22962.10462	0.00925	0.007	0.000062
SS051	28342.92987	0.0545	0.008	0.000454
SS052	35907.07926	0.0594	0.011	0.000628
SS054	24873.23305	0.0505	0.007	0.000370
SS057	20289.37134	0.0026	0.006	0.000016
SS058	14094.40611	0.695	0.004	0.002882
SS059	30129.48501	0.31	0.009	0.002748
SS060	49138.56862	0.17	0.014	0.002458
SS062	75396.23963	0.028575	0.022	0.000634
SS064	43060.53438	0.01265	0.013	0.000160
SS066	35406.19652	0.0351125	0.010	0.000366
SS067	60631.65369	0.05975	0.018	0.001066
SS068	65814.66451	0.048933333	0.019	0.000948
SS069	85811.90034	0.0165	0.025	0.000417
SS070	53606.93651	0.106275	0.016	0.001676
SS071	15258.22418	0.00825	0.004	0.000037
SS072	14699.84093	0.0627	0.004	0.000271
SS073	36277.7988	0.345	0.011	0.003682
SS074	32138.57422	0.295	0.009	0.002789
SS075	18014.76694	0.0779	0.005	0.000413
SS076	18704.19348	0.13	0.006	0.000715
SS077	13054.98103	84.1345	0.004	0.323155
SS078	20418.57794	0.001175	0.006	0.000007
SS079	39554.34659	0.03625	0.012	0.000422
SS080	11679.29592	0.023375	0.003	0.000080
SS081	13080.04213	0.04875	0.004	0.000188
SS082	13261.71546	51.31	0.004	0.200199
SS083	15510.60141	0.0595	0.005	0.000272
SS084	23869.86934	0.02675	0.007	0.000188
SS085	40357.70732	0.315	0.012	0.003740
SS086	23258.04748	8.477625	0.007	0.058011
SS087	22447.91493	0.008	0.007	0.000053
SS088	35448.70895	0.039	0.010	0.000407
SS089	25110.63681	0.4	0.007	0.002955
SS090	44026.61233	0.2325	0.013	0.003012
SS091	51314.85984	0.06195	0.015	0.000935
SS092	53569.77669	0.0875	0.016	0.001379
SS093	50604.52317	0.03625	0.015	0.000540
SS094	23840.43886	212.523625	0.007	1.490673
SS095	23365.1818	0.0583	0.007	0.000401
SS096	26940.63055	0.1585	0.008	0.001256
SS097	18254.56533	0.002775	0.005	0.000015
SS098	17738.79744	0.02175	0.005	0.000114
SS099	10273.2786	0.13075	0.003	0.000395
SS100	17769.14005	137.55675	0.005	0.719133
SS101	21165.50257	427.8075	0.006	2.664022
TC	16219.01462	380	0.005	1.813297
TP1	23799.0914	900	0.007	6.301788
TP10	11875.61143	13000	0.003	45.421370
TP11	8615.913917	0.29	0.003	0.000735
TP13	12799.20604	440	0.004	1.656901
TP4	5966.83009	1300	0.002	2.282170
TP8	21725.03831	3.1	0.006	0.019815
TP9	10047.93106	1	0.003	0.002956
	3398905.59	18096.54	1.00	67.15

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0718	0.0887	0.1799	0.1204	0.1152	0.0476	0.4130
Max	475.2233	479.0185	489.8075	484.4101	482.1148	6.3646	0.0132
Average	62.2488	60.4748	59.8583	61.0169	60.8997	1.0164	0.0167
Std Dev	67.7529	66.7741	65.4229	66.6679	66.6544	0.9553	0.0143
1%	3.8899	3.9539	3.7782	3.9119	3.8835	0.0751	0.0193
5%	8.2978	8.3457	8.0496	8.1897	8.2207	0.1314	0.0160
10%	11.2325	11.5522	11.2015	11.6690	11.4138	0.2325	0.0204
15%	13.4566	13.6366	13.4024	13.6482	13.5359	0.1250	0.0092
20%	15.5307	15.5878	15.4765	15.6315	15.5566	0.0675	0.0043
25%	17.3569	17.6154	17.1950	17.3381	17.3764	0.1750	0.0101
30%	19.1694	19.3849	19.1742	19.2157	19.2360	0.1014	0.0053
35%	21.1294	20.9206	20.9857	20.9824	21.0045	0.0884	0.0042
40%	23.1343	22.9088	23.0275	22.7272	22.9494	0.1744	0.0076
45%	25.2437	24.8934	25.0444	24.9962	25.0444	0.1470	0.0059
50%	27.6523	27.2367	27.2323	27.2722	27.3484	0.2034	0.0074
55%	30.7061	29.5203	30.1126	29.8366	30.0439	0.5034	0.0168
60%	33.8343	32.8565	33.0009	33.1485	33.2100	0.4329	0.0130
65%	39.5304	37.6270	37.2857	38.7297	38.2932	1.0296	0.0269
70%	62.9180	47.2946	47.4359	51.6052	52.3134	7.3471	0.1404
75%	125.0321	123.8044	123.8277	124.2079	124.2180	0.5734	0.0046
80%	130.3829	128.8391	129.6994	129.7961	129.6794	0.6364	0.0049
85%	135.6278	134.3569	134.4798	134.9067	134.8428	0.5739	0.0043
90%	142.5225	141.4763	141.3517	141.6252	141.7440	0.5310	0.0037
95%	228.7101	162.3306	155.3555	165.4841	177.9701	34.0904	0.1916
97%	243.5297	244.1117	240.6903	243.4277	242.9399	1.5297	0.0063
99%	259.8802	258.2043	260.9785	259.5072	259.6426	1.1443	0.0044
Kurtosis	2.62	3.29	2.76	2.89	2.89	0.29	
Skewness	1.62	1.73	1.66	1.66	1.67	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Naphthalene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Naphthalene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.19	0.003	0.000663
B4	14672.6484	530	0.004	2.287943
DT	4972.551866	62	0.001	0.090705
GA-SOIL-034	15095.61015	1	0.004	0.004441
GA-SOIL-035	16607.0695	10	0.005	0.048860
GA-SOIL-036	23561.84603	0.1	0.007	0.000693
GA-SOIL-037	15017.51629	10	0.004	0.044183
GA-SOIL-038	15343.86327	0.1	0.005	0.000451
NL	12774.66154	250	0.004	0.939616
PA	8753.206571	39	0.003	0.100437
PL	10125.82074	2.05	0.003	0.006107
SL	9699.688369	0.35	0.003	0.000999
SS001	21720.8328	0.00154875	0.006	0.000010
SS002	21287.95069	0.08225	0.006	0.000515
SS003	30957.72509	0.053525	0.009	0.000488
SS004	12645.49602	0.082	0.004	0.000305
SS005	26243.98561	0.27475	0.008	0.002121
SS006	21747.84771	0.135	0.006	0.000864
SS007	19608.2255	0.02275875	0.006	0.000131
SS008	26283.02726	0.0315	0.008	0.000244
SS009	17570.65467	0.002775	0.005	0.000014
SS010	41313.99873	0.28	0.012	0.003403
SS011	40869.24708	0.2	0.012	0.002405
SS012	42233.25367	0.05325	0.012	0.000662
SS013	44834.28452	0.0435	0.013	0.000574
SS014	44969.46063	0.12	0.013	0.001588
SS015	38040.97786	0.129	0.011	0.001444
SS016	44981.03583	0.064	0.013	0.000847
SS017	44798.37514	0.0485	0.013	0.000639
SS018	26731.82539	0.0315	0.008	0.000248
SS019	30006.23912	0.02525	0.009	0.000223
SS020	41174.71474	0.004725	0.012	0.000057
SS021	39684.61871	0.765	0.012	0.008932
SS022	56197.65946	0.0022775	0.017	0.000038
SS023	54485.7066	0.0745	0.016	0.001194
SS024	42022.43063	0.02925	0.012	0.000362
SS025	43796.75729	0.039	0.013	0.000503
SS026	41192.24624	0.01313625	0.012	0.000159
SS027	41072.50452	0.046	0.012	0.000556
SS028	15231.08133	0.0584375	0.004	0.000262
SS029	33392.10298	0.00088375	0.010	0.000009
SS030	33689.53265	0.04409125	0.010	0.000437
SS031	35730.66059	0.012285	0.011	0.000129
SS032	35761.30671	0.0565	0.011	0.000594
SS033	41508.59154	0.0002725	0.012	0.000003
SS034	26449.04883	0.0305	0.008	0.000237
SS035	18730.95125	0.02038625	0.006	0.000112
SS036	23087.82278	0.052875	0.007	0.000359
SS037	14248.75367	0.72	0.004	0.003018
SS038	36642.70606	0.0031425	0.011	0.000034
SS039	36051.96541	0.0008925	0.011	0.000009
SS040	64967.81685	0.465	0.019	0.008888
SS041	60317.71593	0.08381625	0.018	0.001487
SS042	18282.48539	0.1525	0.005	0.000820
SS043	17422.39455	0.08225	0.005	0.000422
SS044	17813.01082	0.745	0.005	0.003904
SS045	64410.78376	0.012025	0.019	0.000228
SS046	44819.31644	0.0074875	0.013	0.000099
SS047	19795.35723	0.0314375	0.006	0.000183
SS048	34283.16064	0.04082	0.010	0.000412
SS049	31906.28909	0.030425	0.009	0.000286
SS050	22962.10462	0.0385	0.007	0.000260
SS051	28342.92987	0.0565	0.008	0.000471
SS052	35907.07926	0.031775	0.011	0.000336
SS054	24873.23305	0.57	0.007	0.004171
SS057	20289.37134	0.0057025	0.006	0.000034
SS058	14094.40611	2.135	0.004	0.008853
SS059	30129.48501	0.64	0.009	0.005673
SS060	49138.56862	0.215	0.014	0.003108
SS062	75396.23963	0.09153	0.022	0.002030
SS064	43060.53438	0.0240725	0.013	0.000305
SS066	35406.19652	0.03506625	0.010	0.000365
SS067	60631.65369	0.3375	0.018	0.006021
SS068	65814.66451	0.039635	0.019	0.000767
SS069	85811.90034	0.0495	0.025	0.001250
SS070	53606.93651	0.1564	0.016	0.002467
SS071	15258.22418	0.031	0.004	0.000139
SS072	14699.84093	0.1228175	0.004	0.000531
SS073	36277.7988	0.785	0.011	0.008379
SS074	32138.57422	0.815	0.009	0.007706
SS075	18014.76694	0.4815	0.005	0.002552
SS076	18704.19348	0.325	0.006	0.001788
SS077	13054.98103	90.63	0.004	0.348104
SS078	20418.57794	0.00027	0.006	0.000002
SS079	39554.34659	0.12	0.012	0.001396
SS080	11679.29592	0.02538375	0.003	0.000087
SS081	13080.04213	0.245	0.004	0.000943
SS082	13261.71546	1.437475	0.004	0.005609
SS083	15510.60141	0.325	0.005	0.001483
SS084	23869.86934	0.0678925	0.007	0.000477
SS085	40357.70732	0.31	0.012	0.003681
SS086	23258.04748	0.40331875	0.007	0.002760
SS087	22447.91493	0.068	0.007	0.000449
SS088	35448.70895	0.09925	0.010	0.001035
SS089	25110.63681	0.405	0.007	0.002992
SS090	44026.61233	0.285	0.013	0.003692
SS091	51314.85984	0.16852125	0.015	0.002544
SS092	53569.77669	0.4	0.016	0.006304
SS093	50604.52317	0.0615	0.015	0.000916
SS094	23840.43886	278.5245	0.007	1.953613
SS095	23365.1818	0.21157	0.007	0.001454
SS096	26940.63055	0.1645625	0.008	0.001304
SS097	18254.56533	0.00093	0.005	0.000005
SS098	17738.79744	0.01676875	0.005	0.000088
SS099	10273.2786	0.13661625	0.003	0.000413
SS100	17769.14005	232.675	0.005	1.216402
SS101	21165.50257	532.745	0.006	3.317484
TC	16219.01462	110	0.005	0.524902
TP1	23799.0914	1700	0.007	11.903377
TP10	11875.61143	13000	0.003	45.421370
TP11	8615.913917	7.6	0.003	0.019265
TP13	12799.20604	7.2	0.004	0.027113
TP4	5966.83009	7250	0.002	12.727484
TP8	21725.03831	0.5	0.006	0.003196
TP9	10047.93106	1.5	0.003	0.004434
	3398905.59	24134.36	1.00	81.14

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.2128	0.1637	0.1523	0.2300	0.1897	0.0376	0.1980
Max	517.4520	514.0662	494.7310	482.8850	502.2836	16.3530	0.0326
Average	71.6152	73.4569	73.5539	73.1997	72.9564	0.9065	0.0124
Std Dev	71.7234	71.2970	71.6814	70.9319	71.4085	0.3711	0.0052
1%	2.6164	2.5790	2.7503	2.3966	2.5856	0.1459	0.0564
5%	6.1069	6.6808	6.7517	6.1871	6.4316	0.3315	0.0515
10%	9.1353	9.6248	9.4044	9.4117	9.3940	0.2005	0.0213
15%	11.7738	12.5038	12.1272	12.5791	12.2460	0.3717	0.0304
20%	15.0118	15.9038	15.9282	16.0982	15.7355	0.4901	0.0311
25%	18.4597	19.3008	19.2699	19.5621	19.1481	0.4773	0.0249
30%	21.6529	22.3222	22.3548	22.7055	22.2589	0.4397	0.0198
35%	24.4503	25.0149	24.9519	25.5145	24.9829	0.4352	0.0174
40%	27.4484	28.2728	28.0027	28.7760	28.1250	0.5533	0.0197
45%	31.9457	32.9440	32.6751	33.9184	32.8708	0.8159	0.0248
50%	36.6587	38.4237	38.5618	39.0026	38.1617	1.0319	0.0270
55%	43.3011	47.2025	46.9671	47.4229	46.2234	1.9570	0.0423
60%	64.8934	69.1215	69.6443	69.4394	68.2746	2.2644	0.0332
65%	82.6642	87.0261	86.3415	86.5958	85.6569	2.0150	0.0235
70%	112.1159	117.3110	117.1715	115.8946	115.6233	2.4235	0.0210
75%	123.2412	125.8943	125.6647	125.1742	124.9936	1.2062	0.0097
80%	132.3561	134.1658	134.4475	133.0369	133.5016	0.9771	0.0073
85%	141.1106	142.9247	143.0339	141.6874	142.1891	0.9433	0.0066
90%	155.1066	161.2526	161.4592	158.4428	159.0653	2.9762	0.0187
95%	229.3643	228.1896	227.1800	219.3501	226.0210	4.5360	0.0201
97%	248.7103	246.6765	246.5133	245.9167	246.9542	1.2154	0.0049
99%	305.4284	299.4552	298.4716	294.0822	299.3593	4.6719	0.0156
Kurtosis	2.15	1.65	1.69	2.11	1.90	0.26	
Skewness	1.45	1.32	1.33	1.39	1.37	0.06	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

2-Methylnaphthalene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	2-Methylnaphthalene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	2.3	0.003	0.008043
B3	11857.58262	0.75	0.003	0.002616
B4	14672.6484	400	0.004	1.726750
DT	4972.551866	58	0.001	0.084853
NL	12774.66154	68	0.004	0.255575
PA	8753.206571	120	0.003	0.309036
PL	10125.82074	10.5	0.003	0.031281
SL	9699.688369	9	0.003	0.025684
SS001	25418.94529	0.0046875	0.007	0.000035
SS002	35691.37797	0.0475	0.011	0.000499
SS003	37428.09461	0.0355	0.011	0.000391
SS004	32569.59313	0.0795	0.010	0.000762
SS005	26243.98561	0.20325	0.008	0.001569
SS006	24646.95624	0.1245	0.007	0.000903
SS007	24788.07955	0.015025	0.007	0.000110
SS008	26283.02726	0.012	0.008	0.000093
SS009	27942.57571	0.0085	0.008	0.000070
SS010	44987.14444	0.1575	0.013	0.002085
SS011	44985.82462	0.18	0.013	0.002382
SS012	44989.42087	0.032	0.013	0.000424
SS013	45001.8662	0.032	0.013	0.000424
SS014	44969.46063	0.135	0.013	0.001786
SS015	44979.53162	0.112	0.013	0.001482
SS016	44981.03583	0.053	0.013	0.000701
SS017	44798.37514	0.0365	0.013	0.000481
SS018	31703.76762	0.013	0.009	0.000121
SS019	30006.23912	0.0215	0.009	0.000190
SS020	41174.71474	0.0041125	0.012	0.000050
SS021	39684.61871	0.53	0.012	0.006188
SS022	56252.70658	0.0015125	0.017	0.000025
SS023	54485.7066	0.05925	0.016	0.000950
SS024	42022.43063	0.02595	0.012	0.000321
SS025	43796.75729	0.029	0.013	0.000374
SS026	41192.24624	0.0271625	0.012	0.000329
SS027	41072.50452	0.02325	0.012	0.000281
SS028	15231.08133	0.029875	0.004	0.000134
SS029	33392.10298	0.002625	0.010	0.000026
SS030	33689.53265	0.037633333	0.010	0.000373
SS031	35730.66059	0.00885	0.011	0.000093
SS032	35761.30671	0.041	0.011	0.000431
SS033	41508.59154	0.0008	0.012	0.000010
SS034	26449.04883	0.01625	0.008	0.000126
SS035	18730.95125	0.0124125	0.006	0.000068
SS036	23087.82278	0.0695	0.007	0.000472
SS037	14248.75367	0.45	0.004	0.001886
SS038	36642.70606	0.0088125	0.011	0.000095
SS039	36051.96541	0.0027375	0.011	0.000029
SS040	64967.81685	0.38	0.019	0.007263
SS041	60317.71593	0.0561625	0.018	0.000997
SS042	18282.48539	0.121	0.005	0.000651
SS043	17422.39455	0.07	0.005	0.000359
SS044	17813.01082	0.42	0.005	0.002201
SS045	64410.78376	0.007275	0.019	0.000138
SS046	44819.31644	0.005175	0.013	0.000068
SS047	19795.35723	0.020825	0.006	0.000121
SS048	34283.16064	0.02695	0.010	0.000272
SS049	31906.28909	0.0245	0.009	0.000230
SS050	22962.10462	0.0295	0.007	0.000199
SS051	28342.92987	0.0395	0.008	0.000329
SS052	35907.07926	0.03955	0.011	0.000418
SS054	24873.23305	0.3675	0.007	0.002689
SS057	20289.37134	0.0063625	0.006	0.000038
SS058	14094.40611	1.69	0.004	0.007008
SS059	30129.48501	0.4	0.009	0.003546
SS060	49138.56862	0.17	0.014	0.002458
SS062	75396.23963	0.034575	0.022	0.000767
SS064	43060.53438	0.0259	0.013	0.000328
SS066	35406.19652	0.0179	0.010	0.000186
SS067	60631.65369	0.2325	0.018	0.004147
SS068	65814.66451	0.038425	0.019	0.000744
SS069	85811.90034	0.0295	0.025	0.000745
SS070	53606.93651	0.095625	0.016	0.001508
SS071	15258.22418	0.0295	0.004	0.000132
SS072	14699.84093	0.1252	0.004	0.000541
SS073	36277.7988	0.435	0.011	0.004643
SS074	32138.57422	0.505	0.009	0.004775
SS075	18014.76694	0.30125	0.005	0.001597
SS076	18704.19348	0.23	0.006	0.001266
SS077	13054.98103	51.302	0.004	0.197048
SS078	20418.57794	0.0008	0.006	0.000005
SS079	39554.34659	0.04775	0.012	0.000556
SS080	11679.29592	0.0169	0.003	0.000058
SS081	13080.04213	0.165	0.004	0.000635
SS082	13261.71546	4.071	0.004	0.015884
SS083	15510.60141	0.19	0.005	0.000867
SS084	23869.86934	0.039225	0.007	0.000275
SS085	40357.70732	0.21	0.012	0.002493
SS086	23258.04748	1.8147125	0.007	0.012418
SS087	22447.91493	0.0425	0.007	0.000281
SS088	35448.70895	0.06975	0.010	0.000727
SS089	25110.63681	0.31	0.007	0.002290
SS090	44026.61233	0.175	0.013	0.002267
SS091	51314.85984	0.1147125	0.015	0.001732
SS092	53569.77669	0.295	0.016	0.004649
SS093	50604.52317	0.04025	0.015	0.000599
SS094	23840.43886	155.768875	0.007	1.092586
SS095	23365.1818	0.227025	0.007	0.001561
SS096	26940.63055	0.09725	0.008	0.000771
SS097	18254.56533	0.002775	0.005	0.000015
SS098	17738.79744	0.0118375	0.005	0.000062
SS099	10273.2786	0.073825	0.003	0.000223
SS100	17769.14005	97.5825	0.005	0.510152
SS101	21165.50257	322.64	0.006	2.009128
TC	16219.01462	650	0.005	3.101692
TP1	23799.0914	560	0.007	3.921112
TP10	11875.61143	10000	0.003	34.939515
TP11	8615.913917	0.365	0.003	0.000925
TP13	12799.20604	17.5	0.004	0.065899
TP4	5966.83009	1575	0.002	2.764936
TP8	21725.03831	33	0.006	0.210929
TP9	10047.93106	1.95	0.003	0.005765
	3,398,905.59	14,150.33	1.00	51.39

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.1480	0.2208	0.1966	0.1196	0.1713	0.0458	0.2677
Max	301.2221	396.4259	307.6644	381.9910	346.8258	49.3629	0.1423
Average	46.2047	45.5683	44.8063	44.3394	45.2297	0.8241	0.0182
Std Dev	52.7829	52.1125	50.5914	51.4634	51.7375	0.9349	0.0181
1%	1.8409	1.6570	1.5359	1.7651	1.6997	0.1328	0.0781
5%	4.6790	4.3972	4.5813	4.7214	4.5947	0.1442	0.0314
10%	6.8780	6.7211	7.0069	6.7046	6.8276	0.1428	0.0209
15%	8.4244	8.3917	8.5270	8.3964	8.4349	0.0631	0.0075
20%	9.8860	9.8195	9.9555	9.8915	9.8881	0.0556	0.0056
25%	11.3611	11.2295	11.1887	11.3728	11.2880	0.0928	0.0082
30%	12.8704	12.5845	12.7128	12.8655	12.7583	0.1370	0.0107
35%	14.4041	14.0398	14.1948	14.2783	14.2293	0.1528	0.0107
40%	16.0507	15.3423	15.8271	15.8182	15.7595	0.2982	0.0189
45%	18.0015	17.1623	17.4342	17.4561	17.5135	0.3517	0.0201
50%	19.9965	19.1038	19.3581	19.0718	19.3826	0.4289	0.0221
55%	22.1776	21.4883	21.5855	21.1311	21.5956	0.4344	0.0201
60%	25.1006	24.5483	24.3918	23.6853	24.4315	0.5830	0.0239
65%	29.0834	28.7618	29.0037	27.0983	28.4868	0.9357	0.0328
70%	39.0919	37.8422	36.7381	33.1900	36.7155	2.5395	0.0692
75%	97.0097	96.7652	96.1880	95.3524	96.3288	0.7365	0.0076
80%	101.3445	101.3079	100.9927	100.6649	101.0775	0.3172	0.0031
85%	105.7887	105.8211	105.0866	105.0154	105.4280	0.4364	0.0041
90%	111.4634	111.9409	110.8101	111.5124	111.4317	0.4666	0.0042
95%	130.2402	125.3460	123.2673	125.9784	126.2080	2.9270	0.0232
97%	189.5392	190.0599	190.1306	190.8099	190.1349	0.5216	0.0027
99%	207.7374	204.7807	203.0044	204.7671	205.0724	1.9628	0.0096
Kurtosis	2.61	2.75	2.17	2.84	2.59	0.30	
Skewness	1.65	1.63	1.57	1.70	1.64	0.05	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Phenanthrene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Phenanthrene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.19	0.003	0.000663
B4	14672.6484	2000	0.004	8.633749
DT	4972.551866	620	0.001	0.907051
GA-SOIL-034	15095.61015	1.1	0.004	0.004885
GA-SOIL-035	16607.0695	2.9	0.005	0.014169
GA-SOIL-036	23561.84603	0.018	0.007	0.000125
GA-SOIL-037	15017.51629	1.8	0.004	0.007953
GA-SOIL-038	15343.86327	0.02	0.005	0.000090
NL	12774.66154	830	0.004	3.119524
PA	8753.206571	550	0.003	1.416416
PL	10125.82074	0.59	0.003	0.001758
SL	9699.688369	6.6	0.003	0.018835
SS001	21720.8328	0.0554625	0.006	0.000354
SS002	21287.95069	0.1675	0.006	0.001049
SS003	30957.72509	0.266125	0.009	0.002424
SS004	12645.49602	0.2225	0.004	0.000828
SS005	26243.98561	0.83525	0.008	0.006449
SS006	21747.84771	0.715	0.006	0.004575
SS007	19608.2255	0.0536125	0.006	0.000309
SS008	26283.02726	0.2505	0.008	0.001937
SS009	17570.65467	0.045	0.005	0.000233
SS010	41313.99873	0.6675	0.012	0.008114
SS011	40869.24708	0.58	0.012	0.006974
SS012	42233.25367	0.1475	0.012	0.001833
SS013	44834.28452	0.32	0.013	0.004221
SS014	44969.46063	0.33	0.013	0.004366
SS015	38040.97786	0.295	0.011	0.003302
SS016	44981.03583	0.25	0.013	0.003308
SS017	44798.37514	0.275	0.013	0.003625
SS018	26731.82539	0.215	0.008	0.001691
SS019	30006.23912	0.315	0.009	0.002781
SS020	41174.71474	0.0353	0.012	0.000428
SS021	39684.61871	3.25	0.012	0.037946
SS022	56197.65946	0.0029875	0.017	0.000049
SS023	54485.7066	0.34375	0.016	0.005510
SS024	42022.43063	0.075	0.012	0.000927
SS025	43796.75729	0.265	0.013	0.003415
SS026	41192.24624	0.1091375	0.012	0.001323
SS027	41072.50452	0.265	0.012	0.003202
SS028	15231.08133	0.274625	0.004	0.001231
SS029	33392.10298	0.0066625	0.010	0.000065
SS030	33689.53265	0.1632	0.010	0.001618
SS031	35730.66059	0.0529125	0.011	0.000556
SS032	35761.30671	0.455	0.011	0.004787
SS033	41508.59154	0.001775	0.012	0.000022
SS034	26449.04883	0.3	0.008	0.002334
SS035	18730.95125	0.062675	0.006	0.000345
SS036	23087.82278	1.51375	0.007	0.010282
SS037	14248.75367	2.1	0.004	0.008804
SS038	36642.70606	0.2269	0.011	0.002446
SS039	36051.96541	0.0463375	0.011	0.000491
SS040	64967.81685	1.15	0.019	0.021981
SS041	60317.71593	0.1343625	0.018	0.002384
SS042	18282.48539	0.6	0.005	0.003227
SS043	17422.39455	0.455	0.005	0.002332
SS044	17813.01082	2.6	0.005	0.013626
SS045	64410.78376	0.0491875	0.019	0.000932
SS046	44819.31644	0.1342	0.013	0.001770
SS047	19795.35723	0.44	0.006	0.002563
SS048	34283.16064	0.104	0.010	0.001049
SS049	31906.28909	0.189	0.009	0.001774
SS050	22962.10462	0.165	0.007	0.001115
SS051	28342.92987	0.57	0.008	0.004753
SS052	35907.07926	0.29925	0.011	0.003161
SS054	24873.23305	1.15	0.007	0.008416
SS057	20289.37134	0.018275	0.006	0.000109
SS058	14094.40611	9.4	0.004	0.038979
SS059	30129.48501	2.35	0.009	0.020831
SS060	49138.56862	0.885	0.014	0.012795
SS062	75396.23963	0.3741875	0.022	0.008300
SS064	43060.53438	0.1605	0.013	0.002033
SS066	35406.19652	0.1825	0.010	0.001901
SS067	60631.65369	1.2	0.018	0.021406
SS068	65814.66451	0.1713375	0.019	0.003318
SS069	85811.90034	0.21	0.025	0.005302
SS070	53606.93651	0.6735	0.016	0.010622
SS071	15258.22418	0.135	0.004	0.000606
SS072	14699.84093	0.996	0.004	0.004308
SS073	36277.7988	2.3	0.011	0.024549
SS074	32138.57422	2.5	0.009	0.023639
SS075	18014.76694	1.11825	0.005	0.005927
SS076	18704.19348	1.6	0.006	0.008805
SS077	13054.98103	227.765	0.004	0.874831
SS078	20418.57794	0.00175	0.006	0.000011
SS079	39554.34659	0.65	0.012	0.007564
SS080	11679.29592	0.14375	0.003	0.000494
SS081	13080.04213	0.63	0.004	0.002424
SS082	13261.71546	133.7775	0.004	0.521968
SS083	15510.60141	0.64	0.005	0.002921
SS084	23869.86934	0.06415	0.007	0.000451
SS085	40357.70732	1.12	0.012	0.013299
SS086	23258.04748	29.39625	0.007	0.201153
SS087	22447.91493	0.395	0.007	0.002609
SS088	35448.70895	0.34575	0.010	0.003606
SS089	25110.63681	2.8	0.007	0.020686
SS090	44026.61233	0.9	0.013	0.011658
SS091	51314.85984	0.770616667	0.015	0.011634
SS092	53569.77669	1.5	0.016	0.023641
SS093	50604.52317	0.285	0.015	0.004243
SS094	23840.43886	775.09375	0.007	5.436625
SS095	23365.1818	0.44	0.007	0.003025
SS096	26940.63055	0.77225	0.008	0.006121
SS097	18254.56533	0.023675	0.005	0.000127
SS098	17738.79744	0.06325	0.005	0.000330
SS099	10273.2786	0.45625	0.003	0.001379
SS100	17769.14005	607.86	0.005	3.177832
SS101	21165.50257	1150.975	0.006	7.167297
TC	16219.01462	820	0.005	3.912904
TP1	23799.0914	2200	0.007	15.404371
TP10	11875.61143	26000	0.003	90.842740
TP11	8615.913917	0.15	0.003	0.000380
TP13	12799.20604	180	0.004	0.677823
TP4	5966.83009	6100	0.002	10.708642
TP8	21725.03831	6.8	0.006	0.043464
TP9	10047.93106	3.6	0.003	0.010642
	3398905.59	42309.46	1.00	153.63

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.7150	0.5736	0.8443	0.6870	0.7050	0.1112	0.1577
Max	945.7017	975.3958	1027.7948	966.5471	978.8598	34.9175	0.0357
Average	135.1747	138.1929	138.8175	136.0503	137.0588	1.7268	0.0126
Std Dev	132.0981	133.8061	134.5549	132.9869	133.3615	1.0581	0.0079
1%	10.6261	9.4442	10.5201	11.0966	10.4217	0.6982	0.0670
5%	21.7379	22.5462	21.9972	21.7418	22.0058	0.3802	0.0173
10%	29.2294	30.6953	29.8585	29.1769	29.7400	0.7082	0.0238
15%	35.0979	36.5431	35.6784	35.1925	35.6280	0.6610	0.0186
20%	41.1218	41.6536	41.2044	40.0980	41.0195	0.6572	0.0160
25%	46.6303	47.0898	46.0133	45.8747	46.4020	0.5640	0.0122
30%	51.7040	51.8875	50.6296	51.1436	51.3412	0.5703	0.0111
35%	56.6199	57.0951	55.8131	55.9835	56.3779	0.5909	0.0105
40%	61.9076	62.5721	62.0498	61.5474	62.0192	0.4249	0.0069
45%	67.3095	68.6271	68.2343	67.5831	67.9385	0.6010	0.0088
50%	74.0853	75.9810	76.0274	74.1592	75.0632	1.0871	0.0145
55%	81.1114	84.3432	84.8339	82.3855	83.1685	1.7319	0.0208
60%	92.0079	94.0911	94.7554	92.7713	93.4064	1.2447	0.0133
65%	105.4912	110.7115	111.1110	106.8626	108.5441	2.7949	0.0257
70%	132.6289	145.6750	150.3846	135.7908	141.1198	8.3082	0.0589
75%	250.9641	255.0332	255.9952	252.2243	253.5542	2.3539	0.0093
80%	270.2312	269.3429	271.3041	269.9073	270.1964	0.8247	0.0031
85%	284.7735	284.9530	286.1195	285.6744	285.3801	0.6282	0.0022
90%	307.7841	306.2984	307.9192	309.3271	307.8322	1.2379	0.0040
95%	362.1554	368.8621	368.2842	359.4078	364.6774	4.6422	0.0127
97%	490.6515	498.3676	495.2381	491.3985	493.9139	3.5852	0.0073
99%	547.2634	541.5870	547.1861	549.8110	546.4619	3.4712	0.0064
Kurtosis	2.64	2.68	2.53	2.83	2.67	0.12	
Skewness	1.61	1.60	1.57	1.62	1.60	0.02	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pyrene Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Pyrene (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.56	0.003	0.001954
B4	14672.6484	740	0.004	3.194487
DT	4972.551866	490	0.001	0.716863
GA-SOIL-034	15095.61015	1.1	0.004	0.004885
GA-SOIL-035	16607.0695	7.3	0.005	0.035668
GA-SOIL-036	23561.84603	0.051	0.007	0.000354
GA-SOIL-037	15017.51629	8.7	0.004	0.038440
GA-SOIL-038	15343.86327	0.042	0.005	0.000190
NL	12774.66154	400	0.004	1.503385
PA	8753.206571	370	0.003	0.952862
PL	10125.82074	8.7	0.003	0.025919
SL	9699.688369	27	0.003	0.077052
SS001	21720.8328	0.265875	0.006	0.001699
SS002	21287.95069	1.25	0.006	0.007829
SS003	30957.72509	2.03875	0.009	0.018569
SS004	12645.49602	1.225	0.004	0.004558
SS005	26243.98561	3.7425	0.008	0.028897
SS006	21747.84771	1.85	0.006	0.011837
SS007	19608.2255	0.363625	0.006	0.002098
SS008	26283.02726	3.95	0.008	0.030545
SS009	17570.65467	0.22	0.005	0.001137
SS010	41313.99873	0.825	0.012	0.010028
SS011	40869.24708	0.85	0.012	0.010221
SS012	42233.25367	1.45	0.012	0.018017
SS013	44834.28452	5.2	0.013	0.068592
SS014	44969.46063	1.6	0.013	0.021169
SS015	38040.97786	1.19	0.011	0.013319
SS016	44981.03583	4.25	0.013	0.056244
SS017	44798.37514	2.05	0.013	0.027019
SS018	26731.82539	4.85	0.008	0.038144
SS019	30006.23912	0.68	0.009	0.006003
SS020	41174.71474	0.299625	0.012	0.003630
SS021	39684.61871	15	0.012	0.175136
SS022	56197.65946	0.032125	0.017	0.000531
SS023	54485.7066	2.3425	0.016	0.037551
SS024	42022.43063	0.547	0.012	0.006763
SS025	43796.75729	3.45	0.013	0.044455
SS026	41192.24624	1.726625	0.012	0.020925
SS027	41072.50452	2.5	0.012	0.030210
SS028	15231.08133	10.2	0.004	0.045708
SS029	33392.10298	0.0226425	0.010	0.000222
SS030	33689.53265	1.29175	0.010	0.012804
SS031	35730.66059	0.4375	0.011	0.004599
SS032	35761.30671	3.45	0.011	0.036299
SS033	41508.59154	0.002885	0.012	0.000035
SS034	26449.04883	1.7	0.008	0.013229
SS035	18730.95125	0.464	0.006	0.002557
SS036	23087.82278	1.42125	0.007	0.009654
SS037	14248.75367	7.5	0.004	0.031441
SS038	36642.70606	1.1184625	0.011	0.012058
SS039	36051.96541	0.1941375	0.011	0.002059
SS040	64967.81685	2.8	0.019	0.053520
SS041	60317.71593	0.59325	0.018	0.010528
SS042	18282.48539	7.475	0.005	0.040208
SS043	17422.39455	3.9	0.005	0.019991
SS044	17813.01082	16.5	0.005	0.086473
SS045	64410.78376	0.84125	0.019	0.015942
SS046	44819.31644	1.366	0.013	0.018013
SS047	19795.35723	2.0075	0.006	0.011692
SS048	34283.16064	0.50125	0.010	0.005056
SS049	31906.28909	1.0125	0.009	0.009505
SS050	22962.10462	2	0.007	0.013511
SS051	28342.92987	5.95	0.008	0.049616
SS052	35907.07926	3.2225	0.011	0.034043
SS054	24873.23305	2.325	0.007	0.017014
SS057	20289.37134	0.04627	0.006	0.000276
SS058	14094.40611	220	0.004	0.912285
SS059	30129.48501	7.8	0.009	0.069143
SS060	49138.56862	3.05	0.014	0.044094
SS062	75396.23963	2.9185	0.022	0.064740
SS064	43060.53438	0.955	0.013	0.012099
SS066	35406.19652	0.46125	0.010	0.004805
SS067	60631.65369	11.15	0.018	0.198900
SS068	65814.66451	1.74125	0.019	0.033717
SS069	85811.90034	1.75	0.025	0.044182
SS070	53606.93651	8.4875	0.016	0.133863
SS071	15258.22418	0.36	0.004	0.001616
SS072	14699.84093	3.255	0.004	0.014077
SS073	36277.7988	8.45	0.011	0.090190
SS074	32138.57422	14	0.009	0.132378
SS075	18014.76694	8.372	0.005	0.044373
SS076	18704.19348	9.65	0.006	0.053104
SS077	13054.98103	96.55	0.004	0.370842
SS078	20418.57794	0.06	0.006	0.000360
SS079	39554.34659	3.85	0.012	0.044804
SS080	11679.29592	0.2525	0.003	0.000868
SS081	13080.04213	3.3	0.004	0.012699
SS082	13261.71546	144.085	0.004	0.562185
SS083	15510.60141	2.1	0.005	0.009583
SS084	23869.86934	0.33014625	0.007	0.002319
SS085	40357.70732	8.9	0.012	0.105676
SS086	23258.04748	14.5625	0.007	0.099648
SS087	22447.91493	2.45	0.007	0.016181
SS088	35448.70895	2.11025	0.010	0.022009
SS089	25110.63681	17.5	0.007	0.129288
SS090	44026.61233	5.425	0.013	0.070271
SS091	51314.85984	3.728	0.015	0.056283
SS092	53569.77669	8.85	0.016	0.139484
SS093	50604.52317	2.3	0.015	0.034243
SS094	23840.43886	293.2875	0.007	2.057163
SS095	23365.1818	1.118025	0.007	0.007686
SS096	26940.63055	21.0125	0.008	0.166551
SS097	18254.56533	0.0769	0.005	0.000413
SS098	17738.79744	0.34175	0.005	0.001784
SS099	10273.2786	2.685	0.003	0.008115
SS100	17769.14005	151.85	0.005	0.793857
SS101	21165.50257	394	0.006	2.453498
TC	16219.01462	610	0.005	2.910819
TP1	23799.0914	1300	0.007	9.102583
TP10	11875.61143	6300	0.003	22.011895
TP11	8615.913917	120	0.003	0.304189
TP13	12799.20604	540	0.004	2.033470
TP4	5966.83009	1210	0.002	2.124173
TP8	21725.03831	3.9	0.006	0.024928
TP9	10047.93106	9.3	0.003	0.027493
	3398905.59	13772.82	1.00	55.37

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	3.6664	4.1632	3.6518	4.9696	4.1127	0.6187	0.1504
Max	267.7832	308.4892	311.6708	230.8200	279.6908	38.2196	0.1366
Average	52.9761	52.7851	53.0340	53.0828	52.9695	0.1304	0.0025
Std Dev	34.7742	34.6968	34.2616	34.0062	34.4347	0.3640	0.0106
1%	10.1053	9.7125	10.0812	9.9305	9.9574	0.1807	0.0181
5%	16.0409	15.8759	15.8085	16.0101	15.9339	0.1101	0.0069
10%	19.5614	19.9497	20.0752	19.7757	19.8405	0.2229	0.0112
15%	22.7413	23.1132	23.1479	23.0837	23.0215	0.1886	0.0082
20%	25.2666	25.5882	25.7298	25.6816	25.5665	0.2084	0.0082
25%	27.7038	28.0243	28.1568	28.2553	28.0350	0.2402	0.0086
30%	30.0002	30.3381	30.7048	30.6402	30.4208	0.3228	0.0106
35%	32.5769	32.6716	33.0556	33.1565	32.8652	0.2838	0.0086
40%	35.3085	34.9119	35.5670	35.6721	35.3649	0.3385	0.0096
45%	38.0583	37.3781	38.2255	38.3452	38.0018	0.4321	0.0114
50%	40.9973	40.6382	41.0095	41.0269	40.9180	0.1869	0.0046
55%	44.7585	43.8105	44.2202	44.4841	44.3183	0.4036	0.0091
60%	48.8141	48.2150	48.8003	48.7935	48.6557	0.2940	0.0060
65%	54.9372	54.6992	54.9405	55.6053	55.0455	0.3899	0.0071
70%	66.1917	65.7973	66.3869	67.9387	66.5787	0.9393	0.0141
75%	75.6301	75.3485	75.5682	76.9402	75.8717	0.7225	0.0095
80%	82.5179	82.5050	82.7834	83.1431	82.7374	0.2994	0.0036
85%	89.6360	89.4212	89.8060	89.9811	89.7111	0.2391	0.0027
90%	98.2679	98.1469	98.3443	97.9480	98.1768	0.1728	0.0018
95%	120.6789	121.1377	122.9695	118.6270	120.8533	1.7838	0.0148
97%	139.9432	138.6857	137.6934	137.3897	138.4280	1.1518	0.0083
99%	159.4447	161.7944	156.0505	156.1517	158.3603	2.7798	0.0176
Kurtosis	2.38	2.48	2.16	1.64	2.16	0.38	
Skewness	1.40	1.42	1.34	1.26	1.36	0.07	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

Pentachlorophenol Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	Pentachlorophenol (mg/kg)	% of Area	Weighted Avg
B1	11886.49744	0.95	0.003	0.003322
B3	11857.58262	0.11	0.003	0.000384
B4	14672.6484	32	0.004	0.138140
DT	4972.551866	50	0.001	0.073149
GA-SOIL-034	15095.61015	0.003	0.004	0.000013
GA-SOIL-035	16607.0695	0.094	0.005	0.000459
GA-SOIL-036	23561.84603	0.028	0.007	0.000194
GA-SOIL-037	15017.51629	0.7	0.004	0.003093
GA-SOIL-038	15343.86327	0.006	0.005	0.000027
NL	12774.66154	240	0.004	0.902031
PA	8753.206571	39	0.003	0.100437
PL	10125.82074	2.05	0.003	0.006107
SL	9699.688369	1.75	0.003	0.004994
SS001	21720.8328	0.0577025	0.006	0.000369
SS002	21287.95069	0.185	0.006	0.001159
SS003	30957.72509	0.040175	0.009	0.000366
SS004	12645.49602	0.05425	0.004	0.000202
SS005	26243.98561	0.228	0.008	0.001760
SS006	21747.84771	0.52	0.006	0.003327
SS007	19608.2255	0.18138	0.006	0.001046
SS008	26283.02726	0.53	0.008	0.004098
SS009	17570.65467	0.19	0.005	0.000982
SS010	41313.99873	0.05675	0.012	0.000690
SS011	40869.24708	0.0465	0.012	0.000559
SS012	42233.25367	0.615	0.012	0.007642
SS013	44834.28452	0.5	0.013	0.006595
SS014	44969.46063	0.295	0.013	0.003903
SS015	38040.97786	0.23	0.011	0.002574
SS016	44981.03583	0.685	0.013	0.009065
SS017	44798.37514	1.06	0.013	0.013971
SS018	26731.82539	0.49	0.008	0.003854
SS019	30006.23912	0.118	0.009	0.001042
SS020	41174.71474	0.253	0.012	0.003065
SS021	39684.61871	11.45	0.012	0.133687
SS022	56197.65946	0.00861	0.017	0.000142
SS023	54485.7066	0.8675	0.016	0.013906
SS024	42022.43063	0.0257375	0.012	0.000318
SS025	43796.75729	4.6	0.013	0.059274
SS026	41192.24624	0.76805	0.012	0.009308
SS027	41072.50452	1.15	0.012	0.013897
SS028	15231.08133	84.8675	0.004	0.380306
SS029	33392.10298	0.0277875	0.010	0.000273
SS030	33689.53265	0.0020325	0.010	0.000020
SS031	35730.66059	0.100925	0.011	0.001061
SS032	35761.30671	1.85	0.011	0.019465
SS033	41508.59154	0.0003725	0.012	0.000005
SS034	26449.04883	0.83	0.008	0.006459
SS035	18730.95125	0.0561225	0.006	0.000309
SS036	23087.82278	0.13075	0.007	0.000888
SS037	14248.75367	0.815	0.004	0.003417
SS038	36642.70606	0.502375	0.011	0.005416
SS039	36051.96541	0.076875	0.011	0.000815
SS040	64967.81685	4.85	0.019	0.092705
SS041	60317.71593	0.185125	0.018	0.003285
SS042	18282.48539	0.36	0.005	0.001936
SS043	17422.39455	0.69	0.005	0.003537
SS044	17813.01082	4	0.005	0.020963
SS045	64410.78376	0.1109	0.019	0.002102
SS046	44819.31644	0.61	0.013	0.008044
SS047	19795.35723	0.32475	0.006	0.001891
SS048	34283.16064	0.164	0.010	0.001654
SS049	31906.28909	0.1264	0.009	0.001187
SS050	22962.10462	0.33	0.007	0.002229
SS051	28342.92987	1.35	0.008	0.011257
SS052	35907.07926	0.6645	0.011	0.007020
SS054	24873.23305	0.2105	0.007	0.001540
SS057	20289.37134	0.04075	0.006	0.000243
SS058	14094.40611	395	0.004	1.637966
SS059	30129.48501	3	0.009	0.026593
SS060	49138.56862	0.855	0.014	0.012361
SS062	75396.23963	0.00303	0.022	0.000067
SS064	43060.53438	0.2195	0.013	0.002781
SS066	35406.19652	0.11659125	0.010	0.001215
SS067	60631.65369	2.85	0.018	0.050840
SS068	65814.66451	1.20545	0.019	0.023342
SS069	85811.90034	0.03225	0.025	0.000814
SS070	53606.93651	2.79525	0.016	0.044086
SS071	15258.22418	0.03	0.004	0.000135
SS072	14699.84093	4.69825	0.004	0.020319
SS073	36277.7988	7.4	0.011	0.078983
SS074	32138.57422	3.6	0.009	0.034040
SS075	18014.76694	0.463525	0.005	0.002457
SS076	18704.19348	0.965	0.006	0.005310
SS077	13054.98103	0.268175	0.004	0.001030
SS078	20418.57794	0.00765	0.006	0.000046
SS079	39554.34659	1.8	0.012	0.020947
SS080	11679.29592	0.06218375	0.003	0.000214
SS081	13080.04213	0.13	0.004	0.000500
SS082	13261.71546	1.245095	0.004	0.004858
SS083	15510.60141	0.825	0.005	0.003765
SS084	23869.86934	0.24569625	0.007	0.001725
SS085	40357.70732	7.8	0.012	0.092615
SS086	23258.04748	1.405	0.007	0.009614
SS087	22447.91493	0.56	0.007	0.003698
SS088	35448.70895	0.75525	0.010	0.007877
SS089	25110.63681	10.3	0.007	0.076095
SS090	44026.61233	2.1	0.013	0.027202
SS091	51314.85984	2.840025	0.015	0.042877
SS092	53569.77669	4.6	0.016	0.072500
SS093	50604.52317	0.49	0.015	0.007295
SS094	23840.43886	30.95625	0.007	0.217132
SS095	23365.1818	4.017	0.007	0.027614
SS096	26940.63055	3.1209375	0.008	0.024737
SS097	18254.56533	0.04945	0.005	0.000266
SS098	17738.79744	0.00210625	0.005	0.000011
SS099	10273.2786	8.769	0.003	0.026505
SS100	17769.14005	1.39	0.005	0.007267
SS101	21165.50257	79.05	0.006	0.492256
TC	16219.01462	71	0.005	0.338800
TP1	23799.0914	36	0.007	0.252072
TP10	11875.61143	265	0.003	0.925897
TP11	8615.913917	0.4	0.003	0.001014
TP13	12799.20604	72	0.004	0.271129
TP4	5966.83009	147	0.002	0.258061
TP8	21725.03831	5.3	0.006	0.033876
TP9	10047.93106	0.71	0.003	0.002099
	3398905.59	1678.61	1.00	7.30

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	1.1858	1.1217	0.9840	1.2318	1.1308	0.1078	0.0953
Max	22.9885	25.7544	32.1481	22.5645	25.8639	4.4218	0.1710
Average	7.4590	7.4080	7.3673	7.4030	7.4093	0.0377	0.0051
Std Dev	3.3913	3.3032	3.2926	3.3090	3.3240	0.0454	0.0137
1%	1.9692	2.0623	2.0060	2.0723	2.0274	0.0486	0.0240
5%	2.8247	2.8568	2.7894	2.8462	2.8293	0.0297	0.0105
10%	3.4130	3.4452	3.4611	3.3827	3.4255	0.0349	0.0102
15%	3.9770	3.9465	3.9588	3.9314	3.9534	0.0193	0.0049
20%	4.4461	4.4537	4.4511	4.4860	4.4592	0.0181	0.0041
25%	4.9167	4.9201	4.9505	4.9597	4.9368	0.0216	0.0044
30%	5.3761	5.3659	5.3669	5.3727	5.3704	0.0048	0.0009
35%	5.7879	5.7667	5.7421	5.7693	5.7665	0.0188	0.0033
40%	6.1848	6.1741	6.1754	6.1786	6.1782	0.0048	0.0008
45%	6.5524	6.5710	6.5842	6.5479	6.5639	0.0169	0.0026
50%	6.9652	6.9710	6.9555	6.9132	6.9512	0.0261	0.0038
55%	7.4018	7.4136	7.3574	7.3871	7.3900	0.0242	0.0033
60%	7.8601	7.8379	7.8299	7.8385	7.8416	0.0130	0.0017
65%	8.3659	8.3299	8.2748	8.3614	8.3330	0.0420	0.0050
70%	8.8800	8.8664	8.7775	8.8604	8.8461	0.0465	0.0053
75%	9.4770	9.4158	9.3186	9.4078	9.4048	0.0653	0.0069
80%	10.1637	10.0101	9.9816	10.0066	10.0405	0.0831	0.0083
85%	11.0276	10.8768	10.7161	10.8333	10.8635	0.1287	0.0118
90%	12.1180	11.8806	11.7307	11.8641	11.8983	0.1611	0.0135
95%	13.7550	13.4820	13.2412	13.5065	13.4962	0.2100	0.0156
97%	14.7658	14.6583	14.3985	14.6246	14.6118	0.1544	0.0106
99%	17.1740	16.5255	16.9000	16.5149	16.7786	0.3187	0.0190
Kurtosis	0.62	0.61	1.34	0.59	0.79	0.37	
Skewness	0.78	0.75	0.84	0.75	0.78	0.04	

APPENDIX B
BOOTSTRAP MODEL RESULTS
KOPPERS INC. WOOD-TREATING FACILITY
GAINESVILLE, FLORIDA

TCDD-TEQ Concentrations and Weighted Averages
Entire Site 0 to 6 Foot Soil

ThPolyID	Shape Area (sq ft)	TCDD-TEQ (mg/kg)	% of Area	Weighted Avg
DT	8054.280669	0.0051416	0.002	0.000012
GA-Soil-001	14484.05988	0.00046625	0.004	0.000002
GA-Soil-004	62800.59073	0.00022527	0.018	0.000004
GA-Soil-005	28151.08265	0.0015181	0.008	0.000013
GA-Soil-011	49853.16104	0.0013054	0.015	0.000019
GA-Soil-033	86153.97911	0.00057046	0.025	0.000014
GA-SOIL-034	26577.8321	9.5043E-06	0.008	0.000000
GA-SOIL-035	29157.92764	0.000952974	0.009	0.000008
GA-SOIL-036	56955.09201	0.000404181	0.017	0.000007
GA-SOIL-037	38693.93397	0.00134668	0.011	0.000015
GA-SOIL-038	70923.42838	2.79429E-05	0.021	0.000001
NL	27949.21397	0.002452535	0.008	0.000020
PA	34506.41303	0.009941079	0.010	0.000101
PL	42809.7227	0.000574223	0.013	0.000007
SL	30636.51155	0.000510991	0.009	0.000005
SS001	37034.36155	5.91868E-06	0.011	0.000000
SS002	27719.14275	8.01007E-05	0.008	0.000001
SS003	61015.90156	7.69667E-05	0.018	0.000001
SS005	72410.33547	0.000277981	0.021	0.000006
SS006	34795.5319	0.000827608	0.010	0.000008
SS007	58566.92707	0.000164006	0.017	0.000003
SS020	78868.56341	0.000289805	0.023	0.000007
SS022	147971.5278	1.97053E-05	0.044	0.000001
SS024	96396.09626	0.000116154	0.028	0.000003
SS026	176860.4771	0.000649414	0.052	0.000034
SS035	37866.73633	2.19898E-05	0.011	0.000000
SS037	37406.63531	0.00075937	0.011	0.000008
SS038	107920.8158	0.000426382	0.032	0.000014
SS041	135019.1311	0.000576995	0.040	0.000023
SS043	51147.79907	0.000226308	0.015	0.000003
SS044	86469.9107	0.007128588	0.025	0.000181
SS046	99369.69246	0.000525185	0.029	0.000015
SS057	31769.71422	1.51587E-05	0.009	0.000000
SS058	44875.49792	0.05438542	0.013	0.000718
SS062	104955.3209	0.000415931	0.031	0.000013
SS066	102518.7234	0.00039055	0.030	0.000012
SS068	130615.3895	0.002108388	0.038	0.000081
SS070	206453.0107	0.01133734	0.061	0.000689
SS071	15258.22418	3.38896E-05	0.004	0.000000
SS076	46950.08349	0.000977	0.014	0.000013
SS080	11679.29592	2.2685E-05	0.003	0.000000
SS081	17233.39033	0.002814842	0.005	0.000014
SS082	14344.36523	0.002226815	0.004	0.000009
SS084	66687.91912	0.00030702	0.020	0.000006
SS086	24407.80558	0.001252997	0.007	0.000009
SS088	81126.96928	0.001036623	0.024	0.000025
SS093	114837.0198	0.000779472	0.034	0.000026
SS094	40212.61643	0.000561213	0.012	0.000007
SS095	28212.59454	0.001555468	0.008	0.000013
SS096	30521.56879	0.002037215	0.009	0.000018
SS097	49865.37105	1.61448E-05	0.015	0.000000
SS098	23596.67244	9.93694E-05	0.007	0.000001
SS099	15004.30732	0.003385524	0.004	0.000015
SS100	17697.22761	0.001159156	0.005	0.000006
SS101	33927.91808	0.006768988	0.010	0.000068
TC	20007.61778	0.012930695	0.006	0.000076
TP10	47282.13456	0.045298	0.014	0.000630
TP13	30097.85604	0.00027745	0.009	0.000002
TP4	63323.01892	0.000988823	0.019	0.000018
TP8	30897.14105	0.003192805	0.009	0.000029
	3398905.59	0.19	1.00	0.00

Bootstrap Output

	Rep1	Rep2	Rep3	Rep4	Mean	SD	RSD
Min	0.0007	0.0006	0.0007	0.0006	0.0006	0.0000	0.0521
Max	0.0081	0.0085	0.0083	0.0083	0.0083	0.0002	0.0206
Average	0.0031	0.0031	0.0031	0.0031	0.0031	0.0000	0.0024
Std Dev	0.0011	0.0011	0.0011	0.0011	0.0011	0.0000	0.0153
1%	0.0011	0.0011	0.0012	0.0011	0.0011	0.0000	0.0232
5%	0.0015	0.0015	0.0015	0.0015	0.0015	0.0000	0.0098
10%	0.0017	0.0017	0.0017	0.0018	0.0017	0.0000	0.0139
15%	0.0019	0.0020	0.0020	0.0020	0.0020	0.0000	0.0104
20%	0.0021	0.0021	0.0021	0.0022	0.0021	0.0000	0.0074
25%	0.0023	0.0023	0.0023	0.0023	0.0023	0.0000	0.0072
30%	0.0024	0.0024	0.0024	0.0024	0.0024	0.0000	0.0061
35%	0.0026	0.0026	0.0026	0.0026	0.0026	0.0000	0.0041
40%	0.0027	0.0027	0.0027	0.0027	0.0027	0.0000	0.0033
45%	0.0029	0.0029	0.0029	0.0029	0.0029	0.0000	0.0019
50%	0.0030	0.0030	0.0030	0.0030	0.0030	0.0000	0.0053
55%	0.0032	0.0031	0.0031	0.0031	0.0031	0.0000	0.0043
60%	0.0033	0.0033	0.0033	0.0033	0.0033	0.0000	0.0044
65%	0.0034	0.0034	0.0034	0.0034	0.0034	0.0000	0.0041
70%	0.0036	0.0036	0.0036	0.0036	0.0036	0.0000	0.0030
75%	0.0038	0.0038	0.0038	0.0038	0.0038	0.0000	0.0035
80%	0.0040	0.0040	0.0040	0.0040	0.0040	0.0000	0.0057
85%	0.0043	0.0043	0.0043	0.0042	0.0043	0.0000	0.0049
90%	0.0046	0.0046	0.0047	0.0046	0.0046	0.0000	0.0075
95%	0.0051	0.0051	0.0052	0.0052	0.0051	0.0001	0.0125
97%	0.0054	0.0055	0.0056	0.0055	0.0055	0.0001	0.0170
99%	0.0060	0.0063	0.0063	0.0061	0.0062	0.0002	0.0245
Kurtosis	0.23	0.51	0.40	0.33	0.37	0.12	
Skewness	0.56	0.63	0.67	0.62	0.62	0.05	

Appendix C

Relative Absorption Factor Profiles for COPCs

ANTIMONY

The oral RfD of 4E-04 mg/kg-day is based on a drinking water study in rats using potassium antimony tartrate (U.S. EPA, 1998). Antimony is poorly absorbed across the gastrointestinal tract with one report of 15 percent absorption of ingested potassium antimony tartrate by mice (U.S. EPA, 1980). AMEC assumes that the absorption of antimony in the soil is the same as that in drinking water. Thus, the RAF (oral-soil) is 1.0.

Dermal absorption of antimony is also reported to be poor, although specific estimates were not located (U.S. EPA, 1980). AMEC has used a recommended default value for inorganics of 0.1 percent for the dermal absorption of antimony from soil (U.S. EPA, 1992). Assuming that the gastrointestinal absorption of antimony from the drinking water study was 15 percent, results in an RAF (dermal-soil) of 0.1%/15% = 0.007.

Summary of RAFs for Antimony

Oral-Soil	1.0
Dermal-Soil	0.007

References

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CHROMIUM III

The oral-dose response value for chromium III (1.0 mg/kg/day) is a chronic RfD based on a dietary study in rats (U.S. EPA, 1998). The chronic RfD was adopted as the subchronic RfD (10 mg/kg/day) (U.S. EPA, 1997). Both RfD's are based on administered dose units. In order to derive RAFs for chromium, it is important to understand the degree to which it is excreted in the feces. Therefore, this topic is addressed first, followed by the estimation of absorption in the chromium III dose-response study, and finally the derivation of the RAFs.

Fecal Excretion of Chromium

As discussed in the introduction, most absorption studies rely on quantitation of a compound in urine and/or feces for absorption determinations. For orally administered compounds, presence of the compound in the feces could merely indicate transit of the compound through the GI tract, or could indicate absorption of the compound with subsequent excretion into the feces. The best method for the determination of fecal excretion is quantitation of the compound in urine and feces after administration of an IV or IP dose. From the data, the ratio of the compound present in the feces to the compound present in the urine can be determined. This ratio can then be used with urinary excretion data from oral absorption studies to estimate the amount of fecal excretion. The sum of urinary and fecal excretion is an estimate of absorption.

Several studies demonstrate that fecal excretion of absorbed chromium is a significant pathway of elimination for chromium III. As the results of these studies are integral to the determination of chromium absorption, these studies are reviewed below. A summary of the results are presented in Table 1.

1. Sayato et al. (1980) administered radioactive chromic chloride by intravenous injection to male Wistar rats. At both 4 and 25 days post-injection, fecal excretion was 50% of urinary excretion.

2. Gregus and Klaassen (1986) gave radioactive chromic chloride to Sprague-Dawley rats by intravenous injection. After four days, fecal excretion was 32% of urinary excretion.

3. Hopkins (1965) also gave radioactive chromic chloride to Sprague-Dawley rats by intravenous injection. At four days, fecal excretion was 17% of urinary excretion.

Table 1
Excretion Patterns of IV Administered Chromium III

STUDY	**ROUTE**	**SPECIES**	**DOSE** (mg Cr/kg)	**TIME** (days)	**% DOSE IN URINE**	**% DOSE IN FECES**	**% F/U**
Sayato (1980)	IV	rat	0.02	4 25	45% 50%	22% 25%	50%
Gregus, Klassen (1986)	IV	rat	3	4	16.3%	5.23%	32%
Hopkins (1965)	IV	rat	0.001	4	41%	7%	17%
Visek (1953)	IV	rat	0.05 to 0.3	4	15%	20%	133%
Cikrt & Benko (1979)	IV	rat	0.05	1	22.4%	4.2% + 0.5% (in bile)	21%
Manzo (1983)	IV	rat	0.11	1	5.2%	0.47%	9%
Bryson, Goodson (1983)	IP	Mouse	2.2	7	15%	12%	80%

4. Visek et al. (1953) administered intravenous injections of radioactive chromic chloride to rats of the Rockland and Carworth strains and measured the metal in urine and feces. At four days, fecal excretion was 133% of urinary excretion.

5. Cikrt and Bencko (1979) administered radioactive chromic chloride to female Wistar rats after a 24 hour fast by intravenous injection. After 24 hours, fecal chromium was 21% of urinary chromium.

6. Manzo et al. (1983) dosed five male COBS albino rats with radiolabelled chromic chloride by intravenous injection. At 24 hours, fecal excretion was 9% of urinary excretion.

7. Bryson and Goodall (1983) administered chromic chloride to CxO mice by IP injection. Urine and feces were analyzed by a diphenylcarbazone spectrophotometric method. At four days, 15% of the dose was recovered in the urine, and 12% of the dose was in the feces. Thus, fecal excretion was 80% of urinary excretion.

The measured values of fecal excretion as a percentage of urinary excretion from these studies vary from 9% to 133%. Not all of these studies are appropriate for the derivation of an average value. Several issues must be considered. First, it is not necessary to include the mouse data from the Bryson and Goodall (1983) study here, because the study upon which the RfD for chromium III is based was performed in rats, and the remaining studies do use rats as the experimental animal.

Second, the duration of the experiments must be considered. Three studies present the time course of elimination of chromium III in both urine and feces (Sayato et al., 1980; Gregus and Klaassen, 1986; Hopkins, 1965). The results of these studies show that after a single dose, although total urinary excretion begins to plateau at the end of 24 hours, fecal excretion does not begin to plateau until 96 hours. The Sayato (1980) data demonstrate that although the percent dose in urine and feces increases slightly from 4 to 25 days, the ratio of fecal to urinary output remains the same at 50%. Therefore, only studies that have a duration of at least 96 hours should be included in this fecal elimination analysis. This means that the results of Cikrt and Bencko (1979) and Manzo et al. (1983) will be excluded from analysis as these studies lasted only 24 hours.

This evaluation leaves the first four studies mentioned above and as listed in Table 4-1. The result of Visek (1953) is an obvious outlier to this data set and will not be considered here. Thus the results of Sayato (1980), Gregus and Klassen (1986), and Hopkins (1965) on the ratio of fecal to urinary excretion, 50%, 32%, and 17%, respectively, can be used to calculate a mean value of 33%. This value for estimating fecal excretion is appropriate to use with cumulative urinary excretion data from 24 hours post dosing onward because it was shown by Sayato (1980) and Gregus and Klassen (1986) that urinary excretion generally begins to plateau at 24 hours.

Therefore, in the absence of fecal excretion data for a study of oral absorption of chromium III, it will be assumed that some of the chromium present in the feces is metal that was absorbed from the gastrointestinal tract and has been eliminated into the gastrointestinal tract either by biliary excretion, or some other mechanism. The fecal elimination will be estimated by assuming that an amount equivalent to 33% of the amount eliminated in the urine is also eliminated in the feces. This approach assumes that the degree of urinary or fecal elimination is independent of the route of administration, and moreover, that fecal

elimination occurs in humans as is does in rats.

From the time courses of elimination (Sayato et al., 1980; Gregus and Klaassen, 1986; Hopkins, 1965), the relationship between urinary excretion at 24 hours and at 96 hours can also be determined. Urinary excretion at 24 hr as a percent of urinary excretion at 96 hours is 68%, 68%, and 78% for the aforementioned studies, respectively. The average is 71%, and this value will be used to evaluate oral absorption data that only report results up to 24 hours post-dosing. Use of this value assumes that nearly all the administered dose will be excreted at 96 hours.

Estimation of Absorption in the Dose-Response Study

Kiem et al. (1987) gave different diets to 20 male Sprague-Dawley rats prior to oral administration of an aqueous solution of radioactive chromic chloride by gavage to study the effect of dietary components on chromium III absorption. Rats were fasted for 24 hours before being fed 5 grams of either a casein diet or a casein diet with 35% wheat bran added. Urine was collected for 24 hours after dosing. On average, 0.6% of the administered chromium was found in the urine.

The above data slightly underestimate the amount of chromium absorbed and excreted in the urine, because only 24 hours were allowed for urine collection. An ideal experiment would have allowed several days for collection of excreta after dosing. However, an evaluation of the experiments in which the time course of excretion was measured indicates that approximately 71% of the total amount that was excreted in the urine was collected by Kiem and co-workers. Accordingly, an estimate can be made of the total amount of chromium from orally administered diet that Kiem et al. (1987) would have collected had they extended their experiment an appropriate length of time. The amount collected 24 hours after dosing is divided by 0.71. Additionally, as above, the amount of chromium excreted in the feces is estimated by multiplying the urinary amount by 0.33.

Urinary	Fecal Absorbed	Urinary + Fecal Absorbed
(0.6%)/(0.71) = 0.84%	(0.84%)(.33) = 0.28%	1.12%

Thus, the estimated absorption in rats when chromic chloride is orally administered with dietary components is 1.12%. The actual absorption that occurred in the experiment from which the RfD was derived may have been different, because in that experiment chromic oxide in bread was fed to rats. No information was found in the literature on this specific dosing regimen. Thus, the data from Kiem et al. (1987) are used as an estimate of absorption of 1.12% that occurred in the dose-response study.

RAF (Oral-Soil)

The RAF (oral-soil) is defined for chromium III as: (absorption of chromium III in humans from ingested soil) / (absorption chromium III in rats from diet). No experiments could be found in which chromium III was added to soil and orally administered to humans or rodents. In the absence of information, it is assumed that the absorption from soil in humans is the same as the absorption from diet in rats. Thus, the RAF (oral-soil) is 1.0.

RAF (Dermal-Soil)

The RAF (dermal-soil) for this chromium III is defined as: (absorption of chromium III in humans from dermal contact with soil) / (absorption of chromium III in rats from diet). The RAF (dermal-soil) was derived from the estimate of the fractional dermal absorption of chromium VI recommended by U.S. EPA as a default value (0.1%) (U.S. EPA, 1992) and the estimate of absorption of chromium III when administered with dietary components, 1.12%, from the experiment of Kiem et al. (1987). Accordingly, the RAF (dermal-soil) is: (0.1%) / (1.12%) = 0.09.

Summary of RAFs for Chromium III

Oral-Soil	1.0
Dermal-Soil	0.09

References

Bryson, W.G. and C.M. Goodall. 1983. Differential Toxicity and Clearance Kinetics of Chromium(III) or (VI) in Mice. Carcinogenesis 4(2):1535-1539.

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INORGANIC MERCURY (MERCURIC CHLORIDE)

The dose-response value for inorganic mercury (0.0003 mg/kg/day) is a chronic RfD based on three subchronic studies in which rats were dosed with mercuric chloride either by gavage or by subcutaneous injection (U.S. EPA, 1998). This RfD is intended to be used for risk assessment of water, soils, and sediments containing unspeciated mercury. In addition, it should be used in all situations in which mercury has been speciated and found to be inorganic mercury.

The above RfD should not be used for risk assessments in which fish uptake of mercury is modeled from any source, and human consumption of mercury-contaminated fish is estimated. This is because the mercury in fish is generally in the form of methyl mercury, or some other organomercury compound. Therefore, for fish consumption, the RfD for methyl mercury should be used. In addition, the RfD for inorganic mercury should not be used whenever methyl mercury has been specifically detected and quantitated in any environmental media.

The RAFs developed in this document for inorganic mercury are applicable to soluble forms of mercury; i.e., they are applicable to most forms of inorganic mercury except mercuric sulfide. As shown below, the gastrointestinal absorption of mercuric sulfide is much lower than that of mercuric chloride, the compound upon which the RfD is based. Thus, the use of the following RAFs will cause an overestimation of the risks posed by mercuric sulfide. If it is known from site history or mercury speciation analyses that the mercury present in some environmental media is mercuric sulfide, then it may be appropriate to derive a mercuric sulfide-specific set of RAFs.

Derivation of the RfD for Inorganic Mercury

The EPA-derived RfD for mercuric chloride is a consensus value determined by a panel of mercury experts who met at EPA in October, 1987. The rat LOAEL for autoimmune effects was based on three LOAELs identified in three rat studies. In two studies mercuric chloride was given to the animals by gavage as an aqueous solution. LOAELS in these studies were 0.32 and 0.63 mg/kg-day in administered dose units. In a third study, mercuric chloride was injected subcutaneously. EPA converted the LOAEL of 0.016 mg/kg-day to units comparable to the gavage studies by assuming the following: (1) 7% of mercuric chloride is absorbed from the gastrointestinal tract and (2) 100% of mercuric chloride is absorbed when injected subcutaneously. The converted LOAEL was 0.23 mg/kg-day.

From these three LOAELS, the experts determined that 0.3 mg/kg-day was an appropriate average LOAEL from which to derive a chronic RfD. The resulting RfD is in administered dose units assuming an oral gavage dosing regimen with aqueous solutions. Thus, an estimation of absorption of inorganic mercury in rats from oral gavage is required for the development of the RAFs.

Estimation of Absorption in the Dose-Response Study

Three studies have been used to estimate the absorption of orally administered inorganic mercury in rodents. Two of these studies have defined absorption based on the residual body burden following a dose of radiolabelled ^{203}Hg. One has determined absorption based on urinary excretion data. Each of these will be discussed in turn below.

Residual Body Burden

Clarkson (1971) fed mice diets containing an unreported dose of $^{203}HgCl_2$. The body burden of mercury was measured by whole body radioactivity counting. After an initial sharp increase in radioactivity over the course of two days, whole body counts at steady state indicated that 1-2% of the daily dose was absorbed. The average of 1.5% is a minimum estimate of inorganic mercury absorption, because it does not take into account the amount of the dose that was absorbed and then excreted either in urine or feces.

Walsh (1982) introduced $^{203}HgCl_2$ (46 ug/kg) by gavage in aqueous solution to rats (3-6/group). At 4 hr and 43 hr post-dosing, radioactivity measurements were made on: 1) the contents of the GI tract (stomach and the regions of the intestine) and 2) the carcass after the GI contents had been removed. Radioactivity in the eliminated urine and feces was not determined. At 4 hr, 1.5% of the dose was associated with the carcass and the balance of the dose was recovered in the GI contents. At 43 hr, 2.4% of the dose was associated with the carcass and 3.3% of the dose was recovered in the GI contents. (This 3.3% may or may not be available for absorption, or it may have already been absorbed and excreted.) Therefore, at 43 hr the remaining 94.3% of the dose had been eliminated from the body. The value of 2.4% then is an estimate of the body burden of inorganic mercury.

The above studies have estimated the following body burdens of inorganic mercury in rodents: 1.5% for inorganic mercury administered with food and 2.4% for inorganic mercury administered in water. Because these values are similar, it can be assumed that the body burden of mercury administered with food is the same as the body burden resulting from exposure to mercury in drinking water. Thus, an average can be taken to estimate residual body burden of inorganic mercury after oral gavage, 2.0%.

Urinary Excretion Data

One study has reported the elimination of inorganic mercury as a fraction of the dose. This was a chronic feeding study conducted by Fitzhugh et al. (1950) in which mercuric acetate was administered in the diet to mice (20-24/sex/dose) at the following dietary concentrations: 0.5, 2.5, 10, 40, and 160 ppm. Six months into the study, urine and feces were collected for a 24 hour period and assayed for mercury content. Urinary excretion accounted for 0.5%-4.8% of the daily dose, and fecal elimination accounted for 40%-60% of the dose (values are the ranges of the averages for the dose groups).

To use the data of Fitzhugh et al. (1950) it is necessary to estimate fecal elimination from data on urinary elimination. The excretion of absorbed inorganic mercury into the urine and feces has been demonstrated by Gregus and Klassen (1986). Male Sprague-Dawley rats (4-6/group) were injected intravenously with $^{203}HgCl_2$. Urine and feces were collected, and after 4 days, fecal excretion accounted for 15.2% +/- 2.4% of the dose, and 16.3% +/- 1.4% of the dose was recovered in the urine. Thus, it can be concluded from this study that fecal excretion of inorganic mercury does occur and that equal percentages of an absorbed dose are excreted into the feces and the urine.

Applying the results of the Gregus and Klassen (1986) study to the Fitzhugh et al. (1950) study, fecal excretion of absorbed inorganic mercury could also account for 0.5%-4.8% of the administered daily dose (i.e., assuming urinary and fecal excretion are equal). Therefore, it can be concluded from this study that 1%-9.6%, or an average of 5.3%, of the ingested dose was absorbed and excreted within a 24 hr time period. Alternatively, it could be concluded that the portion of the dose not excreted, i.e., 100% minus 40%-60% or approximately 50% of the dose, was absorbed. The former estimate of 5.3% and the latter estimate of 50% are minimum and maximum estimates respectively. The results of this study are difficult to interpret because the elimination data are from animals who were on a diet containing mercury for six months, and the elimination data are only for a 24 hour period. Therefore, the 24 hour determination of elimination in this study is not a complete estimation, and only minimum and maximum amounts of absorption can be identified.

Absorption Estimate

The elimination data of Fitzhugh et al. (1950) provide an estimate of the average minimum absorption of 5.3% of inorganic mercury based on excretion data. The total absorption of inorganic mercury can be represented by the amount excreted plus the amount retained in the body, which was shown above to be 2%. Therefore, the absorption estimate is 2.0% plus 5.3% or 7.3%.

This value is very similar to the value of 7% absorption assumed by EPA in the calculation of the third LOAEL used to derive the RfD for inorganic mercury. The 7% value is also supported by two additional studies described below.

Revis et al. (1990) orally gavaged five male mice with an unreported dose of $^{203}HgCl_2$ in a slurry with powdered mouse chow. After 10 days, the feces eliminated over that period and the contents of the GI tract were assayed for radioactivity. The remainder of the dose not present in the fecal sample or GI tract was assumed to have been absorbed. The value of absorption of inorganic mercury determined from this experiment, 2.1%, is a minimum estimate of absorption because the amount of the dose that was absorbed and excreted into the feces was not accounted for.

The data of Clarkson (1971) were reviewed by Clarkson (1972) where it was estimated that the measured body burden of inorganic mercury of 1-2%, when corrected for excretion, would result in an absorption estimate of 10-15% for inorganic mercury when given orally. Quantitation of this

estimate was not included in the paper, and, therefore, the results are considered here only for qualitative purposes.

The oral absorption value of 7% for inorganic mercury derived above is midway between the minimum absorption estimate of 2.1% (Revis et al., 1990) and a maximum estimate of 10-15% (Clarkson, 1972).

The value of 7.3% will be used in the RAF determinations for inorganic mercury.

RAF (Inhalation)

The inhalation RfC for mercury (elemental) is 3.0E-04 mg/m^3. This corresponds to an RfD of 8.57E-05 mg/kg-day. The value is based on several studies of inhalation exposure in humans exposed to elemental mercury vapor in the workplace. It is assumed that lung retention and absorption of mercury vapor is similar across different exposure situations. Therefore, the RAF (inhalation) is 1.0. However, the retention and absorption of solid elemental mercury, solid mercuric sulfide, or soil-bound soluble inorganic mercury is presumed to be less. Thus, inhalation RAFs for such exposures are expected to be less than 1.0.

Summary of RAFs for Inorganic Mercury

RAF Inhalation	1.0

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2,3,7,8-TCDD

The oral CSF of 1.5 x 10^5 $(mg/kg/day)^{-1}$ is based on a dietary study in rats (Kociba et al., 1978). The diet was prepared by mixing (30 minutes) an acetone solution of TCDD with laboratory chow. The acetone was evaporated yielding a TCDD/diet mixture. TCDD concentration was 0.02 - 2 ppb (0.001 - 0.1 ug/kg/da). No absorption information is given in the Kociba et al. (1978) study.

In a study by Fries and Marrow (1975), however, rats were given TCDD in their diet continuously for 42 days. The total observation period of the experiment was 70 days. Diets were prepared in a similar manner to that used by Kociba et al. (1978). Laboratory chow was mixed with a benzene solution of TCDD and the benzene was evaporated. Two dose levels were used, 7 ppb and 20 ppb. Absorption was reported to be 50-60%. For the purposes of RAF derivation, 55% was used as the observed absorption efficiency.

In several other studies, TCDD absorption was measured using vegetable oil and solvent vehicles. Gastrointestinal absorption from oil or solvent has been reported to range from 70% to >87%. AMEC assumes that 80% absorption occurred in corn oil studies as noted below. It is generally accepted that absorption for these vehicles is more efficient than absorption from diet. Thus, the results of the single dietary experiment (55%) will be used as an estimate of the absorption from the dietary dose-response study (Kociba et al., 1978).

RAF (Inhalation)

U.S. EPA has developed an inhalation CSF for TCDD from the oral CSF. In so doing, EPA assumed that 100% of the particles estimated to be retained in the lung are absorbed and thus, the inhalation CSF of 1.5 x 10^5 $(mg/kg\text{-}d)^{-1}$ is the same as the oral CSF. AMEC defines here a RAF (inhalation) for dioxin contaminated fly ash based on the work of Nessel et al. (1990).

Transpulmonary absorption of TCDD from ground fly-ash (<3 μm) and gallium oxide (0.7 ± 0.5 μm) was assessed following intratracheal instillation of contaminated particles. Contact time of TCDD with the carrier ranged from 1 hour to 4 weeks. Female Sprague-Dawley rats (200-250 g) were intratracheally administered 5.25 Tg TCDD/kg on 15 mg particles in 0.3 ml saline and sacrificed 4 days later. Absorption was characterized by aryl hydrocarbon hydroxylase (AHH) induction in hepatic and pulmonary microsomes.

TCDD-contaminated gallium oxide caused a consistent 13- to 15-fold induction regardless of the duration of contact. TCDD-contaminated fly ash caused only a 4-fold induction when the duration of contact was 1 hour to 1 week. After a 4-week contact, the induction was only 2-fold. These data can be used to derive a RAF (inhalation) for TCDD on fly ash. Thus, the ratio of fly ash to gallium oxide is 4/13 = 0.3. AMEC assumes that the absorption of TCDD from gallium oxide is 100%. Systemic absorption of TCDD from inhaled fly ash is then estimated to be 30%. Because the absorption from the Kociba study was 55%, the RAF (inhalation) is 30%/55% = 0.55. If absorption of TCDD from gallium oxide particles was less than complete, then the RAF for TCDD-contaminated fly ash would be less than 0.55. Thus, AMEC's RAF is health-protective.

Summary of RAFs for TCDD

Inhalation	0.55

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Appendix D

Derivation of Toxicity Distributions

Cancer Slope Factor for 2,3,7,8-Tetrachlorodibenzo(p)dioxin (TCDD)

Prepared for

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21 January 2009

1.0 Introduction

In support of the on-Site human health risk assessment (HHRA) for the Koppers Inc. Wood-Treating Facility in Gainesville, Florida, a probability density function (PDF) has been derived for the cancer slope factor (CSF) for 2,3,7,8-tetrachlorodibenzo(p)dioxin (TCDD). TCDD has been identified as a constituent of potential concern (COPC) in Site soils and sediment. Although USEPA has derived CSFs for TCDD in the past, a number of deficiencies in these values make their application to this Site inappropriate. The objective of this report is to provide a CSF for TCDD that is based upon the best available science and is consistent with USEPA's *Guidelines for Carcinogen Risk Assessment* (USEPA, 2005). The remainder of this report is organized as follows:

Section 2.0: Deficiencies in the HEAST Cancer Potency Estimate for TCDD;
Section 3.0: Deficiencies in the USEPA (2003) Draft Cancer Potency Estimate for TCDD; and,
Section 4.0: Proposed Distribution for TCDD Cancer Potency

2.0 Deficiencies in the HEAST Cancer Potency Estimate for TCDD

A cancer potency factor of 156,000 $(mg/kg\text{-}day)^{-1}$ was derived by USEPA (1984) for TCDD based upon liver and lung tumors observed in female rats (Kociba et al., 1978; HEAST, 1997). In the critical study, groups of male and female rats were exposed to 0, 0.001, 0.01, or 0.1 ug/kg-day TCDD via the diet. An increased incidence of tumors of the liver (female), lung, hard palate/nasal turbinate, and tongue were reported. In addition, the incidence for tumors of the pituitary, uterus, mammary gland, pancreas, and adrenal were decreased. The liver tumor data (hepatocellular carcinomas and neoplastic nodules) in female rats is the most important tissue site for the HEAST cancer potency factor, but this tissue site showed a decrease in similarly exposed male rats (**Table 1**). The pathology slides for this tumor site were reevaluated (Goodman and Sauer, 1992), and resulted in a lower incidence of tumors at all dose groups (**Table 1**).

Table 1. Incidence of Liver Tumors in Rats Exposed to TCDD in the Diet (Kociba et al., 1978; Goodman and Sauer, 1992)

	Hepatocellular Carcinoma/Neoplastic Nodule (Kociba et al., 1978)		Revised Histopathology (Goodman and Sauer, 1992)
Dose (ug/kg-day)	**Male**	**Female**	**Female**
0	8/85	9/86	2/86
0.001	3/50	3/50	1/50
0.01	3/50	18/50	9/50
0.1	0/50	34/48	18/45

The HEAST cancer potency factor for TCDD has never been verified for inclusion in USEPA's Integrated Risk Information System (IRIS). This value was originally derived more than 20 years ago (USEPA, 1984), and as such is outdated for a number of reasons:

(1) the CSF relied upon the conclusions and histopathology as originally reported in Kociba et al. (1978), which have since been updated to reflect more recent pathology guidelines (Goodman and Sauer, 1992);
(2) the CSF does not reflect more recent cancer bioassays conducted for TCDD, such as that conducted by NTP (2006);
(3) the CSF relies upon dose-response data that were assessed in terms of administered dose, which is not considered to be a suitable dose measure for persistent chemicals such as TCDD;
(4) the CSF relies upon an allometric scaling factor of 2/3 to scale doses across species (*i.e.*, from rats to humans), rather than a scaling factor of 3/4 as is current agency policy (USEPA, 1992); and,
(5) the CSF relies upon a low-dose extrapolation method (linearized multistage model) and software (Global82) that is not consistent with current agency guidelines (USEPA, 2005) and software (BMDS 2.0).

For these reasons, the HEAST CSF was not selected for use in the HHRA for the Site.

3.0 Deficiencies in USEPA Draft 2003 Potency Estimate for TCDD

In 2003, a draft USEPA reassessment of the CSF for TCDD was released for review by the National Academy of Sciences (NAS). NAS was tasked to assess whether EPA's risk estimates for dioxin-like chemicals were scientifically robust and whether there is a clear delination of all substantial uncertainties and variability. NAS released its critical review of USEPA's

draft reassessment in 2006. Key criticisms and recommendations from NAS for USEPA's 2003 reassessment include:

(1) The linear extrapolation to low doses reflects agency policy, and does not reflect the state of the science for TCDD;
(2) USEPA should use a variety of different dose-response models (rather than just the multistage model with linear extrapolation);
(3) USEPA should use probabilistic methods to address uncertainty in the cancer potency;
(4) USEPA should use the most current data in its risk estimates, in particular, the NTP (2006) cancer bioassay; and,
(5) The assessment should consider multiple dose measures, and CSFs based upon body burden should address species differences in body fat composition.

In response to these comments, a revised reassessment is being prepared by USEPA, and it is estimated to become available in 2012. Based upon these considerations, USEPA's draft CSF value of 1,000,000 $(mg/kg\text{-}day)^{-1}$ was not used in the risk assessment.

4.0 Proposed Interim Cancer Potency Estimate

More recently, Maruyama and Aoki (2006) assessed TCDD potency with respect to liver tumors in terms of rat liver burden. Based on their assessment, the authors reported a range of CSFs of 780 – 3,000 $(mg/kg\text{-}day)^{-1}$. The process for deriving a cancer potency estimate for TCDD includes a number of decision points, but not limited to:

1. Identification of the Critical Effect/Data Set(s);
2. Identification of a Dose Measure(s);
3. Identification of a Response Measure(s);
4. Selection of a Dose-Response Model(s);
5. Selection of Response Level(s) (Point of Departure);
6 Low-Dose Extrapolation; and,
7. Presentation of Cancer Potency Estimate.

Each of the decision points is summarized below.

4.1 Critical Effect/Data Set

The NTP cancer bioassays serve as the definitive dose-response data set for TCDD based upon a consideration of the number of dose groups (five), number of animals tested per dose (53-54), and tissue time course data

collected (liver, adipose), which permits the use of internal dose in the dose response assessment. Liver adenomas were identified by Maruyama and Aoki. (2006) as a sensitive tumor site used to estimate the cancer potency of TCDD. The dose-response relationship for this tumor type is highly nonlinear, with no increase in tumors observed in the three lowest dose groups (**Table 2**).

Table 2. Dose-Response Data for Liver Adenomas in Female Rats (NTP, 2006)

Applied dose (ng/kg BW)	Liver Dose (ng/g tissue)[1]	Liver Adenomas
0	0	0/53
3	1.57	0/54
10	4.37	0/53
22	7.27	0/53
46	9.96	1/53
100	12.3	13/53

[1]Concentrations were simulated with a rat PBPK model (Andersen *et al*., 1993; Maruyama and Aoki, 2006).

4.2 Identification of a Dose Measure

Rather than rely upon allometric scaling of administered dose to the ¾ power, Maruyama and Aoki (2006) assessed the dose-response data in terms of internal dose using liver burden (**Table 2**), which is more appropriate for persistent chemicals such as TCDD. This approach is consistent with recommendations from NAS (2006), which states, "*the Reassessment should use a simple PBPK model to address some of the uncertainties inherent in the use of species differences in body burden as a measure of species differences in target organ exposure. Generic PBPK models and PBPK models developed specifically for TCDD and its congeners incorporate about 7% of the body weight present as adipose tissue in rats and about 15% in humans (Gerlowski and Jain 1983; Wang et al. 1997; Maruyama et al. 2002,2003; Emond et al. 2004)…The Reassessment did not consider this approach or quantify its impact, despite its recognition of tissue concentration as the best dose metric.*"

Internal doses (liver tissue burden) were simulated with a rat PBPK model (Andersen *et al.*, 1993; Maruyama and Aoki, 2006). Liver burden is considered to be a better predictor of liver response than body burden or administered dose. Liver burden is currently the only target tissue dose that can be estimated with a high degree of confidence in both rats and humans and for which the mode of action has been adequately studied.

4.3 Identification of a Response Measure

The dose-response data were assessed in terms of extra risk, which serves as the default response measure for tumor incidence data used by USEPA. Because the incidence of liver tumors in control animals is zero (**Table 2**), extra risk is numerically equivalent to added risk in this case. The assessment of Maruyama and Aoki (2006) relied upon the unadjusted tumor incidence (*i.e.*, no adjustments for mortality).

4.4 Selection of a Dose-Response Model

Maruyama and Aoki (2006) examined several dose-response models (multistage, logistic, and Weibull). All three models provided acceptable fits to the data, as well as similar values for the point of departure. The Weibull model was selected since it provided a slightly better fit to the data (p-value = 0.999, indicating a nearly exact fit to the data) (Maruyama and Aoki, 2006) (**Figure 1**). The authors did not present the Akaike information criteria (AIC), which can also be used to guide model selection. However, in a majority of cases, the p-value and AIC will indicate the same model as providing the best overall fit to the data.

The point of departure is intended to serve as the dividing line between the dose "range of observation," where dose-response data are available, and the dose "range of extrapolation," where dose-response data are lacking and must be predicted. Maruyama and Aoki (2006) used the dose producing a 1% increase in extra risk (ED01) and its corresponding 95% lower confidence limit (LED01). Because the ED01 corresponds to the dose at which the dose-response relation becomes non-linear, and because it falls well within the range of observation (there are three data points below the ED01), the use of a 1% response rate appears to be appropriate for this data set.

4.6 Low-Dose Extrapolation

A biologically-based dose-response model, which serves as the preferred basis for low-dose extrapolation (U.S. EPA, 2005), is not available for TCDD. Methods for low dose extrapolation include linear and non-linear methods, based upon a consideration of the mode of action (MOA).

The MOA for TCDD has been well studied, and is generally attributed to its ability to bind to the aryl hydrocarbon receptor (AHR), which is believed to mediate the toxic effects of dioxin-like compounds (DLCs). Because mechanistic data for TCDD do not support a direct genotoxic mode of

action, but instead support a role as a tumor promoter, a non-linear method of low-dose extrapolation is the most appropriate for TCDD as recommended by the NAS (2006). However, for the sake of conservatism in this HHRA, a linear estimate of cancer potency is derived.

4.7 Cancer Potency Estimate Presentation

A linear cancer potency for TCDD was calculated by dividing a response rate of 0.01 by the ED01 and LED01 values resulting in cancer potency estimates of 1,600 and 3,000 $(mg/kg\text{-}day)^{-1}$, respectively. For the probabilistic risk assessment, the CSF for TCDD was defined as a betaPERT distribution based upon a best estimate of 1,600 $(mg/kg\text{-}day)^{-1}$, a 95th percentile of 3,000 $(mg/kg\text{-}day)^{-1}$, and a 5th percentile of 200 $(mg/kg\text{-}day)^{-1}$. Although Maruyama and Aoki did not calculate a lower bound for the CSF, one was estimated here based upon an assumption of symmetry between the LED01 and UED01 about the ED01 (**Figure 1**). This CSF distribution was truncated at zero (to restrict the CSF to positive values), and reflects the uncertainty in the dose-response model in predicting the ED01 value. The betaPERT distribution is essentially a smoother version of a triangular distribution commonly used in risk analysis. Expressing the CSF as a distribution is consistent with USEPA (2005), which states, "*…significant risk management decisions will often benefit from a more comprehensive assessment, including alternative risk models having significant biological support. To the extent practicable, such assessments should provide central estimates of potential risks in conjunction with lower and upper bounds (e.g., confidence limits) and a clear statement of the uncertainty associated with these estimates.*" (USEPA, 2005)

The CSFs derived by of Maruyama and Aoki (2006) are considerably lower than the HEAST value used previously by USEPA for several reasons, the most important of which are summarized below.

- Rather than relying upon the study of Kociba et al. (1978), the assessment relies upon more recent data from the cancer bioassay conducted by NTP (2006), which provided definitive dose-response information (more dose groups to define the range of observation, companion toxicokinetic data) in a sensitive test species (female rat) and target tissue (liver).
- The dose-response data were assessed in terms of tissue dose (liver burden), rather than administered dose with body weight raised to the 2/3 power, which is inappropriate for persistent chemicals and inconsistent with current agency policy (USEPA, 1992).

- PBPK models, a mathematical tool that has been embraced by regulatory agencies for use in risk assessment (U.S. EPA, 2006), were used by Maruyama and Aoki (2006) to account for toxicokinetic differences between rats and humans.
- The CSF was derived using current methods (response rate divided by the point of departure vs. q1*) and software (BMDS vs. GLOBAL82).

The cancer potency estimates of Maruyama and Aoki (2006) address some of the criticisms identified by NAS of USEPA's 2003 draft assessment. Until USEPA's revised assessment becomes available (2012), the assessment of Maruyama and Aoki (2006) was selected for use in this HHRA as interim CSFs reflective of the best available science.

Although the CSFs of Maruyama and Aoki are lower than the HEAST CSF, they are likely to overestimate the potential risks to human health for the reasons described below.

(1) *Data Set* - Cancer potency estimates based upon species other than the female rat are expected to be lower than those derived from the female rat data. Use of the NTP 2006 data may be viewed as conservative, because the test species (female rat) was selected on the basis of its sensitivity to the carcinogenic effects as identified in previous studies (Kociba *et al*., 1978). In relying upon the NTP data set, an inherent assumption of the assessment is that the rat liver tumor response when assessed on a tissue burden basis is predictive of response in a human tissue. However, humans appear to be resistant to most of the adverse health effects of dioxin-like chemicals compared to other species (Sweeney and Mocarelli, 2000; Connor and Aylward, 2006) and, thus, CSFs derived from rodent bioassays may overstate the cancer potency of TCDD in humans.

(2) *Dose Measure* - The CSFs relied upon here reflect the more conservative of two estimates of rat liver dose considered by Maruyama and Aoki (2006). Had CSFs based upon both estimates of rat liver dose been used here, the distribution of CSFs would have been shifted to the left (i.e., would have increased the probability of lower CSFs and decrease the probability of higher CSFs than used in the current Probability Density Function).

(3) *Point of Departure* – Consideration of alternative points of departure can have a significant impact on linear estimates of cancer potency when the data are highly non-linear, as in this case. Use of the LED001 (0.1% response rate) from the Weibull model, which falls at the low end of the range of observation, results in a linear potency

estimate that is approximately seven-fold lower than that estimated from the LED01.

(4) *Low Dose Extrapolation* - The CSF derived here for TCDD does not take into consideration the mode of action and NAS recommendation that supports consideration of a nonlinear dose-response relationship. Had a non-linear MOA been assumed, no increased cancer risk would be expected at low potential exposures

Lastly, USEPA has historically relied upon a concentration of 1.0 ppb (1,000 ppt) as its recommended cleanup level for residential soils, and a range of 5.0 ppb to 20 ppb (5,000 ppt to 20,000 ppt) for commercial/industrial sites where exposures are expected to be less than in residential settings (USEPA, 1998). These cleanup levels have been used at a number of sites in the United States. Using the state of Florida's calculation methods (FDEP, 2005), a residential Soil Cleanup Target Level (SCTL) of 1.0 ppb for TCDD would correspond to a linear CSF of approximately 989 $(mg/kg\text{-}day)^{-1}$, which falls within the range of conservative CSFs (780-3,000) derived by Maruyama and Aoki (2006). Therefore, the CSFs derived by Maruyama and Aoki (2006) are consistent with USEPA's recommended cleanup value of 1.0 ppb for TCDD in residential soils (5-20 ppb for commercial/industrial soils), and support the conclusion that these cleanup levels are protective of human health at Florida's target risk range.

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Figure 1. Fit of Weibull Model to Dose-Response Data for Liver Adenomas in Female Rats (NTP, 2006)

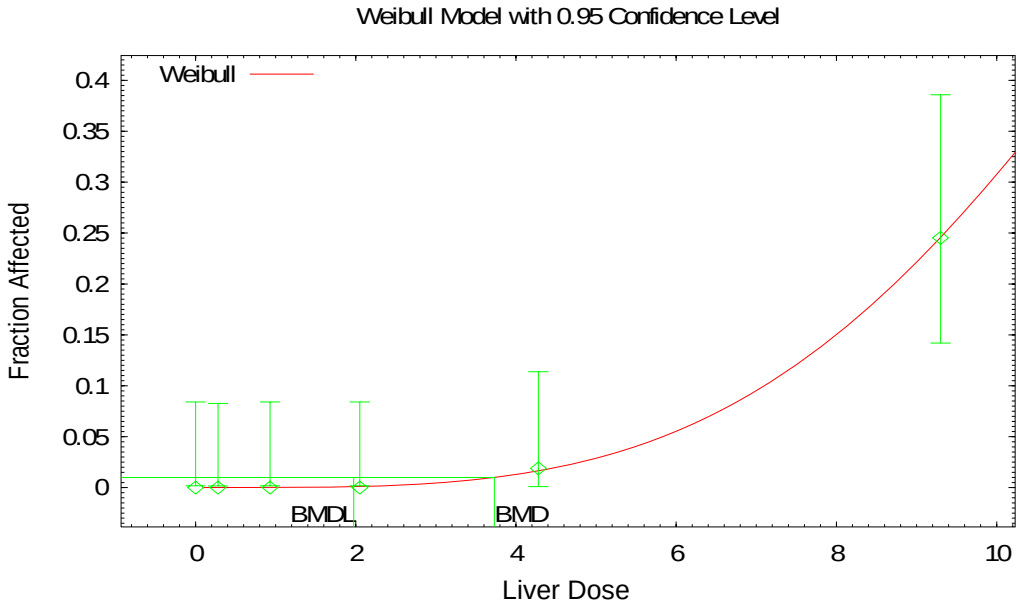
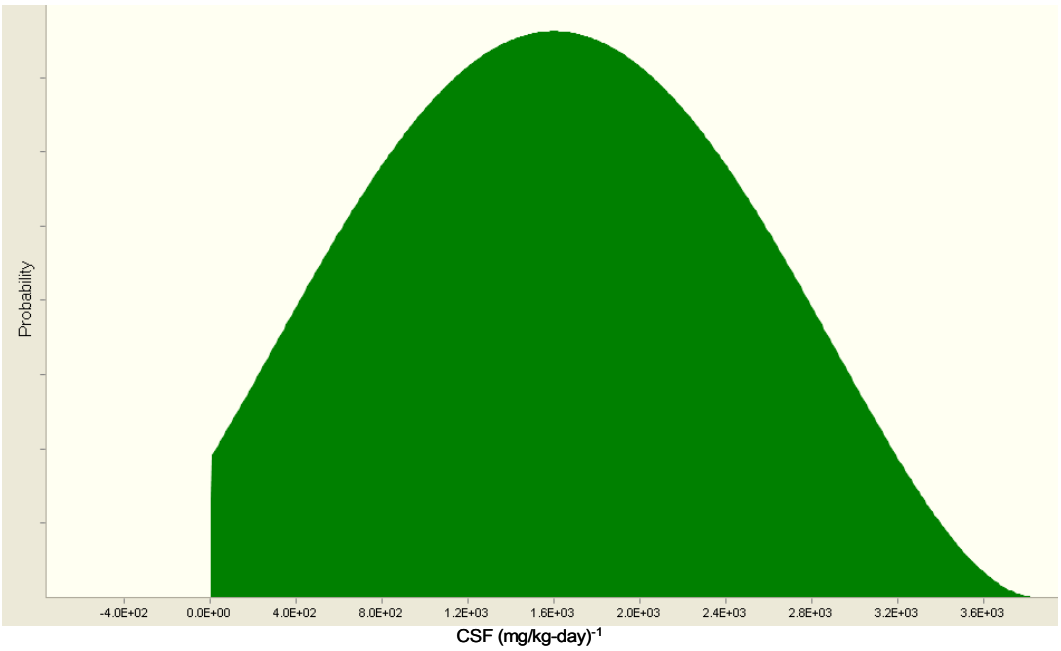


Figure 2. Probability Density Function (BetaPERT) for the Cancer Slope Factor for TCDD Based Upon Maruyama and Aoki (2006)



Appendix E

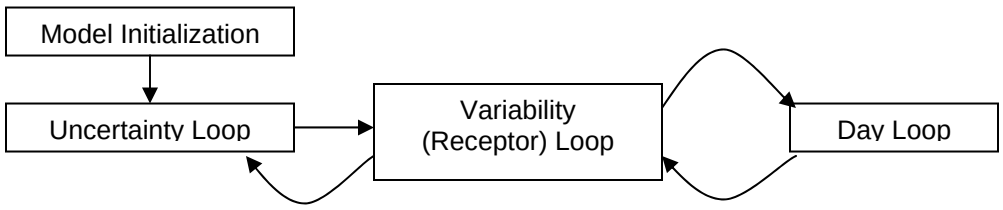
Description of Cabot Carbon/Koppers, Gainesville, Florida On-Site Worker Microexposure Event Model and Example of Model Calculation

Description of Cabot Carbon/Koppers, Gainesville, Florida On-Site Worker Microexposure Event Model and Example of Model Calculation

The Microexposure Event (MEE) model for On-Site Workers at the Cabot Carbon/Koppers Site in Gainesville, Florida (Site) consists of the following components:

- MEE model as an MS-Excel VBA module with UserForm interface
- An Input Database in MS-Access
- Template output files (by COPC) in MS-Excel
- An optional Output Database in MS-Access

The MEE model is two-dimensional – i.e., it assesses both uncertainty and variability. An overall schematic is shown below:



Each of these components is discussed in detail in the remainder of this document. The example calculations shown demonstrate how the calculations are built for an individual iteration. Attachment 1 provides the supporting average daily dose (ADD), lifetime average daily dose (LADD) and potential risk calculations for the example presented in this document. The values shown are rounded for clarity in this summary. The distributions used in this example are the same as those proposed in the On-Site Human Health Risk Assessment Approach document (AMEC, 2008a)[1]. These can be updated as more relevant and appropriate data become available.

Model Initialization Phase

The Model Initialization Phase consists of the following components:

- *Receptor Type*: The user selects to run a Non-Process Area (NPA) worker or a Process Area (PA) worker. The potential risks to the NPA worker are evaluated based on NPA soil results, while the potential risks to the PA worker are evaluated using the PA soil results. The current model default is to run male workers.

- *Select COPC(s)*: Each of the COPCs can be evaluated individually, or all of the COPCs can be run concurrently.

- *Select Number of Uncertainty and Variability Loops*: The user identifies the number of uncertainty and variability loops to be evaluated in the model run. Each variability loop is analogous to a set of receptors that are evaluated for a given set of uncertainty

[1] AMEC. 2008a. *Proposed Approach to Estimating Potential On-Site Human Health Risks Associated with Soils and Sediments at the Koppers Inc. Wood-Treating Facility in Gainesville, Florida*. Submitted to Beazer East, Inc. June 23, 2008.

assumptions. Thus, if a user selects to run 1,000 Variability Loops and 500 Uncertainty Loops, that is the equivalent of choosing to evaluate 500,000 receptors.

- *Load Input Distribution Data from Input Database*: The appropriate input distributions are uploaded from the Input Database into the model. Proposed distributions for most of the parameters were presented in AMEC (2008a). Proposed distributions describing relative absorption factors (RAFs) are being submitted concurrently with this document (AMEC, 2008b)[2]. Note that the model does not require that a distribution be employed for a parameter. The user can select a single value for the exposure or toxicity assumptions.

The distributions in the Input Database represent cumulative percentile distributions of the input values. The quantiles include 0, 1, 2.5, 5 to 95 (in increments of 5), 97.5, 99 and 100%. Within the model, as a random number is drawn for the particular parameter, the bounding quantiles are identified and the resulting input value is interpolated. For example, if the random number for the body weight of males is 38%, then the bounding values from the input distributions for 35% (71.98 Kg) and 40% (73.62 Kg) are identified from the input distribution, and the appropriate value for body weight calculated using linear interpolation (72.96 Kg, in this case). Table 1 summarizes the quantiles for the distributions from the Input Database that are used in the examples below.

Example – The text boxes in this document present example calculations of the sequence of the first two iterations of the day-loop iterations of the MEE model for a hypothetical on-Site worker.

- PA Worker assessed in Process Area
- User selects COPC: Arsenic
- User selects (as an example) 500 uncertainty loops and 1000 receptor loops. Therefore, for each uncertainty loop, the receptor loop will iterate 1000 times.

Uncertainty Loop

The Uncertainty Loop contains those input parameters that are assumed to represent uncertainty about the exact value of the parameter, rather than variability between people. For some parameters professional judgment may be exercised to determine whether they should be evaluated as uncertainty or variability. For example, there are no studies available that have directly quantified the dermal adherence of sandy soils on workers at wood treatment facilities. Therefore, there is some uncertainty in using surrogate studies, such as those that examined the dermal adherence of construction workers, to assess potential dermal adherence for the On-Site workers at this facility. Consequently, it is more appropriate to assess dermal adherence as uncertainty rather than receptor variability.

The current version of the model includes up to three parameters in the uncertainty loop:

- *Dermal Adherence Factors (DAFs)*: DAFs are related to exposed skin surface type. Because the NPA and PA workers have different exposed skin surfaces (the PA workers

[2] AMEC. 2008b. *Relative Absorption Factors (RAFs) for Oral and Dermal Absorption of Compounds in Soil Cabot Carbon/Koppers Site, Gainesville, Florida*. Submitted to Beazer East, Inc. July 23, 2008.

wear more personal protective equipment) the DAF distributions vary between these two receptors. The derivation of the DAFs was presented in the AMEC (2008a).

- *Relative Bioavailability Factors (RAFs)*: RAFs are COPC- specific and pathway-specific. Distributions are available for many of the COPCs and pathways. RAFs are scaled from 0 to 1 (the latter is equivalent to 100% bioavailability). The derivation of the RAF distributions is presented in AMEC (2008b).

- *Toxicity Values*: These can be fixed default EPA values or can be distributions of toxicity values, which can include the default EPA values as part of the distribution. The user can select to run these as part of the Uncertainty Loop (if distributions are used) or the Variability (Receptor) Loop (when fixed values are used). In this example, toxicity is run in the Variability Loop since the arsenic toxicity values are the fixed defaults recommended by EPA. The Approach Document (AMEC, 2008a) showed toxicity values in the Uncertainty Loop because it presumed distributions might be used for the toxicity values.

The random numbers are drawn independently for the DAF and RAF terms using Excel's built-in random number generator (RNG). This is repeated for each uncertainty loop, but the values from a given uncertainty loop are not changed for the variability loops that run under the uncertainty loop. Therefore, if the user selects to run 500 uncertainty loops, there will be 500 different combinations of DAFs and RAFs that are evaluated in the model.

Example – continued

- Uncertainty Loop #1
- PA Worker assessed in Process Area, Arsenic
- RNG draws value of 48% for DAF. By interpolation for the PA worker, the DAF for this uncertainty loop is 0.039 mg/cm^2.
- RNG draws value of 56% for Dermal-RAF for arsenic. By interpolation, the Dermal-RAF for this uncertainty loop is 0.00915.
- RNG draws value of 96% for Oral-RAF for arsenic. By interpolation, the Oral-RAF for this uncertainty loop is 0.278.
- A distribution for the Inhalation-RAF was not available so it is was conservatively assumed to be 1.

Once the user-specified runs of the variability loop are completed, these values are cleared and new values are re-selected for the next iteration of the uncertainty loop. The clearing and re-selection process is continued until the user-specified iterations of the variability are complete.

Variability (Receptor) Loop

The Variability Loop contains those input parameters that represent the potential variability between the receptors. In an MEE framework, the Variability Loop parameters are split between those that define a receptor's exposure profile (i.e., parameters that define for how long and for how many days a year they are exposed and how much a receptor weighs over the course of the expsoure period) and those that can vary on a daily basis (examples of 'Day Loop' parameters are soil ingestion rate and exposure time). The exposure parameters that define the receptor's exposure profile include the following:

- *Exposure Duration (ED)*: Selected from distributions derived from job tenure information reported in Burmaster (2000)[3]. This is based on census data for the 'Lumber and Wood Products Industrial Category'. Actual data job tenure data from the facility can also be used, if available.

- *Exposure Frequency (EF)*: Selected from the proposed input distribution presented in AMEC (2008a). The product of ED and EF is the total number of days exposed for each receptor. The total number of days defines the number of times the Day Loop is iterated for a particular receptor.

- *Body Weight (BW)*: Selected from the proposed male BW input distributions presented in AMEC 2008a.

- *Skin Surface Area (SSA)*: Calculated from BW using the equation from FDEP (2005) and defined by receptor type because the NPA and PA workers have different skin surface areas exposed.

Values for the parameters that define a receptors' exposure profile are selected once at the beginning of the variability loop and remain the same for all of the days a particular receptor is exposed to on-Site soils. As described above for the uncertainty loop, for those parameters defined by a distribution, the value for each parameter is selected at random from the user-defined distribution using Excel's RNG.

The Day Loop portion of the Variability Loop includes the following parameters:

- *Soil Ingestion Rates*: Selected from the proposed input distribution presented in AMEC, 2008a.

- *COPC concentration in soil*: The distribution is derived from measured concentrations of COPCs in on-Site soils and is COPC-specific and area-specific.

- *Inhalation Rates (InR)*: Selected from the proposed input distribution presented in AMEC, 2008a.

- *Exposure Time (ET)*: Selected from the proposed input distribution presented in AMEC, 2008a. This parameter is used to estimate the number of hours a worker is on-Site and exposed to dust in air.

- *Respirable Particulate Matter (RPM)*: The RPM values represent the PM_{10} values from an air monitoring station located near Gainesville, as discussed in AMEC, 2008a. This distribution can be updated pending review of new or alternate datasets.

- *COPC concentration in air (as dust)*: This is calculated as the product of RPM and COPC concentration in soil, adjusting to concentration units of mg/m^3. These are COPC-specific and specific to the area of the Site a receptor is assumed to be exposed.

[3] Burmaster, D.E. 2000. Distributions of total job tenure for mean and women in selected industries and occupations in the United States, February 1996. *Risk Analysis*. 20(2): 205-224.

Unique values for the parameters that define a receptors' daily exposure are selected for every day the receptor is exposed (i.e., at the beginning of every Day Loop). For those parameters defined by a distribution, the values are selected at random using Excel's RNG from the user-defined distributions.

The LADD (or ADD, depending upon the type of toxicity value) is calculated at the end of each Day Loop. Once all of the days for a given Variability (Receptor) Loop are completed (the number of days being defined by the product of EF and ED), the LADDs (or ADDs) and associated estimates of potential risk from each Day Loop are summed to derive the total LADD (or ADD) and potential risk for that given receptor. The potential risks are then estimated by applying the appropriate toxicity benchmark for the evaluated COPC and exposure pathway. Therefore, at the end of all of the Day Loops for a given receptor there is one set of potential risk estimates for each evaluated COPC and exposure pathway. These results are stored by the model.

The model then proceeds to the next Variability (Receptor) Loop, creates a new receptor profile, calculates the number of days exposed, and starts the Day Loops again for that new receptor. A new set of potential risk estimates for each evaluated COPC and exposure pathway is then calculated. These results are stored by the model.

After completion of all the variability loops, the model then calculates pre-defined percentiles of potential risks by COPC and pathway and saves these percentiles by exposure pathway and COPC in an Excel table[4]. This results in percentile risks across all of the variability (receptor) loops. As an example, if the user selected to run 50 variability loops (i.e., 50 receptors), the model summarizes the percentiles of the risks across all 50 variability loops and stores the percentile results. This represents the variability among receptors for a fixed combination of uncertainty parameters and is an interim output of the model.

The model then returns to the uncertainty loop, re-selects the uncertainty parameters, and restarts the variability loop with a new set of receptors and input parameters. The process is continued until all of the user-defined uncertainty loops have been completed.

Following completion of all of the uncertainty loops, an additional summarization is performed by calculating pre-defined percentiles of potential risks by COPC and pathway across each of the interim output risk results, as shown in the schematic below.

[4] There is also an option to send the individual receptor loop risk risks to an Output database. The latter allows the retention of the individual risk results by uncertainty and variability, as opposed to the pre-defined percentile values that are exported to Excel by the model.

Interim Output

	VARIABILITY LOOP RISKS			
UncertLoop	**0%RISK**	**1%RISK**	**2.5%RISK …**	**100%RISK**
1				
2				
3 …				

[At end of all uncertainty loops]

	VARIABILITY LOOP RISKS			
UncertRisks	**0%RISK**	**1%RISK**	**2.5%RISK …**	**100%RISK**
0%RISK				
1%RISK				
2.5%RISK …				
100%RISK				

The lower table in the schematic above is the principal output of the MEE model. These tables are prepared for each COPC, exposure pathway, across the pathways for a given COPC, and across all COPCs. Graphs can be generated from this table showing the bounding uncertainty estimates across the risk variability range.

Example – continued

Uncertainty Loop #1 (as described in the prior text box)

- PA Worker assessed in Process Area, Arsenic
- Uncertainty Parameters: DAF = 0.039 mg/cm^2, Dermal-RAF = 0.00915, Oral-RAF = 0.278, Inhalation-RAF = 1

Variability Loop #1

- RNG draws value of 81% for ED. By interpolation, the ED for this receptor is 12.34 years
- RNG draws value of 26% for EF. By interpolation, the EF for this receptor is 231.24 days/year.
- The model then multiplies EF times ED to establish the total number of days this particular receptor will be exposed to on-Site soils. For the receptor in this example the product of ED and EF is 2,853 days, so the Day Loop will be iterated 2,853 times.
- RNG draws value of 28% for BW. By interpolation, the BW for this receptor is 69.7 Kg.
- SSA is calculated from the BW using FDEP (2005) equation and also presented in the AMEC (2008a). In this case, the surface area exposed is 437.3 cm^2 given the bodyweight selected for this receptor.
- The toxicity values are the oral, dermal and inhalation slope factors for Arsenic from EPA.

<u>Day Loop #1 in Variability Loop #1</u>

- RNG draws a value of 83% for the soil ingestion rates. By interpolation, the soil ingestion rate is 31.7 mg/day for the first day
- RNG draws value of 52% for Arsenic in the process area (PA). By interpolation of the site-specific distribution in the PA, the spatially-weighted mean arsenic concentration the receptor is exposed to during the first day is 106.95 mg/Kg.
- RNG draws value of 81% for inhalation rates. By interpolation, the air inhalation rate is 1.6 m^3/h for the first day.
- RNG draws value of 16% for exposure time (ET). By interpolation, the ET for this receptor is 7.1 hours for the first day.
- RNG draws value of 91% for respirable particulate matter (RPM). By interpolation, the RPM is for this receptor is 0.014 mg/m^3 for the first day.
- COPC in dust calculated as product of soil EPC and RPM; the value is 1.5E-6 mg/m^3 for the first day.

At the end of Day Loop #1, the model estimates Day Loop LADDs (in mg/kg-day) for arsenic of 5.3E-10, 9.4E-12, and 9.0E-14 for the cancer ingestion, dermal, and inhalation exposures (respectively), using the standard exposure equations presented in AMEC (2008a). These Day Loop LADDs are associated with Day Loop potential cancer risks of 7.9E-10, 1.4E-11, and 1.4E-12, respectively, or a total risk of 8.1E-10 (not shown in Attachment 1). These results are saved; the model then clears the values for each of the exposure parameters in the Day Loop and starts the second iteration (out of 2,853, in this example) by using Excel's RNG to select exposure parameters for the second iteration of the Day Loop.

<u>Day Loop #2 in Variability Loop #1</u>

- RNG draws values of 55% for soil ingestion rates, 85% for arsenic in PA area, 38% for inhalation rates, 32% for ET, and 83% for RPM, By interpolation, the values for each of the parameters for the second day are: soil ingestion (20.1 mg/day), Arsenic in soil (133.6 mg/Kg), inhalation rate (1.34 m^3/h), ET (7.6 h/day), RPM (0.012 mg/m^3), and Arsenic in dust (1.6E-6 mg/m^3).
- The resulting Day Loop LADDs (in mg/kg-day) for soil ingestion, soil dermal contact and soil inhalation are: 6.6E-10, 1.2E-11 and 8.6E-14, respectively. These correspond to Day Loop excess lifetime cancer risks of 9.9E-10, 1.8E-11, and 1.3E-12, respectively, and a total risk of 1.0E-9.

The draws are then repeated for each additional day until the total number of days (2,853 for receptor in this example) is reached. The risks are summed by pathway to yield the receptor's total risk.

Attachment 1 shows the ADD, LADD and risk calculations for arsenic using a PA worker (both genders) though two Day Loops. This demonstrates how the Variability Loop and Day Loop parameters change as the model iterates.

Table 1. Beazer-Gainesville On-Site Worker Microexposure Event Model
Quantiles for Input Parameter Distributions Used for the MEE Example

Percentile	Soil Conc Process Area Arsenic (mg/Kg)	Dermal Adherence Factor (DAF) (mg/cm^2)	Dermal RAF Arsenic	Oral RAF Arsenic	Inhal RAF Arsenic	Exp Duration (ED) (years)	Exp Freq (EF) (days/yr)	Body Weight (BW) (Kg)	Skin Surface Area (SSA) (cm^2)	Soil Ingestion Rates (mg/day)	Inhalation Rates (m3/h)	Exposure Time (ET) (h/day)	Respirable Particulate Matter (RPM) (mg/m^3)	Arsenic Dust Conc (mg/m^3)
0	22.0	0.001	0.0051	0.0006	1	0.25	225.2	44.0	319.8	0.697	1.05	6.0	0.0036	7.9E-08
0.01	48.0	0.003	0.0067	0.023	1	0.25	226.2	46.9	333.8	2.67	1.05	6.3	0.0041	1.9E-07
0.025	53.7	0.006	0.0070	0.042	1	0.25	226.9	51.3	354.7	3.92	1.07	6.4	0.0041	2.2E-07
0.05	63.3	0.009	0.0074	0.059	1	0.25	227.7	58.6	388.5	5.34	1.12	6.6	0.0045	2.8E-07
0.1	72.3	0.014	0.0077	0.082	1	0.25	228.9	62.3	405.1	7.35	1.17	6.9	0.0050	3.6E-07
0.15	78.2	0.018	0.0080	0.097	1	0.25	229.7	64.9	416.6	8.90	1.21	7.1	0.0056	4.4E-07
0.2	83.6	0.021	0.0082	0.109	1	0.38	230.5	66.8	424.9	10.2	1.24	7.3	0.0059	5.0E-07
0.25	87.7	0.024	0.0083	0.120	1	0.51	231.1	68.7	433.1	11.5	1.27	7.4	0.0065	5.7E-07
0.3	91.6	0.027	0.0085	0.130	1	0.92	231.7	70.3	440.1	12.8	1.3	7.5	0.0069	6.3E-07
0.35	95.2	0.031	0.0086	0.139	1	1.35	232.2	72.0	447.1	14.1	1.32	7.7	0.0072	6.9E-07
0.4	98.7	0.034	0.0087	0.147	1	1.72	232.7	73.6	454.0	15.5	1.35	7.8	0.0076	7.5E-07
0.45	102.2	0.037	0.0089	0.155	1	2.09	233.2	75.3	460.9	17.0	1.38	7.9	0.0080	8.2E-07
0.5	105.6	0.04	0.0090	0.163	1	2.45	233.7	76.9	467.8	18.5	1.4	8.0	0.0085	9.0E-07
0.55	109.0	0.044	0.0091	0.172	1	3.49	234.1	78.6	474.9	20.1	1.43	8.1	0.0089	9.7E-07
0.6	112.5	0.047	0.0093	0.180	1	4.23	234.5	80.4	482.1	21.9	1.47	8.2	0.0093	1.0E-06
0.65	116.0	0.051	0.0094	0.188	1	6.21	234.9	82.1	489.2	23.7	1.5	8.3	0.0097	1.1E-06
0.7	120.0	0.055	0.0095	0.197	1	8.23	235.3	83.9	496.2	25.6	1.54	8.5	0.0104	1.2E-06
0.75	123.9	0.059	0.0097	0.207	1	10.3	235.7	85.6	503.2	27.7	1.58	8.6	0.0111	1.4E-06
0.8	128.2	0.064	0.0098	0.218	1	12.4	236.1	88.4	514.6	30.1	1.62	8.7	0.0118	1.5E-06
0.85	133.6	0.071	0.0100	0.231	1	15.1	236.6	91.3	525.9	32.8	1.67	8.9	0.0126	1.7E-06
0.9	140.4	0.079	0.0103	0.246	1	18.0	237.3	95.7	543.0	35.9	1.72	9.1	0.0138	1.9E-06
0.95	150.2	0.092	0.0106	0.270	1	21.9	238.1	102.7	569.8	40.0	1.81	9.4	0.0170	2.6E-06
0.975	161.6	0.105	0.0110	0.290	1	23.4	238.6	104.8	577.9	42.9	1.85	9.6	0.0212	3.4E-06
0.99	168.5	0.119	0.0113	0.314	1	24.3	239.1	106.1	582.7	45.5	1.9	9.7	0.0231	3.9E-06
1	199.7	0.187	0.0126	0.400	1	25.0	240.0	107.0	586.0	49.7	1.95	10.0	0.0284	5.7E-06

Notes:
These are the distribution of values used in the MEE example and were discussed in AMEC (2008a).
The values shown for the arsenic Process Area soil concentrations are the spatial bootstrap mean values.

Attachment 1
Example Calculations Based On MEE Model Iterations - Arsenic in PA Workers

Risk Calculation

Scenario:	Current
Receptor:	KI Site Process Worker
Medium:	Shallow Soil (0-1')

Hazard Quotient (HQ) = ADD (mg/kg-day) / RfD (mg/kg-d)
Cancer Risk (ELCR) = LADD (mg/kg-day) * CSF [1/(mg/kg-day)]

Parameter (units)	Var Loop 1, Day Loop 1	Var Loop 1, Day Loop 2	
Uncertainty Parameters			
DAF: Dermal Adherence Factor (mg/cm2)	0.039	0.039	
Oral-RAF: Absorption Adjustment Factor (Oral-Soil) (unitless)	0.278	0.278	
Dermal-RAF: Absorption Adjustment Factor (Dermal-Soil) (unitless)	0.00915	0.00915	
Inhalation-RAF: Absorption Adjustment Factor (Inhal-Soil) (unitless)	1	1	
Variability Parameters - Receptor Loops			
ED: Exposure Duration (years)	12.34	12.34	
EF: Exposure Frequency (days/year)	231.24	231.24	
BW: Body Weight (kg)	69.7	69.7	
SSA: Skin Surface Area (cm2/event)	437.3	437.3	Calc from BW
FI: Fraction Ingested from Site (unitless)	1	1	
FA: Fraction Absorbed from Site (unitless)	1	1	
RfDo: Oral Reference Dose (mg/kg-day)	0.0003	0.0003	Toxicity values run in variability loop since are fixed values
RfDd: Dermal Reference Dose (mg/kg-day)	0.0003	0.0003	Toxicity values run in variability loop since are fixed values
RfDi: Dermal Reference Dose (mg/kg-day)	No value	No value	No value reported in IRIS for As non-cancer inhalation pathway
CSFo: Oral Cancer Slope Factor [1/(mg/kg-day)]	1.5	1.5	Toxicity values run in variability loop since are fixed values
CSFd: Dermal Cancer Slope Factor [1/(mg/kg-day)]	1.5	1.5	Toxicity values run in variability loop since are fixed values
CSFo: Inhal Cancer Slope Factor [1/(mg/kg-day)]	15.1	15.1	Toxicity values run in variability loop since are fixed values
Variability Parameters - Day Loops			
ET: Exposure Time (h/day)	7.1	7.6	
RPM: Respirable Particulate Matter (mg/m3)	0.014	0.012	
CS: Constituent Concentration in Soil (mg/kg)	106.95	133.6	
Cd: Constituent Concentration in Air as Dust (mg/m3)	1.5E-06	1.6E-06	
IR: Ingestion Rate (mg/day)	31.7	20.1	
InhR: Inhalation Rates (m3/h)	1.6	1.34	
ATnc: Averaging Time (days) (ED x 365 days/yr, noncancer)	4504.1	4504.1	
ATc: Averaging Time (days) (70 yr. x 365 days/yr, cancer)	25550	25550	
CF: Conversion factor (kg/mg)	1.00E-06	1.00E-06	

INGESTION PATHWAY

		Noncancer Hazard Quotient				Excess Lifetime Cancer Risk			
Constituent	Soil Concentration (mg/kg)	Oral-Soil RAF (noncancer) Chronic	Oral Day Loop ADD (mg/kg-day)	Chronic RfD (mg/kg-day)	Day Loop Oral Soil HQo	Oral-Soil AAF (cancer)	Oral Day Loop LADD (mg/kg-day)	CSF [1/(mg/kg-day)]	Day Loop Oral Soil Risk
ARSENIC									
Var Loop 1, Day Loop 1	106.95	0.278	3.00E-09	3.00E-04	1.00E-05	0.278	5.29E-10	1.50E+00	7.94E-10
Var Loop 1, Day Loop 2	133.60	0.278	3.75E-09	3.00E-04	1.25E-05	0.278	6.61E-10	1.50E+00	9.92E-10
Continues until reaches max exposed days (2853 for this example)									

DERMAL PATHWAY

		Noncancer Hazard Quotient				Excess Lifetime Cancer Risk			
Constituent	Soil Concentration (mg/kg)	Dermal-Soil RAF (noncancer) Chronic	Dermal Day Loop ADD (mg/kg-day)	Chronic RfD (mg/kg-day)	Soil HQd	Dermal-Soil AAF (cancer)	Dermal Day Loop LADD (mg/kg-day)	CSF [1/(mg/kg-day)]	Day Loop Dermal Soil Risk
ARSENIC									
Var Loop 1, Day Loop 1	106.95	0.00915	5.32E-11	3.00E-04	1.77E-07	0.00915	9.37E-12	1.50E+00	1.41E-11
Var Loop 1, Day Loop 2	133.60	0.00915	6.64E-11	3.00E-04	2.21E-07	0.00915	1.17E-11	1.50E+00	1.76E-11
Continues until reaches max exposed days (2853 for this example)									

INHALATION PATHWAY

			Noncancer Hazard Quotient	Excess Lifetime Cancer Risk			
Constituent	Soil Concentration (mg/kg)	Dust Concentration (mg/m3)	Inhalation HQ	Inhal-Soil RAF (cancer)	Inhal Day Loop LADD (mg/kg-day)	CSF [1/(mg/kg-day)]	Inhal Soil Risk
ARSENIC			Noncancer inhalation risks				
Var Loop 1, Day Loop 1	106.95	1.54E-06	are not evaluated - no	1	9.01E-14	1.51E+01	1.36E-12
Var Loop 1, Day Loop 2	133.60	1.64E-06	inhalation RfD available	1	8.58E-14	1.51E+01	1.30E-12
Continues until reaches max exposed days (2853 for this example)							

Note:
Cancer and Non-Cancer Risks are summed across all of the exposed days to represent the receptor's total potential risk(s)
FI and FA can also be input in the model but for the KI worker are assumed to be 1.0.

Appendix F

Proposed Approach to Estimating Potential On-Site Human Health Risks Associated with Soils and Sediments at the Koppers Inc. Wood-Treating Facility in Gainesville, Florida

Proposed Approach to Estimating Potential On-Site Human Health Risks Associated with Soils and Sediments at the Koppers Inc. Wood-Treating Facility in Gainesville, Florida

Submitted to:
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Submitted by:

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1.0 INTRODUCTION

This report presents the methodology Beazer East Inc. proposes to use to estimate potential on-Site human health risks that may result from direct contact with Site-related constituents in on-Site soils and sediments at the Koppers wood treating facility in Gainesville, Florida. The overall approach follows USEPA's standard four step human health risk assessment paradigm (i.e., Hazard Identification, Exposure Assessment, Toxicity Assessment and Risk Characterization). The approach incorporates several phases including both a conservative assessment of potential risks using deterministic risk estimation methods to develop preliminary highly conservative estimates of potential risk and an advanced probabilistic method (Microexposure® Event (MEE) Modeling, described in detail below) to refine the preliminary conservative potential risks for environmental media, potential receptors and Site-related constituents that exceed allowable risk benchmarks.

The approach described in this document is designed to provide conservative and realistic estimates of current risks to human receptors due to exposure to on-Site soil and sediment. If current risks exceed allowable levels, then the assessment process will be repeated using appropriate engineering controls (e.g., soil covers or direct contact barrier) to determine if post-remediation risks are acceptable. An iterative process is envisioned, wherein different layouts for proposed engineering controls are tested. Acceptable engineering controls (from a standpoint of soil/sediment exposure) will be those that result in acceptable risk levels. The endpoint of the risk assessment process will be a demonstration that post-remediation soil and sediment risks to current and future on-Site human receptors are below applicable risk thresholds – specifically,a hazard quotient of less than one and an excess lifetime cancer risk less than one in a million.

1.1 Overview of Phased Risk Assessment Approach

Several phases and decision points are used in the proposed approach to expedite the overall risk assessment process and to focus the more advanced probabilistic risk assessment methods that lead to more refined and realistic estimates of potential risk on the media, receptors and constituents that pose the greatest potential risks. The overall structure of the phased approach is described briefly in the next few paragraphs. The overall process can be viewed as having four key decision points at which either constituents, receptors or media may be documented to meet allowable risk benchmarks and not need to be evaluated further in the risk assessment. The first decision point arises during the Hazard Identification step of the risk assessment. After examining the detection frequency of constituents or comparing constituent concentrations to screening levels, some constituents may be eliminated from the risk assessment.

For constituents remaining in the risk assessment after the Hazard Identification step, conservative point estimates of potential risk will be developed using a deterministic risk assessment approach. The resulting conservative estimates of potential risk will be compared to allowable risk benchmarks (i.e., an allowable excess lifetime cancer risk of one in one million and an allowable Hazard Quotient of 1.0) to identify constituents, receptors and exposure media that meet these allowable risk benchmarks and those

that exceed the benchmarks. The comparison of the conservative point estimates of potential risk to allowable risk benchmarks is the second key decision point in the overall risk assessment process.

For those combinations of constituents, receptors and exposure media that have conservative point estimates of potential risk exceeding allowable risk benchmarks, estimated potential risks may be refined using advance probabilistic risk assessment methods (i.e., MEE modeling). Given that KI workers are assumed to have a greater potential for exposure to COPCs in on-Site soils than the other potential on-Site receptors (i.e., trespasser, construction worker, utility worker), the risk assessment approach described in this document assumes that the probabilistic analysis will only need to be conducted for KI workers. The probabilistic modeling will be conducted in two phases. At the end of each, the more refined estimates of potential risk will be compared to allowable risk benchmarks, representing the third and fourth key decision points in the overall risk assessment process. The first phase of the probabilistic modeling will develop distributions of potential risk using distributions instead of conservative point estimates for key exposure assumptions but will use point estimates for toxicity values (i.e., reference doses (RfDs) and cancer slope factors (SFs)). Potential risks for combinations of constituents, receptors and exposure media still exceeding allowable benchmarks may be further refined in a second phase of probabilistic modeling that will employ distributions for both exposure assumptions and toxicity factors or may employ alternate toxicity factors. Resulting distributions of potential risk will, once again, be compared to allowable risk benchmarks to identify any combinations of constituents, receptors and exposure media that exceed allowable risk benchmarks.

The proposed risk assessment approach also allows for evaluation of future on-Site conditions that differ from current conditions. For example, if any combinations of constituents, receptors and exposure media exceed allowable risk benchmarks, alternative distributions of on-Site soil concentrations (that might be representative of Site conditions following a proposed remedial solution) can be input into the risk assessment and a revised distribution of potential risk can be estimated. This revised distribution of potential risk can be compared to the allowable risk benchmarks. If the revised distribution of potential risk meets allowable risk benchmarks, then conditions at the Site would be judged to be acceptable.

1.2 Structure of Proposed Approach Document

Section 2 summarizes the Hazard Identification process, the key outcome of which is the selection of constituents of potential concern (COPCs). COPCs will be selected by comparing the maximum concentration of all constituents with a detection frequency of greater than 5% to industrial soil screening benchmarks.

The Exposure Assessment (Section 3) describes the partitioning of the Site into three potential exposure areas: the process area (PA); the non-process area (NPA) and sediments. The default assumption is that the future use of the Site will remain the same as current use. Should any other commercial/industrial future land uses become relevant, potential risks associated with those uses will be evaluated using the risk assessment process proposed herein.

Division of the Site into the PA and NPA is based upon different types of wood treating-related activities with unique worker exposures occurring on unique portions of the Site. Sediments are differentiated from soils because of expected differences in contact frequency. The receptors potentially assumed to be exposed to soils or sediments are also described in Section 3 along with the equations and exposure parameters that will be used to estimate their potential exposures. Note that the conservative deterministic and the more realistic probabilistic MEE assessments both use the same fundamental exposure estimation equations but the former uses conservative point estimates for each exposure assumption while the latter uses a distribution for most parameters. An overview of the geostatistical spatial bootstrapping method that will be used to derive exposure point concentrations (EPCs) for each COPC in each exposure area is also presented in Section 3, as is a general description of the application of COPC-specific relative absorption factors (RAFs).

The Toxicity Assessment section (Section 4) contains a brief discussion of the sources of RfDs and SFs for the conservative deterministic assessment. The specific toxicity benchmarks will depend on which constituents end up being selected as COPCs. The conservative point estimate toxicity values will also be used to derive initial distributions of potential risk using the MEE model. If the initial MEE-derived distributions result in potential risks that meet allowable benchmarks, then additional more refined and realistic runs of the MEE model will not be needed. However, if initial MEE model runs using distributions for exposure parameters but not toxicity benchmarks predict potential risks above allowable benchmarks, then further runs of the MEE model using distributions for both exposure and toxicity parameters may be conducted to develop a more realistic and representative distribution of potential risk.

Section 5 presents the Risk Characterization. The equations used to estimate potential risk are described first, followed by the elements of the phased approach to characterizing potential risk at the Site. The first phase of risk characterization will consist of developing conservative estimates of potential risk using a deterministic approach where each parameter in the equations that are used to estimate risk is represented by a single value. For combinations of constituents, receptors, exposure areas and COPCs that have estimated potential risks below allowable benchmarks, further more refined and realistic evaluation of potential risks using the MEE model will likely not need to be conducted. For combinations of constituents, receptors, exposure areas and COPCs for which point estimates of potential risk exceed allowable risk benchmarks, more refined assessment of potential risk may be undertaken using the MEE model. Note that such refined assessment using the MEE model may not be undertaken for all receptors and COPCs exceeding allowable risks benchmarks. An example of where such additional refined assessment may not be necessary is if a more potentially exposed receptor has already been identified for refined MEE assessment, then potential risks associated with a less exposed receptor may not need additional refinement, assuming the refined assessment finds the refined potential risks of the more exposed receptor to be allowable.

The remainder of the Introduction describes the proposed MEE modeling approach in more detail. Subsequent sections of the report correspond to the four steps of human

health risk assessment (described above) and provide more detail about the proposed approach for each step.

1.3 MicroExposure Event Modeling

Deterministic risk assessment by design relies on single estimates of exposure and does not allow for variation in exposure parameters/assumptions for the people being exposed. Such analyses identify highly exposed cases and develop very conservative and unrealistic estimates of potential risks based on the combination of numerous conservative assumptions. In order to increase the realism of a risk assessment, probabilistic methods can be employed (USEPA, 2001). Monte Carlo analyses (MCA), one kind of probabilistic analysis, examine the ranges of possible exposures and produce a distribution of potential risks related to exposure to constituents in soils. More advanced probabilistic methods such as Microexposure® Event (MEE) modeling further refine the MCA by profiling the lifestyles of individuals, factoring in changes in exposure from day to day and throughout a lifetime, and thus develop more realistic estimates of potential exposure and potential risk.

As with standard MCA, multiple iterations (several thousand) are performed during an MEE analysis, but in the MEE analysis there is a shift in emphasis from generalizing about an entire population's exposure to applying relevant information to estimate the exposures to individuals within that population. In brief, an individual's total exposure to a constituent is calculated by summing the doses received during many individual exposure events (i.e., the potential exposure a worker is assumed to experience every day as he or she goes to work for all the days they are employed at the facility) that are tracked by the model through their lifetime. Each event is simulated using information specific to the time and location of the exposure event. The number of events and order that they occur in the person's life can be simulated based upon site-specific demographic data and information on the individual's short- and long-term behavior. This approach allows a more realistic representation of potential exposures, rather than a standard MCA, which randomly draws exposure assumptions from prescribed distributions that may be contradictory. For example, a standard MCA may randomly draw a low body weight but then also select an unrealistically high skin surface area as part of the same iteration.

Figure 1 shows the basic schematic of an MEE analysis for the three principal soil exposure pathways (oral, dermal contact, and dust inhalation) relevant to the on-Site soils. As the MEE enters each iteration, a "profile" of the receptor (an on-Site Koppers Inc. (KI) worker, in this case) is developed which includes all of their key exposure assumptions, such as soil ingestion rates, job activities, etc. This receptor is then stepped through each day of their working life based on this profile. Using this example, the soil ingestion rate for any given day is determined by picking a rate from the distribution of potential ingestion rates. Then the soil concentration the individual is exposed to on each day is also determined by picking a soil concentration from the soil concentration distribution, or using spatially-representative data (related to their actual site activities), and stepping through this for every day the worker is exposed. Other parameters, such as the relative absorption factor from soils, are integrated into the MEE. The result is that a more realistic exposure estimate is obtained compared to standard MCA (or deterministic) analysis.

The unique characteristics of KI workers require development of an MEE analysis specific to on-Site worker exposures. The MEE model can include exposure parameter distributions based on worker behavior, such as job roles (and durations), overall employment tenure, use of protective clothing, time spent in different areas on-Site, etc., or simply be based upon the exposure assumptions KI has indicated to Beazer are representative of KI Workers. For those parameters where KI worker-specific data are unavailable (e.g., soil ingestion rate, adherence factor, relative bioavailability), the MEE analysis will rely on distributions of general worker population data (summarized in Section 4).

As with other probabilistic risk methods, the same basic equations used in deterministic risk calculations are extended to include distributions for the input parameters. The focus of the MEE model will be the potential cancer and non-cancer risks for on-Site KI workers from potential exposure to COPCs in on-Site soils. A “two-dimensional” MEE analysis will be performed which accounts for both uncertainty and variability in the exposure assumptions and toxicity benchmarks.

The MEE modeling will be conducted in phases. The first phase will use distributions for exposure parameters and point estimates for toxicity parameters. If after completion of the first phase of the MEE modeling, some receptors still have potential risks above allowable benchmarks, a second phase of MEE modeling may be undertaken. The second phase will use distributions for exposure parameters and toxicity parameters in order to develop as realistic estimates of potential risk as possible. In addition to employing distributions of toxicity parameters, the second phase of MEE modeling may also employ alternative toxicity parameters available in the peer-reviewed literature.

2.0 HAZARD IDENTIFICATION

The Hazard Identification step of the Human Health Risk Assessment (HHRA) involves identifying the Site-related COPCs that will be quantitatively evaluated in the risk assessment.

As a result of several phases of environmental investigation conducted at the Site, certain constituents were identified in one or more of the environmental media to which humans may be exposed. Soils (at a variety of depths) and sediments at a variety of locations were sampled and analyzed for a variety of constituents. In order to focus the human health risk assessment on COPCs, a multi-step screening process will be used.

2.1 COPC Screening

The screening will first consider the frequency of detection of each constituent in each medium, then compare each constituent's maximum concentration in each environmental medium to that constituent's human health risk-based screening values. A frequency of detection of less than 5% will be considered to reflect an insignificant level of detection. Any constituent detected in less than 5% of the samples for each media will not be considered further in the risk assessment. For constituents detected in more than 5% of the samples for soil and sediment, maximum concentrations will be compared to USEPA Region 6 Industrial Outdoor Worker Soil Human Health Medium-Specific Screening Levels (USEPA, 2008).

If a constituent's maximum detected concentration in a medium exceeds its screening value, then the constituent in that medium will be retained as a COPC. If a constituent's maximum concentration does not exceed its screening value, then that constituent will be excluded from the risk assessment.

3.0 EXPOSURE ASSESSMENT

The Exposure Assessment step involves estimating the Average Daily Dose (ADD) for non-carcinogenic endpoints and the Lifetime Average Daily Dose (LADD) for estimating potential excess lifetime cancer risk of each COPC for each human receptor from all complete exposure pathways. This potential dose of a COPC, when combined with that COPC's dose-response characteristics identified in the Toxicity Assessment, will be used to estimate potential health risks.

A receptor's dose depends on:

- the constituent's concentration in various environmental media (e.g., soil, sediment);
- assumed biological characteristics and behaviors of an individual (e.g., body weight, ingestion rates of soil and water, skin surface area, frequency and duration of contact with each environmental medium, etc); and
- constituent-specific parameters that influence constituent absorption

If a constituent is absent from a medium or it is physically impossible for a receptor to contact a medium, then the exposure pathway will be considered incomplete (USEPA, 1986), and there will be no dose to the receptor. Other potential exposure pathways will be considered complete and will be evaluated in this risk assessment.

3.1 Methodology for Estimating Exposure Point Concentrations

EPCs will be estimated using all analytical data collected from field investigations conducted from 1995 through present. Much of this information comes from the 2006 comprehensive Site-wide soil and sediment sampling event (AMEC, 2007). The post-1995 data set used for this analysis fully covers the Site, including all known and suspected source areas. Data from earlier sampling is therefore not needed for this assessment.

3.1.1 EPCs for Soils

Because receptors evaluated in the HHRA will be assumed to be exposed to soil at differing depth intervals, EPCs will be developed for both surface soil (0-2 ft below ground surface (bgs)) and subsurface soil (0-6 ft bgs). Samples collected during the 2006 sampling event have been collected from multiple depth intervals. For example, at some locations, samples have been collected from 0-0.25 ft bgs, 0.25-0.5 ft bgs, 0.5-2 ft bgs, and 2-6 ft bgs. When multiple samples have been collected at various depths at the same soil sample location, a depth-weighted average concentration will be developed to represent the surface soil (0-2 ft bgs) EPC and subsurface soil (0-6 ft bgs) EPC for each COPC at each sampling location. The depth-weighted average concentration will be developed by assigning a weight to each sample result that corresponds to the fraction of the total depth interval represented by the sample. For example, to estimate the depth-weighted average concentration in surface soil at a

location where samples have been collected from 0-0.25 ft bgs, 0.25-0.5 ft bgs, and 0.5-2 ft bgs, the 0-0.25 ft sample will be assigned a weight of 0.125, the 0.25-0.5 ft sample will be assigned a weight of 0.125, and the 0.5-2 ft sample will be assigned a weight of 0.75.

Once depth-weighted averages are estimated for each sample point, EPCs in surface and subsurface soil will be estimated using spatial averaging techniques that account for the spatial distribution of COPC concentrations in soil.

Spatially-weighted averages for each exposure area (see Section 3.2) will be calculated using a geostatistical (Thiessen polygon) approach. Geostatistical methods have been researched, used, and endorsed by USEPA for approximately the past two decades. The usefulness of geostatistical tools to help overcome variation in sampling distribution is described in several USEPA documents published over the past twenty years (Breckenridge et al, 1991; USEPA, 2001b). USEPA began research into geostatistical methods around 1985, and has developed its own geostatistical software tools including GEO-PACK and GEO-EAS, which became available in 1990 and 1991, respectively (USEPA, 1990; Englund and Sparks, 1991). Perhaps most notably, risk assessment guidance published by USEPA includes use of geostatistical methods to improve data analysis and to help determine the EPC.

The Thiessen polygon technique was selected as the most appropriate spatial tool because it captures the representativeness of the sampling locations across the evaluated area without any biases that may be introduced by more complex interpolative geospatial tools such as Kriging or splining.

The Thiessen polygon geostatistical approach involves using software (for example, ArcGIS) to draw Thiessen polygons in each exposure area so that each polygon contains one sample point, and all unsampled points in a polygon are closer to that polygon's sample point than to any other polygon's sample point. All soil within a polygon is then assumed to have the same concentration as the depth-weighted average at that polygon's sample point. A spatially weighted average concentration for an exposure area is calculated by considering the fraction of the total exposure area that each individual polygon represents. This spatially weighted average concentration represents a central tendency estimate of the exposure point concentration in the exposure area.

A bootstrapping procedure will be used to provide a 95% upper confidence limit (UCL) point estimate of the spatially weighted average concentration in each exposure area. The use of bootstrapping techniques for representing confidence intervals is well-established. USEPA has supported several technical papers describing the use of bootstrapping techniques as a robust means to estimate upper confidence limit mean concentrations in environmental data sets (Singh et al., 1997; USEPA, 2002). The paradigm for the spatial bootstrap technique is to capture the spatial representativeness of each sampling location as the frequency of occurrence of the data in an expanded dataset, which is then sampled using bootstrap methods.

Bootstrap sampling (with replacement[1]) will be performed on the dataset to generate a "sample" of concentrations from the dataset, with the size of the sample equal to the number of data points in the dataset. The area-weighted mean of the data points in the sample will be computed and stored. A total of 1000 bootstrap samples will be extracted from the expanded dataset, resulting in a distribution of 1000 mean concentrations. Quantiles of the distribution of sample means will be computed, and the 95th percentile of the cumulative distribution of sample means will be identified.

The process of generating 1000 sample means and identifying the 95th percentile of the distribution of sample means will be performed a total of four times. The mean of the 95th percentile values from the four distributions of sample means will be estimated and selected as the EPC.

3.1.2 EPCs For Sediments

Nine 0 to 0.5 foot sediment samples and two 0.5 to 2 foot samples are available for sediments. Only the nine surface sediment samples will be used to develop EPCs for sediment because receptors are not expected to contact sediments deeper than 6 inches. EPCs for sediments will be developed using the same geostatistical approach employed for surface soils, except that the area represented by a particular sediment sample will correspond to a specific length of the drainage ditch.

3.2 Exposure Areas

Three exposure areas were identified at the Site corresponding to the potential for different intensities of contact by the receptors to be included in the HHRA. Each exposure area is discussed below, along with the activities assumed to take place in each area and the relevant environmental media in each area. An overview of the exposure areas at the Site is shown in Figure 2.

3.2.1 Process Area

The process area consists of the area currently used for chromated copper arsenate (CCA) treatment and the adjacent treated pole storage area. Relevant exposure media sampled in this area include surface and subsurface soil. The HHRA will assume that on-Site workers are present in this area and may be exposed to surface soils. Also, teenagers living in the area could trespass on the site and be exposed to COPCs in process area surface soils. Utility workers may be exposed to COPC in process area surface and subsurface soils while doing maintenance on the utility lines at the Site. Construction workers may contact surface and subsurface soils in the process if and when construction activities occur in that area.

[1] Sampling with replacement refers to the iterative practice of randomly selecting a value from the expanded dataset, storing that value for future use, and "replacing" that value back into the expanded dataset so that the expanded dataset retains the same number of data points following each iteration. Alternatively, sampling without replacement would entail randomly selecting a value from the expanded dataset, storing that value for future use, and randomly selecting another value from the expanded dataset, which then has one fewer data point available for selection after each successive iteration.

3.2.2 Non-Process Area

The non-process area consists of the area of the site outside of the process area and within the Site property boundaries, excluding the stormwater ditch. Relevant exposure media sampled in this area include surface soil and subsurface soil. Non process area surface and subsurface soils will be assumed to be contacted by the same types of receptors as described above for process area soils.

3.2.3 Drainage Ditch

The drainage ditch will be considered a unique exposure area because exposure intensity to COPCs in sediments is expected to be different from soils. The sediment exposure area consists of the drainage ditch that runs from the southeast corner to the northwest corner of the Site. The HHRA will assume that on-Site KI NPA workers as well as teenager trespassers may contact COPCs in sediments.

3.3 Receptors

Based on activities assumed to occur at the Site and the variable potential for contact with relevant environmental media in each of the exposure areas, four potential receptors have been identified: on-Site KI workers (with different surface areas exposed in the PA and NPA based upon clothing and personal protective equipment requirements KI has for its workers); trespassers; utility workers; and, construction workers.

Potential ingestion of and dermal contact with COPCs in surface soils and sediments are assumed to be potentially complete exposure pathways for KI workers and trespassers. Additionally, inhalation of dust containing surface soil-derived COPCs by KI workers and trespassers is assumed to be a potentially complete exposure pathway. Potentially complete exposure pathways for the construction and utility worker include ingestion of, dermal contact with, and inhalation of COPCs in surface and subsurface soils.

Conservative point estimate exposure assumptions will be used to construct a deterministic, conservative and preliminary assessment of potential exposure for each receptor. Body weights, ingestion rates of soil and sediment, and inhalation rates for various age classes will be taken from USEPA (1997a). Skin surface areas and soil adherence data for various body parts (for various age classes) will be taken from USEPA (1997a). Weighted soil and sediment adherence factors will be estimated using skin surface area adherence data for various body parts. Body part-specific skin surface areas and adherence factors will be area weighted and are shown in Table 1.

All potential receptors and the exposure assumptions for each complete exposure pathway are discussed below.

3.3.1 On-Site KI Workers

Based on information from KI, conservative exposure assumptions will be selected to be consistent with KI worker activities and practices at the Site. KI workers will be assumed

to be present in both the process and non-process areas. KI workers will be assumed to have a body weight of 71.5 kg, the average of male and female adult bodyweights assuming an equal proportion of male and female workers. KI workers will be assumed to have an exposure frequency of 235 days per year to surface soils for an exposure duration of 25 years. (Note that the exposure assumptions described in this section apply only to the preliminary deterministic assessment of potential risk and not the refined MEE analysis which will employ distributions for exposure parameters, as described below). Because the drainage ditch is in the NPA, only KI workers in the NPA will be assumed to potentially contact sediments at a frequency of one time a year.

KI workers in the process area will be assumed to have 508 cm^2 of potentially exposed skin on their face and wrists and a surface area weighted soil adherence factor of 0.086 mg/cm^2. KI workers in the non-process area will be assumed to have 2,478 cm^2 of potentially exposed skin on their face, forearms, and hands and a surface area weighted soil adherence factor of 0.19 mg/cm^2. The differences in skin surface area exposed between the PA and NPA workers results from differing clothing and personal protective equipment requirements KI has for its workers in the two different areas. All KI workers will be assumed to have a soil ingestion rate of 50 mg/day and an inhalation rate of 1.5 m^3/hour for 8 hours a day. Absent Site-specific data, the resipirable particulate matter (RPM) concentration will be assumed to be 0.019 mg/m^3. On days that KI workers are on-Site, all of their potential ingestion and dermal exposure to soil is conservatively assumed to be comprised of on-Site soils (i.e., their fraction ingested (FI) is assumed to be 1.0). KI workers are not expected to contact subsurface soil nor are they assumed to inhale sediments. Table 1 summarizes KI worker exposure assumptions for the process and non-process areas.

3.3.2 Trespassers

Although the Site has measures in place to prevent unauthorized access to the property, the HHRA will assume there is some potential for unauthorized individuals (i.e., trespassers) to gain access to the property. Trespassers will be assumed to be teenagers aged 7-17 (with a corresponding exposure duration of ten years) with the potential to trespass on both the process and non process areas. Given the relative size of the exposure areas and wood treating-related activities occurring within them, trespassers will be assumed to potentially contact surface soils in the process area once every three months and to contact surface soils in the non-process area once a month. Trespassers will also be assumed to contact sediments in the NPA once a month. Trespassers will be assumed to have a body weight of 45 kg; 5,048 cm^2 skin exposed to soil (corresponding to the face, forearms, hands, lower legs, and feet) and a soil adherence rate of 0.145 mg/cm^2. Trespassers will also be assumed to inadvertently ingest soil at a rate of 100 mg/day. On days that trespassers are on-Site, one quarter (25%) of their potential ingestion and dermal exposure to soil (or sediment) is assumed to be form the Site (i.e., their FI is assumed to be 0.25). Trespassers will be assumed to have exposure to dust at an inhalation rate of 1.6 m^3/hour for 2 hours a day. Trespassers are not expected to contact subsurface soil nor inhale sediments. Table 1 summarizes the trespasser's exposure assumptions for the process and non-process areas.

3.3.3 Utility Workers

Utility workers may be exposed to soil on the Site while maintaining utility lines. In this event, soil excavation may occur, and utility workers may be exposed to COPCs in subsurface soil (0-6 foot depth interval). This scenario will assume that a utility worker is an adult with a body weight of 71.8 kg who may contact subsurface soil 5 days a year over the course of 25 years. The utility worker will be assumed to have a soil ingestion rate of 330 mg/day and to have 2,478 cm^2 skin (corresponding to face, forearms, and hands) exposed to soil. The soil adherence factor for the utility worker will be 0.24 mg/cm^2. On days that utility workers are on-Site, all of their potential ingestion and dermal exposure to soil is assumed to be comprised of on-Site soils (i.e., their FI is assumed to be 1.0). The inhalation rate for the utility worker will be assumed to be 2.5 m^3/hour for 8 hours a day. Table 1 summarizes the utility worker's exposure assumptions.

3.3.4 Construction Workers

The HHRA will assume that construction workers may be exposed to COPCs in subsurface soil (0-6 foot depth interval) while engaged in construction. The HHRA will assume that a construction worker is an adult with a body weight of 71.8 kg, who may contact subsurface soil for the duration of the construction job (130 days over the course of 1 year). The construction worker will be assumed to have a soil ingestion rate of 118 mg/day and to have 2,478 cm^2 skin (corresponding to face, forearms, and hands) exposed to soil. The soil adherence factor for the construction worker will be assumed to be 0.14 mg/cm^2. On days that construction workers are on-Site, all of their potential ingestion and dermal exposure to soil is assumed to be comprised of on-Site soils (i.e., their FI is assumed to be 1.0). The inhalation rate for the construction worker will be assumed to be 2.5 m^3/hour for 8 hours a day. Table 1 summarizes the construction worker's exposure assumptions.

3.4 Constituent-Specific Exposure Parameters

In this section Relative Absorption Factors (RAFs) necessary for properly estimating the absorbed dose of a COPC, are described.

3.4.1 Relative Absorption Factors

Relative Absorption Factors (RAFs) will be included in the estimation of dose to account for differences in COPC absorption efficiency when comparing the experimental conditions experienced by a test animal in a laboratory to the natural conditions experienced by a human at the Site (USEPA, 1989). For example, the study that served as the basis for the development of a RfD or CSF may have administered the constituent to the laboratory animal in a matrix very different from the environmental media to which humans are exposed at the site. Physiological differences between laboratory animals and humans must also be accounted for as these may influence the uptake of a constituent from an exposure matrix or medium. Therefore, it is not always appropriate to directly apply a dose-response value to the human potential dose. In many cases, a correction factor in the estimation of potential risk is needed to account for differences

between absorption in the dose-response study and absorption likely to occur upon human exposure to a constituent at a site. Without such a correction potential human health risk could be over- or under-estimated. RAFs are necessary to estimate oral, dermal, and inhalation exposure doses from any of the environmental media to which humans can be exposed at the site (soil or sediment).

The RAF is the ratio between the estimated human absorption factor for the specific medium and route of exposure, and the known or estimated absorption factor for the laboratory study from which the dose-response value was derived.

$$RAF = \frac{\textit{Fraction absorbed in humans in environmental exposure}}{\textit{Fraction absorbed in the dose} - \textit{response study}}$$

The use of an RAF allows the risk assessor to make appropriate adjustments if the efficiency of absorption between environmental exposure and experimental exposure is known or expected to differ because of physiological effects and/or matrix or vehicle effects.

RAFs can be less than one or greater than one, depending on the COPC and potential routes of exposure at a site. If the RfD or CSF is based on an administered dose, then the RAF is calculated as the ratio of the estimated absorption for the site-specific medium and route of potential exposure, to the known or estimated absorption for the laboratory study from which the RfD or CSF was derived (e.g., if the two are the same, then the RAF is 1.0). If the RfD or CSF is based on an absorbed or metabolized dose, then the known or estimated absorption or metabolism in humans is used for the RAF. In the absence of detailed toxicological information on a constituent of interest, a default value of 1.0 is used. The extent of absorption or metabolism may depend on the medium and route of exposure.

In addition, within the chronic risk characterization analysis many constituents are assessed separately for their potential carcinogenic risk and their potential non-carcinogenic risk. If the experimental studies from which the cancer slope factor and the reference dose are derived are known or estimated to have the same absorption efficiency, then the RAFs used to estimate potential carcinogenic and non-carcinogenic doses are identical for a given route/medium situation. If, however, the absorption efficiencies differ, then there are two sets of RAFs, one for use with the cancer slope factor and one for use with the reference dose.

AMEC has summarized the route of exposure and the experimental matrix (diet, drinking water, corn oil gavage, etc.) used in the experimental study from which the relevant dose-response value was derived for many constituents. In addition, AMEC has reviewed scientific literature on the absorption and bioavailability of many constituents for the relevant routes of exposure and matrices. Based on these data, AMEC has summarized and derived scientifically defensible RAFs for many constituents. These RAFs will be presented in the HHRA and used to estimate potential exposures and risks.

3.5 Proposed MEE Distributions for KI Workers

Table 2 summarizes the key percentiles of the distributions that will be used for the MEE model. Table 3 summarizes the functions that were used to derive the distributions (where appropriate). Additional details concerning the MEE distributions are presented below by parameter.

3.5.1 Parameters Evaluated as Uncertainty

In the first phase of MEE evaluation, four parameters will be evaluated as part of the uncertainty in the MEE model: Oral RAF, Dermal RAF, Inhalation RAF, and Dermal Adherence Factors. The relative absorption factors are COPC-specific (not presented in this document because COPCs have not yet been identified), while the dermal adherence factors are specific to worker types.

3.5.1.1 Dermal Adherence Factors

Separate distributions for dermal adherence factors are required the NPA and PA workers, because the exposed skin surface area differs between the two workers. Based upon typical worker practices, the NPA worker is assumed to have the face, forearms and hands exposed. The distribution for the forearms, based on @RISK's (@RISK, version 4.5, Palisade Corporation, Ithaca, New York) distribution fitting function, is defined as beta general with a minimum of 0.0021 mg/cm^2, maximum of 0.36983 mg/cm^2, α1 of 0.40624 and α2 of 2.0055, truncated at 0 mg/cm^2. Similarly, based on @RISK distribution fitting function, the distribution for the face is defined as logistic with an α of 0.027197, and β of 0.018828, truncated at 0 mg/cm^2. For the hands, the distribution is also defined as logistic with an α of 0.178786 and a β of 0.074457, truncated at 0 mg/cm^2. The input values for the distribution fittings are from the Exposure Factors Handbook (USEPA, 1997) for all adult exposure scenarios in soil.

Based upon typical worker practices and KI requirements (long sleeves and gloves), the PA worker is assumed to have only the wrists and face exposed. These distributions are defined in the same manner as those generated for the forearms and face for the NPA worker.

The distribution of dermal adherence factors that will be used in the MEE analysis represents weighted adherence factors based on exposed skin surface area. For the NPA worker, the mean surface areas for the forearms, face and hands are 1145, 346 and 844 cm^2, respectively (USEPA, 1997) with a total surface area of 2,335 cm^2. This results in weighting factors of 0.36, 0.49 and 0.15 for the hands, forearms and face, respectively. For the PA worker, the mean surface areas for the wrists and face are 100 and 346 cm^2, respectively (USEPA, 1997) with a total surface area of 446 cm^2. Weighting factors are 0.22 and 0.78 for the wrists and face, respectively. These weighting factors are comparable to those used in the *Technical Report for the Development of Cleanup Target Levels* (FLDEP, 2005). The input distributions for dermal adherence for both the NPA and PA workers are derived by applying the weighting factors to their respective body part distributions and then summing across those weighted distributions. The key percentiles for these distributions are presented in Table 2.

3.5.2 Parameters Evaluated as Variability

The remaining parameters will be evaluated as part of the variability in the MEE model. Depending upon the evaluated parameter, these distributions may be COPC-specific, worker type-specific, or gender-specific.

3.5.2.1 Exposure Point Concentrations

Exposure point concentrations will be represented by the distribution of spatially weighted 0-2' depth weighted average surface soil concentrations within each exposure area, as discussed in Section 3.1. The percentile values from the distribution of spatially-weighted mean values generated by the bootstrap will be used as inputs to the exposure calculations.

3.5.2.2 Job Tenures (Exposure Durations)

Site-specific data related to job tenures (equivalent to exposure durations) for site workers are not available. Therefore, alternate sources of inputs will be evaluated. Although the *Exposure Factors Handbook* (USEPA, 1997) includes distributions for all workers, it was concluded that job-specific information should be used to the extent possible. Burmaster (2000) evaluated job tenures for different types of job classifications based on 1996 Census Bureau data. Included in his compilation are values for the "Lumber and Wood Products Industrial Category (Industrial Index: 2.12311)" which appear to best match the current site activities. Census data are available for different intervals of employment (e.g., 3 to 4 years, 20 to 24 years) and the numbers of male or female workers that fall within each employment interval are reported [see Tables III and IV of Burmaster (2000)]. Based on this information a cumulative frequency distribution can be developed using the @RISK CUMUL function (2,000 iterations) that represents the gender-specific job tenures. The key percentiles are presented in Table 2 and the @RISK distribution function is shown in Table 3. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.3 Exposure Time

Exposure Time (worker hours per day) is used for the inhalation pathway. A typical work day is eight hours. A triangular distribution is fit assuming 10 hours as the maximum value, 6 hours as the minimum value, and 8 hours as the most likely value. The same distribution will be used for both the NPA and PA Workers. The key percentiles are presented in Table 2 and the distribution function is shown in Table 3. These assumptions can be updated if values by worker types are available. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.4 Exposure Frequency

Exposure Frequencies (days per year) are used for all three exposure pathways. A default value of 235 days/year has been used in previous risk assessments. The distribution for the MEE model is based on a triangular distribution, setting 235 days as the most likely exposure frequency, and 225 days as the minimum and 240 days as the maximum. The latter two values are selected based upon professional judgment and represent two work weeks less than most likely value and one additional work week than

the most likely value. The same distribution will be used for both the NPA and PA Workers. The key percentiles are presented in Table 2 and the distribution function is shown in Table 3. These assumptions can be updated if values by worker types are available. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.5 Body Weights

Body weights (Kg) are used for all three exposure pathways. Body weight distributions will be developed for males only, females only and for both genders combined (assuming an equal proportion of males and females). These will be based on values reported in the *Exposure Factors Handbook* [see Tables 7-4 and 7-5 of USEPA (1997)], body weights for "all races" and age category "18-74" years for each gender. Combined body weights represent the average of the male and female body weights provided in Tables 7-4 and 7-5. The same distribution will be used for both the NPA and PA Workers. The key percentiles are presented in Table 2 and the @RISK distribution function is shown in Table 3. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.6 Soil Ingestion Rates

The *Exposure Factors Handbook* (USEPA, 1997) provides adult soil ingestion rates, ranging from 0.5 to 100 mg/day, based primarily on a 1990 study conducted by Calabrese et al. (1990). A more recent study of adults by the same investigators (Stanek et al., 1997) includes a number of improvements over the 1990 study and provides more reliable daily estimates of soil ingestion. However, the 1997 study was not without complications. Of the ten adults participating in the study, one had an unusually high soil ingestion estimate (2 grams) for the first day of the study week. The high estimate resulted in an inflated upper percentile estimate of the overall ingestion rates. In fact, Stanek et al. (1997) stated that "the 95th percentile soil ingestion estimate was 331 mg/day, but based on present data, it is substantially uncertain" because of the results from this one subject.

Further, Dr. Calabrese (a co-author of the Stanek et al. paper) reported that the subject had four times higher freeze-dried fecal weight on the first day than on any other day of the study, suggesting that the subject's excretion on that first day reflected a multi-day accumulation, instead of just one day, as assumed in the calculations. This fact confirms that the 95th percentile value from this study, which is driven by the result for this one subject, is not only uncertain by substantially overestimated. Due to the aberrant result from on participant, Dr. Calabrese (2003) has recommended that the upper 75th percentile (49 mg/day, rounded to 50 mg/day) from the Stanek et al. (1997) study is the most appropriate value to use as an estimate of high-end soil ingestion by adults. In addition, Calabrese (2003) recommended 10 mg/day for the central tendency estimate, which is consistent with the adult mean daily soil ingestion rate of 6 mg/day reported in Stanek et al. (1997).

Based on the Stanek et al. (1997) study and the recommendations by Dr. Calabrese (2003), a triangular distribution, defined by a minimum value of 0.5, most likely value of 10 and a maximum value of 50 mg/day will be used in the MEE analysis. The same distribution will be used for both the NPA and PA Workers. The key percentiles are

presented in Table 2 and the distribution function is shown in Table 3. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.7 Skin Surface Areas

Skin surface areas (SSA) are evaluated for the dermal exposure pathway and are worker-specific. SSA varies with body weight, and this relationship is represented by the following equation (FDEP, 2005):

Total body surface area (cm^2) = 1025 x body weight (kg) ^ 0.6821 [Eq. 1]

As discussed above, only a portion of the total body surface area is assumed to be exposed (i.e., hands, forearms and face for the NPA worker, and wrists and face for the PA worker). The following approach determines the surface area of each of these body parts.

$$\text{Surface area}_{\text{body part}} = (\text{percentage body part}) \times (\text{total surface area})$$

FDEP (2005) provides the percentage surface area for a number of body parts in relation to total body surface area. For forearms and hands, the percentages are 6.46% and 4.98%, respectively. Values for wrists and face are not provided. Based on the point estimates for surface area of the forearms (1145 cm^2) and surface area of wrists (100 cm^2), 8.73% of the forearm surface area is represented by the wrists (100/1145). When this percentage is applied to the surface area percentage for forearms (8.73%*6.46%), the resulting value (0.56%) represents the percentage surface area for wrists in relation to total body surface area. Based on the point-estimate surface area of the face (346 cm^2) and the surface area of the head (1279 cm^2 – average of head surface area for workers, ages 18-65, FDEP, 2005), 27.05% of the head surface area is represented by the face (346/1279). When this percentage is applied to the surface area percentage for head (27.05%*6.64%), the resulting value (1.8%) represents the percentage surface area for the face in relation to the total body surface area.

To determine exposed surface area, the MEE analysis will first select a body weight, then based on this body weight, will calculate total body surface area using Eq. 1, apply the appropriate body part percentages based on the worker evaluated, and then combine the body part surface areas for the dose calculations. The combined dermal adherence (described in the Section 2.1.4) will also be applied in calculating dose.

Although dynamically calculated within the model, the approximate values for the key percentiles are presented in Table 2 and the distribution function is shown in Table 3. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.8 Respirable Particulate Matter

Respirable Particulate Matter (RPM) is evaluated for the inhalation pathway. A default RPM value of 0.019 mg/m^3 will be used here unless appropriate Site-specific data are available. In the absence of Site-specific data, the MEE model will use the distribution of measured RPM values (as PM_{10}) measured at the Newberry Water Tower, Alachua County (AIRS ID # Y001-0026) from July 26, 2007 to February 4, 2008.

The RPM values are obtained on-line[2]. The distribution of measured RPM values is the actual percentiles of the data set over the evaluated period. The default value of 0.019 mg/m^3 is slightly above the 95th percentile of the measured values. The key percentiles are presented in Table 2 and the distribution function is shown in Table 3. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.5.2.9 Inhalation Rates

The inhalation rates are a key parameter to the inhalation pathway. Site-specific data activity patterns are not available for the NPA or PA Workers. Therefore, the distribution is based on *Exposure Factors Handbook* (Table 5-23; USEPA, 1997) that reports the hourly average rate for outdoor workers of 1.3 m^3/hour. A triangular distribution is fit assuming 2.0 m^3/hour as the maximum value, 0.6 m^3/hour as the minimum value, and 1.3 m^3/hour as the most likely value. The same distribution will be used for both the NPA and PA Workers. The key percentiles are presented in Table 2 and the distribution function is shown in Table 3. These assumptions can be updated if activity-specific values by worker types are available. Supporting calculations will be provided as part of the MEE Risk Assessment Report.

3.6 Average Daily Doses

This section describes the methods and inputs used to estimate average daily doses for non-carcinogenic and carcinogenic COPCs.

3.6.1 Non-Carcinogenic COPCs

The Average Daily Dose (ADD) is an estimate of a receptor's potential daily intake from oral, dermal and inhalation exposure to constituents with potential non-carcinogenic effects. ”Average Daily Dose” is a term-of-art used in risk assessment and does not represent a true average because the assumptions used to derive it do not represent “averages”. According to USEPA (1989), the ADD should be calculated by averaging over the period of time for which the receptor is assumed to be exposed (averaging time = exposure duration for potential non-carcinogenic risk). The ADD for each constituent via each route of exposure will be compared to the RfD for that constituent to estimate the potential hazard quotient due to exposure to that constituent via that route of exposure. If the exposure duration is less than 10% of a person’s lifetime the ADD represents a subchronic exposure and if it is greater than 10% it is assumed to represent a chronic exposure.

3.6.2 Carcinogenic COPCs

For constituents with potential carcinogenic effects, the Lifetime Average Daily Dose (LADD) is an estimate of potential daily intake over the course of a lifetime. In accordance with USEPA (1989), the LADD is calculated by averaging the assumed exposure over the receptor's entire lifetime (assumed to be 75 years). The LADD for each constituent via each route of exposure will be combined with the cancer slope

[2] The URL for the RPM data is the following:
http://www.dep.state.fl.us/air/flaqs/SiteDetail.asp?SiteID=120010026&RequestYear=

factor for that constituent in order to estimate the incremental lifetime cancer risk due to exposure to that constituent via that route of exposure.

3.6.3 Average Daily Dose Formulas

The formulas for estimating a receptor's potential average daily dose (lifetime and average daily, either subchronic or chronic) are presented in the following sections.

Ingestion of soil or sediment

$$\text{ADD (or LADD)} = \frac{EPC \times IR_s \times RAF \times FI \times EF \times ED \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (chronic, subchronic, or lifetime) (mg/kg-day)
EPC	=	Exposure point concentration (mg/kg)
IR_s	=	Ingestion rate (mg/day)
RAF	=	Oral-soil/sediment relative absorption factor (unitless)
FI	=	Fraction from the Site
EF	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
CF	=	Units conversion factor (10^{-6} kg/mg)
BW	=	Body weight (kg)
AT	=	Averaging time (d)

Dermal contact with soil or sediment

$$\text{ADD (or LADD)} = \frac{EPC \times SA \times AF \times RAF \text{ x } FI \times EF \times ED \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (chronic, subchronic, or lifetime) (mg/kg-day)
EPC	=	Exposure point concentration (mg/kg)
SA	=	Exposed skin surface area (cm^2)
AF	=	Soil/sediment adherence factor (mg/cm^2)
RAF	=	Dermal-soil/sediment relative absorption factor (unitless)
FI	=	Fraction from the Site
EF	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
CF	=	Units conversion factor (10^{-6} kg/mg)
BW	=	Body weight (kg)
AT	=	Averaging time (d)

Inhalation of Dust

$$\text{ADD (or LADD)} = \frac{EPC \times IR \times RPM \times RAF \times ET \times EF \times ED \times CF}{BW \times AT}$$

where:

ADD	=	Average daily dose (chronic, subchronic or lifetime) (mg/kg-day)
EPC	=	Exposure point concentration (mg/kg)
IR	=	Inhalation rate (m^3/hr)
RAF	=	Inhalation-soil/sediment relative absorption factor (unitless)
ET	=	Exposure time (hr/d)
EF	=	Exposure frequency (d/yr)
ED	=	Exposure duration (yr)
CF	=	Units conversion factor (10^{-6} kg/mg)
RPM	=	Respirable particulate concentration in air (mg/m3)
BW	=	Body weight (kg)
AT	=	Averaging time (d)

4.0 TOXICITY ASSESSMENT

The Toxicity Assessment step of the HHRA involves quantifying the relationship between the magnitude of potential exposure via a particular exposure pathway and the likelihood of an adverse health effect. Adverse health effects are characterized by USEPA as carcinogenic or non-carcinogenic. Non-carcinogenic effects are further divided into subchronic (for potential exposures lasting less that 10% of a lifetime) and chronic (for potential exposures lasting more than 10% of a lifetime). Dose-response relationships are defined by USEPA for oral and inhalation routes of exposure. The results of the Toxicity Assessment, when combined with the dose estimated in the Exposure Assessment, will be used to estimate potential health risks.

Toxicity values are developed by USEPA, state regulatory agencies and other entities after a comprehensive scientific review of all available toxicological literature and dose-response information for a constituent. The toxicity values used in the preliminary deterministic conservative risk assessment and initial phase of the MEE analysis will be obtained from the following sources, in order of priority:

- USEPA's Integrated Risk Information System (IRIS) (USEPA, 2008a); and
- USEPA Region 4 Human Health Medium-Specific Screening Levels, 2008 (USEPA, 2008b).

If after completion of the first phase of the MEE modeling, some receptors still have potential risks above allowable benchmarks, a second phase of MEE modeling may be undertaken. The second phase will not only use distributions for exposure parameters, but will also employ distributions for toxicity parameters in order to develop as realistic estimates of potential risk as possible. In addition to employing distributions of toxicity parameters, the second phase of MEE modeling may also employ alternative toxicity parameters available in the peer-reviewed literature. Alternative toxicity factors are not summarized in this report because the COPCs for which such factors might be required have not yet been formally identified.

5.0 RISK CHARACTERIZATION

The Risk Characterization step of the HHRA combines the results of the Exposure Assessment and the Toxicity Assessment to provide a quantitative estimate of the potential for carcinogenic and non-carcinogenic human health effects due to chronic and/or subchronic exposure.

5.1 Non-carcinogenic Risks

Potential non-carcinogenic health risks due to exposure to a COPC will be estimated by calculating the Hazard Quotient (HQ), which is the ratio between a COPC's Average Daily Dose calculated in the Exposure Assessment and its Reference Dose identified in the Toxicity Assessment:

$$HQ = \frac{ADD}{RfD}$$

where:

HQ = Hazard quotient (unitless);
ADD = Average daily dose (mg/kg-day), this can be either for a chronic or subchronic exposure duration; and,
RfD = Reference dose (mg/kg-day)..

If the Hazard Quotient for a given constituent and pathway does not exceed one, then the Reference Dose has not been exceeded, and no adverse non-carcinogenic health effects are expected to occur as a result of exposure to that constituent via that pathway. The HQs for each constituent are summed to yield the Hazard Index (HI) for that pathway. A Total HI for each receptor is then calculated by summing the pathway-specific HIs. If the Total HI does not exceed one, then no adverse non-carcinogenic health effects are expected to occur as a result of that receptor's potential exposure to that constituent. If the HI exceeds one, then the critical endpoint affected by each constituent is determined. Then the HQs for constituents affecting common endpoints are summed to derive endpoint-specific HIs. If all endpoint-specific His are less than one, then no adverse non-carcinogenic health effects are expected as a result of that receptor's potential exposure to those constituents.

5.2 Potentially Carcinogenic COPCs

Potential cancer health risks due to exposure to carcinogens at the site will be estimated by calculating the Excess Lifetime Cancer Risk (ELCR), which is a function of a COPC's Lifetime Average Daily Dose calculated in the Exposure Assessment, and the Cancer Slope Factor identified in the Toxicity Assessment:

$$ELCR = 1 - e^{-LADD \times CSF}$$

where:

ELCR = Excess Lifetime Cancer Risk (unitless);
LADD = Lifetime Average Daily Dose (mg/kg-day).
CSF = Cancer Slope Factor ((mg/kg-day)$^{-1}$); and

ELCRs will be calculated for each pathway for each potentially carcinogenic constituent. The ELCRs for each constituent are summed to yield a pathway-specific ELCR, and then a total ELCR for each receptor will be calculated by summing the pathway-specific ELCRs. If the total ELCR does not exceed 1 X 10^{-6} (1 in 1,000,000), then the cancer risks at the Site are considered to be acceptable. The estimated potential ELCRs due to site-related COPCs is an indication of the potential cancer risks an individual may experience *over and above* the background cancer risk from all sources over the duration of a lifetime. In other words, given that the baseline lifetime prevalence of cancer in the US is approximately 3.5 in 10 (based on cancer prevalence data from the National Cancer Institute [NCI, 2007] and population statistics from the United States Census Bureau [Census Bureau, 2007]), the 10^{-6} risk threshold represents a lifetime risk of cancer increase from 0.350000 to 0.350001 due to potential exposures to COPCs at the Site.

6.0 REFERENCES

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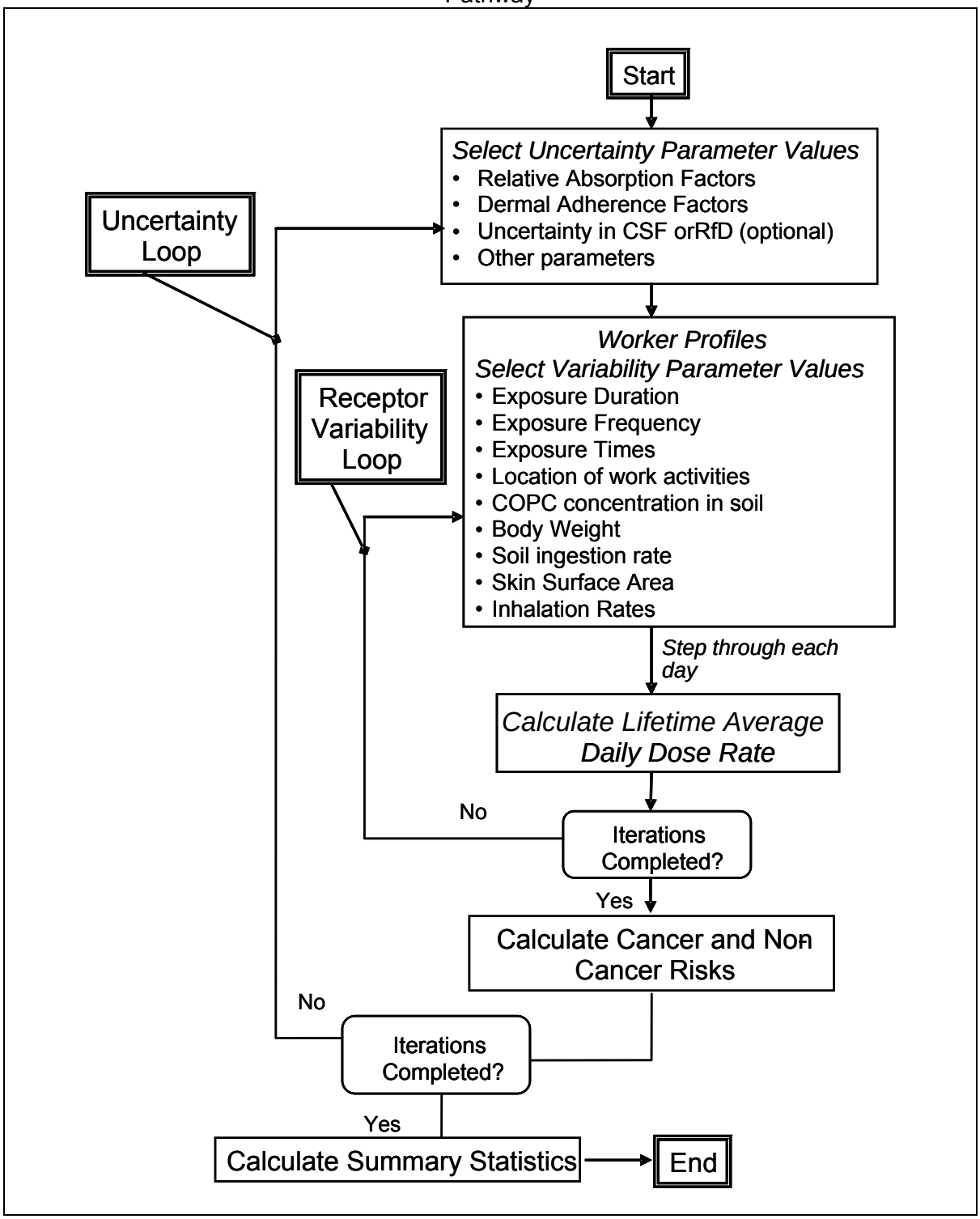
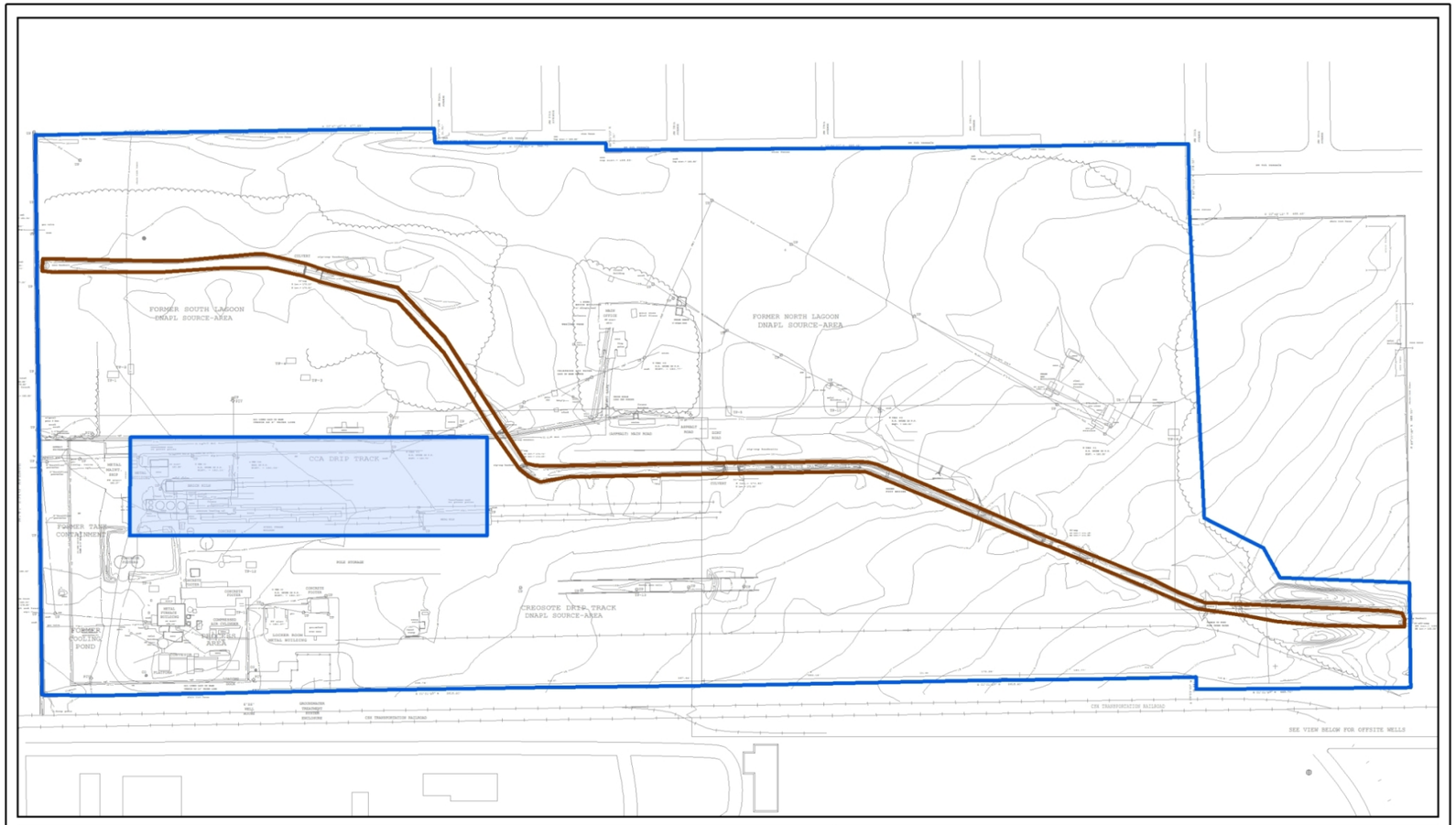
Figures

Figure 1. Model Logic for Microexposure Event Model for KI Worker Soil Exposure Pathway





LEGEND	TITLE	LOCATION MAP	NOTES & SOURCES
Sediment Exposure Area Non Process Area Process Area Site Background Feature	**Figure 2** **Site Exposure Areas** Beazer East, Inc. Koppers Inc. Facility Gainesville, Florida		CAD Source: GeoTrans, Inc. N 0 250 Feet AMEC Earth & Environmental, Inc. Westford, Massachusetts H:\Beazer\Gainsville\Task16\MXD\SiteExposure.mxd H:\Beazer\Gainsville\Task16\Export\SiteExposure.pdf June 9, 2008 DWN: AP CHKD: BJB

Tables

Table 1
Exposure Assumptions
Koppers Wood-Treating Facility
Gainesville, Florida

		On-Site Worker in the Non-Process Area		On-Site Worker in the Process Area		Trespasser in the Non-Process Area	
Parameter Definition	***Units***	***Value***	***Rationale/ Reference***	***Value***	***Rationale/ Reference***	***Value***	***Rationale/ Reference***
GENERAL INFO:							
Age	years	18-65		18-65		7-17	
Bodyweight	kg	71.5	EPA (1997) - mean of men and women age 18<75	71.5	EPA (1997) - mean of men and women age 18<75	45	EPA (2000)
Averaging Time	days	27,375	75 years lifetime	27,.75	75 years lifetime	27,375	75 years lifetime
Fraction of exposure from Site	unitless	1	All soil exposure assumed to come from site.	1	All soil exposure assumed to come from site.	0.25	Professonal judgement.
INGESTION OF SOIL:*							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	50	EPA (1997)	50	EPA (1997)	100	EPA (1997)
Exposure Frequency	days/year	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	12	One time per month
Exposure Duration	years	25	EPA (1989); Beazer/KI agreement	25	EPA (1989); Beazer/KI agreement	10	EPA (2000)
DERMAL ABSORPTION OF SOIL:*							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm^2	0.19	EPA (2001a). Mean of values for forearms, hands, and face of Utility Workers and Construction Workers.	0.086	EPA (2001a). Mean of values for forearms and face of Utility Workers and Construction Workers.	0.145	EPA (2001a). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.
Skin Surface Area Available for Contact	cm^2/day	2,478	Approximate area of forearms, hands, and face (EPA 1997); Beazer/KI agreement	502	Approximate area of wrists and face (EPA 1997); Beazer/KI agreement	5,048	EPA (2001a). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range
Exposure Frequency	days/year	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	12	One time per month
Exposure Duration	years	25	EPA (1989); Beazer/KI agreement	25	EPA (1989); Beazer/KI agreement	10	EPA (2000)
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m^3	0.019	FL Division of Air Resources Management (2005). Gainesville annual average	0.019	FL Division of Air Resources Management (2005). Gainesville annual average	0.019	FL Division of Air Resources Management (2005). Gainesville annual average
Inhalation Rate	$m^3/hour$	1.5	EPA (1997)	1.5	EPA (1997)	1.6	EPA (1997)
Exposure Frequency	days/year	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	235	5 days/week, 47 weeks/year, accounting for 2 weeks of vacation, ten holidays, and five sick days per year; Beazer/KI agreement	12	One time per month
Exposure Duration	years	25	EPA (1989); Beazer/KI agreement	25	EPA (1989); Beazer/KI agreement	10	EPA (2000)
Exposure Time	hours/day	8	Standard work day.	8	Standard work day.	2	Professonal judgement.

Table 1 cont.

		Trespasser in the Process Area		Construction Worker		Utility Worker	
Parameter Definition	***Units***	***Value***	***Rationale/ Reference***	***Value***	***Rationale/ Reference***	***Value***	***Rationale/ Reference***
GENERAL INFO:							
Age	years	7-17		18-65		18-65	
Bodyweight	kg	45	EPA (2000)	71.5	EPA (1997) - mean of men and women age 18<75	71.5	EPA (1997) - mean of men and women age 18<75
Averaging Time	days	27,375	75 years lifetime	27,375	75 years lifetime	27	75 years lifetime
Fraction of exposure from Site	unitless	0.25	Professonal judgement.	1	All soil exposure assumed to come from site.	1	All soil exposure assumed to come from site.
INGESTION OF SOIL:*							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Ingestion Rate	mg/day	100	EPA (1997)	118	Ten days of exposure at 330 mg/day (EPA, 2001b) and 120 days of exposure at 100 mg/day	330	EPA (2001)
Exposure Frequency	days/year	4	One time every three months	130	5 days/week, 26 weeks/year	5	Utility repair assumed to require five days
Exposure Duration	years	10	EPA (2000)	1	Professional judgement	25	EPA (1989)
DERMAL ABSORPTION OF SOIL:*							
Conversion Factor	kg/mg	1E-06		1E-06		1E-06	
Soil to Skin Adherence Factor	mg/cm^2	0.145	EPA (2001a). Body-part specific age-adjusted values for children playing in wet soil and children playing in dry soil.	0.14	EPA (2001a). Body-part specific value for Construction Workers	0.24	EPA (2001a). Body-part specific value for Utility Workers
Skin Surface Area Available for Contact	cm^2/day	5,048	EPA (2001a). Mean of 50th percentile values for hands, forearms, lower legs, feet, and face for males and females represent age range	2,478	Approximate area of forearms, hands, and face (EPA 1997)	2,478	Approximate area of forearms, hands, and face (EPA 1997)
Exposure Frequency	days/year	4	One time every three months	130	5 days/week, 26 weeks/year	5	Utility repair assumed to require five days
Exposure Duration	years	10	EPA (2000)	1	Professional judgement	25	EPA (1989)
INHALATION OF FUGITIVE DUST AND VAPORS:							
Respirable Particulate Concentration	mg/m^3	0.019	FL Division of Air Resources Management (2005). Gainesville annual average	0.019	FL Division of Air Resources Management (2005). Gainesville annual average	0.019	FL Division of Air Resources Management (2005). Gainesville annual average
Inhalation Rate	$m^3/hour$	1.6	EPA (1997)	2.5	EPA (1997)	2.5	EPA (1997)
Exposure Frequency	days/year	4	One time every three months	130	5 days/week, 26 weeks/year	5	Utility repair assumed to require five days
Exposure Duration	years	10	EPA (2000)	1	Professional judgement	25	EPA (1989)
Exposure Time	hours/day	2	Professonal judgement.	8	Standard work day.	8	Standard work day.

USEPA (1989). Risk Assessment Guidance for Superfund (RAGS). Volume I, Human Health Evaluation Manual (Part A). EPA/540/1-
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* Sediment ingestion and dermal absorption exposure assumptions are identical to the soil ingestion assumptions except that the exposure frequency for NPA workers and trespassers is assumed to be 1 day/year and PA, construction and utility workers are assumed to not be exposed to sediments (e.g., EF=0).

Table 2
Key Percentiles for the Proposed MEE Model to Assess Potential On-Site Worker Risks
Koppers Wood-Treating Facility
Gainesville, Florida

Parameters	Min	5th%	25th%	50th%	75th%	95th%	Max
Uncertainty Parameters							
Dermal Adherence Factors (mg/cm^2)							
NPA Workers	0.0037	0.0317	0.0701	0.1032	0.1412	0.2106	0.3713
PA Workers	0.0007	0.0091	0.0243	0.0404	0.0594	0.0922	0.1868
Variability (Receptor) Parameters							
Job Tenures (Exposure Duration; years)							
Male workers	0.25	0.25	0.51	2.4	10.3	21.9	25.0
Female workers	0.25	0.25	0.29	1.5	7.6	19.2	24.9
Exposure Time (h/day)							
NPA Workers	6.0	6.6	7.4	8.0	8.6	9.4	10.0
PA Workers	6.0	6.6	7.4	8.0	8.6	9.4	10.0
Exposure Frequencies (days/year)							
NPA Workers	225	228	231	234	236	238	240
PA Workers	225	228	231	234	236	238	240
Body Weights							
Male workers	44.0	58.6	68.7	76.9	85.6	102.7	107.0
Female workers	44.0	47.7	55.4	62.4	72.1	93.1	107.0
Both Genders	44.0	53.2	62.1	69.7	78.9	97.9	107.0
Respirable Particulate Matter (mg/m^3)							
Measured Values	0.0036	0.0045	0.0065	0.0085	0.0111	0.0170	0.0284
Inhalation Rates (m^3/h)							
NPA Workers	1.05	1.12	1.27	1.40	1.57	1.81	1.95
PA Workers	1.05	1.12	1.27	1.40	1.57	1.81	1.95
Soil Ingestion Rates (mg/day)							
NPA Workers	0.70	5.3	11.5	18.5	27.7	40.0	49.7
PA Workers	0.70	5.3	11.5	18.5	27.7	40.0	49.7

Table 3
Distributions for the Proposed MEE Model to Assess Potential On-Site Worker Risks Koppers Wood-Treating Facility Gainesville, Florida

Parameters	General Form	Equation used to Derive Distributions	Source	Comment
Uncertainty Parameters				
Dermal Adherence Factors (mg/cm^2)				
NPA Workers	See text	See text	See text	See text
PA Workers	See text	See text	See text	See text
Variability (Receptor) Parameters				
Job Tenures (Exposure Duration; years)				
Male workers	Cumul	RiskCumul(0.25,25,{0.25, 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 8.5, 12.5, 17.5, 22, 25}, {0.148, 0.248, 0.368, 0.506, 0.550, 0.618, 0.632, 0.706, 0.801, 0.893, 0.951, 1.000})	Derived from Burmaster (2000)	Based on Census data for the "Lumber and Wood Products Industrial Category (Industrial Index: 2.12311)"
Female workers	Cumul	RiskCumul(0.25,25,{0.25, 0.5, 1.5, 2.5, 3.5, 4.5, 5.5, 8.5, 12.5, 17.5, 22, 25}, {0.226, 0.387, 0.500, 0.589, 0.621, 0.629, 0.669, 0.782, 0.887, 0.927, 0.984, 1.000})	Derived from Burmaster (2000)	
Exposure Time (h/day)				
NPA Workers	Triangular	RiskLogistic(74.67726,0.57993)	USEPA (1997)	
PA Workers	Triangular	RiskLogistic(74.67726,0.57993)	USEPA (1997)	
Exposure Frequency (d/y)				
NPA Workers	Triangular	RiskTriang(225,235,240)	Professional Judgement	Lower and upper bounds were based upon professional judgment and represent -2 work weeks and +1 work week (respectively) relative to the most likely value.
PA Workers	Triangular	RiskTriang(225,235,240)	Professional Judgement	
Body Weights (Kg)				
Male workers	Cumul	RiskCumul(44,107,{58.6, 62.3, 64.9, 68.7, 76.9, 85.6, 91.3, 95.7, 102.7}, {0.05, 0.1, 0.15, 0.25, 0.5, 0.75, 0.85, 0.9, 0.95})	USEPA (1997)	Used Tables 7-4 and 7-5 of EPA (1997), body weights for "all races" and age category "18-74" years, by gender. For 'both genders' assumed 1:1 ratio of males:females.
Female workers	Cumul	RiskCumul(44,107,{47.7, 50.3, 52.2, 55.4, 62.4, 72.1, 79.2, 84.4, 93.1}, {0.05, 0.1, 0.15, 0.25, 0.5, 0.75, 0.85, 0.9, 0.95})	USEPA (1997)	
Both Genders	Cumul	RiskCumul(44,107,{53.2, 56.3, 58.6, 62.1, 69.7, 78.9, 85.3, 90.1, 97.9}, {0.05, 0.1, 0.15, 0.25, 0.5, 0.75, 0.85, 0.9, 0.95})	USEPA (1997)	
Respirable Particulate Matter (mg/m^3)				
Measured Values	Fitted	NA	On-Line	Actual percentiles of measured values
Inhalation Rates (m^3/h)				
NPA Workers	Triangular	RiskTriang(1.0,1.3,2.0)	USEPA (1997)	Activity-specific values by worker types are not available at this time.
PA Workers	Triangular	RiskTriang(1.0,1.3,2.0)	USEPA (1997)	
Soil Ingestion Rates (mg/day)				
NPA Workers	Triangular	RiskTriang(0.5,10,50)	Stanek et al (1997) and Calabrese (2003)	
PA Workers	Triangular	RiskTriang(0.5,10,50)	Stanek et al (1997) and Calabrese (2003)	

Notes:
@RISK was used to derive distributions for these parameters. If an existing function was used, then 2000 iterations were run. If a bootstrap approach was used, then 4 replicates of 2000 iterations each were used, and the mean values for the different percentiles were used in the MEE model.
The general form of the RiskCumul function is the following: RiskCumul(min, max,{x},{perc})
The general form of the RiskTriang function is the following: RiskTriang(min, most likely, max)
The general form of the RiskLogistic function is the following: RiskLogistic(α, β), where α represents the median and β is a shape parameter.
The general form of the RiskNormal function is the following: RiskNormal(mean, SD)

Attachment 1

July 23, 2003

Kevin W. Holtzclaw
Manager – PCB Issues
General Electric Company
3135 Easton Turnpike
Fairfield, CT 06431

Re: Soil Ingestion Rates

Dear Mr. Holtzclaw:

The General Electric Company (GE) has asked for my opinion on the soil ingestion rates used by the U.S. Environmental Protection Agency (EPA) for general residential and recreational exposures in its June 2003 draft of the Human Health Risk Assessment (HHRA) for the Housatonic River. For upper bound exposures, those rates are 200 mg/day for young children and 100 mg/day for older children and adults. The central tendency estimates are 100 mg/day for young children and 50 mg/day for older children and adults. These rates are based on prior studies by our group – Calabrese et al. (1989) and Stanek and Calabrese (1995a, b) for young children, and Calabrese et al. (1990) for adults.

As explained in a presentation that I made on this subject to EPA Region 1 in May 2002, I believe that these rates are overstated and can be significantly improved by reliance on newer soil ingestion studies from our group, which used improved methodologies. I have reviewed the discussion of this topic in the document entitled "Attachment E: Selection of Soil Ingestion Rates," which GE sent me and which I understand will be part of GE's comments on the HHRA. I entirely agree with that discussion. To summarize:

1. Soil Ingestion Rates for Young Children. Our most recent study of soil ingestion rates in young children (Stanek and Calabrese, 2000) included several improvements over our prior studies. These included: 1) a relatively large study group (64 children); 2) improved particle size measurements that focused attention on soil of smaller particle size; 3) a longer study duration (365 days); 4) the use of a relevant age group (1 to 4 year old children); 5) use of a random sample of the population for that age group; and 6) better control for input/output error. The results of this study showed a 95th percentile soil ingestion rate of 106 mg/day (when evaluated over a year), a median (50th percentile) ingestion rate of 17 mg/day, and an arithmetic average ingestion rate of 31 mg/day. Based on these results, I recommend that the most appropriate soil ingestion rates to use for chronic exposures to young children would be an upper bound rate of 100 mg/day (based on the year-long 95th percentile value from our study) and a central tendency estimate of 20 mg/day (based on the median value from our study).

2. Soil Ingestion Rates for Adults and Older Children. Our most recent study of soil ingestion rates in adults (Stanek et al., 1997) likewise included a number of improvements over our prior (1990) study. These included: 1) a larger number of subjects (10) and days (28) of participation; 2) an improved study design that considered seven consecutive days of fecal sampling; 3) improved selection of soil tracers; 4) a broader range of soil ingestion validation; and 5) an enhanced capacity for additional assessments including particle size of the soil ingested. In this study, one of the participating adults had an unusually high soil ingestion estimate (2 grams) on the first day of the study week. In fact, on that day, this subject had 4 times higher freeze-dried fecal weight than on any other day of the study, suggesting that his excretion on that day reflected a 3-4 day accumulation, instead of just one day, as assumed in the calculations. In consequence, the 95th percentile ingestion rate from this study (331 mg/day), which is driven by that result for one subject, is uncertain, unstable, and artificially inflated. In these circumstances, I recommend that EPA use the upper 75th percentile value from this study, which was 49 mg/day, as the basis for an upper bound soil ingestion rate of 50 mg/day for adults and older children. For the central tendency estimate, I recommend use of an ingestion rate of 10 mg/day. This is consistent with the

mean soil ingestion rate observed in our 1997 study (6 mg/day) and would represent half of the central tendency rate that I have recommended for young children.

I appreciate the opportunity to review these materials. Please do not hesitate to contact me if you have any further questions.

Sincerely,

Ed Calabrese

Edward J. Calabrese, Ph.D.
Professor of Toxicology
Director of the Northeast Regional
Environmental Public Health Center

EJC/ps

References for Letter

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Appendix G

Relative Absorption Factors (RAFs) for Oral and Dermal Absorption of Compounds in Soil Cabot Carbon/Koppers Site Gainesville, Florida

Relative Absorption Factors (RAFs) for Oral and Dermal Absorption of Compounds in Soil Cabot Carbon/Koppers Site Gainesville, Florida

Prepared by:

AMEC Earth & Environmental, Inc.
Westford, Massachusetts

July 23, 2008

1.0 General Background

To estimate the potential risk to human health that may be posed by the presence of compounds in various environmental media (such as soil, sediment, water or air), it is necessary to both estimate the potential exposure to a compound and have information about the potential toxicity the compound. In most human health risk assessments potential exposure is estimated as the human exposure dose of each compound. The exposure dose is similar to the administered dose or applied dose of a laboratory experiment. The exposure dose is then combined with an estimate of the toxicity of the compound to produce an estimate of risk posed to human health.

The estimate of toxicity of a compound, termed the dose-response value, can be derived from human epidemiological data, but it is most often derived from experiments with laboratory animals. The dose-response value can be calculated based on the administered dose of the compound (similar to the human potential dose) or, when data are available, based on the absorbed dose, or internal dose, of the compound.

In animals, as in humans, the administered dose of a compound is not necessarily completely absorbed. Moreover, differences in absorption exist between laboratory animals and humans, as well as between different media and routes of exposure. Therefore, it is not always appropriate to directly apply a dose-response value to the potential human exposure dose. In many cases, a correction factor in the calculation of potential risk is needed to account for differences between absorption in the dose-response study and absorption likely to occur upon human exposure to a compound. Without such a correction, the estimate of potential human health risk could be over- or under-estimated.

This correction factor is termed the absorption adjustment factor (AAF) or relative absorption factor (RAF). The RAF is used to adjust the human potential dose so that it is expressed in the same terms as the doses used to generate the dose-response curve in the dose-response study. The RAF is the ratio between the estimated human absorption factor for the specific medium and route of exposure, and the known or estimated absorption factor for the laboratory study from which the dose-response value was derived.

RAF = (fraction absorbed in humans for the environmental exposure)/
(fraction absorbed in the dose-response study).

The use of an RAF allows the risk assessor to make appropriate adjustments if the efficiency of absorption between environmental exposure and experimental exposure is known or expected to differ because of physiological effects and/or matrix or vehicle effects. Relative absorption factors can be less than one or greater than one, depending on the particular circumstances at hand. If it is thought that absorption from the site-specific exposure is the same as absorption in the laboratory study, then the RAF is 1.0.

2.0 Application to the Cabot Carbon/Koppers Inc Site in Gainesville, Florida

Deterministic and probabilistic risk assessments will be performed at the Cabot Carbon/Koppers Inc. site in Gainesville, Florida (Site), to evaluate the potential human health risks associated potential exposures to Site-related constituents. Based upon past experience at other wood treating sites, it is expected that the human health risk

assessment for the Cabot Carbon/Koppers Inc Site will include assessment of the potential human health risks associated with oral and dermal exposures to soils containing polycyclic aromatic hydrocarbons (PAHs), 2,3,7,8 tetra-chlorosubstituted dioxins and furans (2,3,7,8-TCDD-TEQ), and arsenic. RAFs are proposed for these constituents in the human health risk assessment for this Site. Quantitative estimates of potential risk associated with other constituents may also be included in the human health risk assessment. RAFs may be proposed for these other compounds as well but because their identity will not be known until the human health risk assessment is initiated, RAFs for other compounds are not presented herein. They will be presented in the human health risk assessment.

AMEC has critically reviewed the available peer-reviewed scientific publications that present information on the relative absorption of each of these constituents from soil, identified those RAFs that are applicable to the Site, and reviewed their overall distribution to generate a conservative estimate of the expected relative bioavailability of each constituent. As shown below, there is strong evidence that the relative absorption of each of these constituents from soil is less than EPA's default assumption of 1.0. However, to ensure that potential risks are not underestimated, AMEC is proposing to use conservative point estimates for RAFs in the deterministic risk assessment of PAHs and TCDD (i.e., the 90th percentile of the distribution of RAFs) and the full distribution of RAFs in the probabilistic risk assessment of PAHs and TCDD. In the case of oral exposures to arsenic, we have identified an RAF derived from soils at a wood treating site in Gainesville and propose to use that RAF in the deterministic assessment. That same study presents RAFs for five sites in Florida. We propose to use the distribution of RAFs from that study in the probabilistic assessment. For dermal exposures to arsenic in soil, AMEC proposes to use the 90th percentile values from the literature for the deterministic assessment and the full distribution for the probabilistic assessment.

Following is a summary of the RAFs for PAHs, 2,3,7,8-tetrachlorosubstituted dioxins and furans, and arsenic.

3.0 PAHs

AMEC has summarized the route of exposure and the experimental matrix (diet, drinking water, corn oil gavage, etc.) used in the experimental study from which the relevant dose-response value was derived for each PAH compound. In addition, AMEC has reviewed scientific literature on the absorption and bioavailability of PAH for the relevant routes of exposure and matrices. Based on these data, AMEC has derived a scientifically defensible distribution of RAFs for each relevant group of PAHs (cancer or noncancer)/route/medium situation.

3.1 Absorption in Dose-Response Studies

Absorption was not measured in the laboratory studies used to develop toxicity factors. Therefore, it was necessary to identify the dosing methods used in the toxicity reference studies and then to look to other studies of the absorption of PAH for those particular methods.

Potentially carcinogenic PAH are routinely evaluated using the comparative potency approach described in U.S. EPA (1993). With this approach, all potentially carcinogenic

PAH are assessed in terms of their benzo(a)pyrene toxic equivalent concentrations, and U.S. EPA's cancer slope factor for benzo(a)pyrene is used.

The risk assessment of potentially carcinogenic PAHs is performed using the oral cancer slope factor (CSF) for benzo(a)pyrene (B(a)P). The oral CSF for B(a)P (7.3 $(mg/kg\text{-}day)^{-1}$) is the geometric mean of four slope factors derived from two rodent feeding studies: Neal and Rigdon (1967) and Brune *et al*. (1981). In the first study, CFW mice were dosed with B(a)P in their laboratory chow (diet). The diet was prepared by dissolving benzo(a)pyrene in benzene, mixing with wheat flour, evaporating the benzene and mixing the flour-benzo(a)pyrene mixture with laboratory chow pellets. In the second, Sprague Dawley rats were also dosed with B(a)P in their laboratory chow (diet).

The oral RfD for anthracene was derived from a 90 day corn oil gavage study in male and female CD-1 (ICR) BR mice. The mice were given 250 to 1000 mg/kg-day for at least 90 days. The RfD is reported as 0.3 mg/kg-day (U.S. EPA 2008).

The oral RfD for fluoranthene was derived from a 13 week corn oil gavage study in male and female CD-1 mice. The mice were given 125 to 500 mg/kg-day. The RfD is reported as 0.04 mg/kg-day (U.S. EPA 2008).

The oral RfD for fluorene was derived from a 13 week corn oil gavage study in mice. The mice were given 125 to 250 mg/kg-day. The RfD is reported as 0.04 mg/kg-day (U.S. EPA 2008).

The oral RfD for pyrene was derived from a 13 week corn oil gavage study in male and female CD-1 mice. The mice were given 75 to 250 mg/kg-day. The RfD is reported as 0.03 mg/kg-day (U.S. EPA 2008).

The oral RfD for naphthalene was derived from a 13 week corn oil gavage study in rats (NTP, 1980). The rats were given 25 to 400 mg/kg-day. The RfD is reported as 0.02 mg/kg-day (U.S. EPA 2008).

Thus, studies of dosing by diet and gavage are of interest in determining the absorption relevant to PAH toxicity factors.

Absorption of B(a)P and other PAHs from food has been shown to be high in both humans and rodents by several researchers. Many articles on absorption were reviewed. However, studies that used inappropriate scientific methods were rejected for RAF derivation. For instance, studies that measured total radiolabel in the feces do not yield useful absorption information, because B(a)P metabolites are known to be excreted into bile (see, for instance, Chipman *et al*., 1981a, 1981b; Bowes and Renwick, 1986) and therefore absorbed material would also appear in the feces.

As an example, data are presented in a paper by Chang (1943) on fecal excretion of benzo(a)pyrene and other PAH. This paper cannot be used to estimate gastrointestinal absorption of PAH, because the gravimetric analytical method used is nonspecific and does not distinguish between unchanged PAH and PAH metabolites. A paper by Flesher and Syndor (1960) is also deficient for RAF derivation, because total tritium is measured in feces after oral dosing of rats with ^{3}H-3-methylcholanthrene. This method does not distinguish between unabsorbed PAH and absorbed and metabolized PAH

excreted into the bile and feces.

Other studies are not useful because they only define a small fraction of a PAH's total disposition. For instance, in a study by Rees *et al.* (1971), benzo(a)pyrene was given to rats by stomach tube and the PAH was measured in the lymphatic duct. While the presence of B(a)P in the lymph indicates that absorption occurred, the experiment is not quantitative. Similarly, Foth *et al.* (1988) measured benzo(a)pyrene absorption in the rat after a continuous infusion into the duodenum by measuring B(a)P in the atrial blood and bile. In this case, the conditions of the experiment are unnatural, and the experiment does not account for a total mass balance of B(a)P. Other studies were rejected for similar reasons. The following principal studies are those in which useful absorption quantitative information can be determined.

Hecht, et al. (1979)

Hecht and coworkers (Hecht *et al.,* 1979) fed B(a)P to both humans and F-344 rats and measured the unchanged B(a)P in the feces to obtain an estimate of the amount of the compound absorbed. Because unchanged B(a)P in the feces can be due to absorbed material that is excreted unchanged in the bile, these studies reveal the minimum amount of B(a)P that was absorbed. It is known, however, that B(a)P is extensively metabolized, so that the potential underestimate of absorption caused by biliary excretion of B(a)P is minor. Thus, these estimates of absorption are valid for RAF derivation.

For rats, at least 87% of B(a)P was absorbed from a low single dose in peanut oil (0.037 mg/kg). Minimum absorption from medium and high doses (0.37 mg/kg and 3.7 mg/kg) were 92.2% and 94.4%. The mean absorption of B(a)P in peanut oil in rats was 91.2% (n=30). This value was used in RAF derivation.

When rats were fed a single dose of charcoal-broiled hamburger containing B(a)P (0.002 mg/kg body weight), at least 89% was absorbed (n=10). In humans, a high percentage of B(a)P present in charcoal-broiled meat was also absorbed (0.0001 mg/kg body weight, assuming 70 kg), because no unchanged B(a)P was detected in the feces. Assuming that B(a)P was present in feces at 1/2 the detection limit, the minimal absorption is 98.8% (n=8). This study indicates that there is no significant difference in absorption between two dietary vehicles in rats. That is, absorption of B(a)P from peanut oil and meat was essentially the same. The results with rats and humans also indicates that there is no major difference in the gastrointestinal absorption of B(a)P between rats and humans when administered in food items. Both of the above values were used in RAF derivation.

Mirvish, et al. (1981)

Mirvish and co-workers (Mirvish, e*t al*., 1981) fed B(a)P to Syrian golden hamsters in their diets and measured the amount of unmetabolized B(a)P in their feces to determine the efficiency of absorption from the gastrointestinal tract. In method I, a B(a)P solution in 150 ml acetone was pipetted onto 1 kg pelleted diet contained in a glass bottle, with occasional gentle shaking. The pellets were dried overnight on trays. This method of preparing a B[a]P-containing diet is the same as the method used in the Neal and Rigdon (1967) study from which the cancer slope factor was derived. In Method II, B(a)P

was dissolved in corn oil, and the corn oil was added to a commercial rodent chow. Animals were treated with B(a)P in the diet for 7 to 10 days before samples were collected to give adequate time to reach steady-state PAH concentrations in the feces and gastrointestinal tract contents.

The percentage of fecal excretion of unchanged B(a)P remained relatively constant (94.3% to 98.0%) as its concentration in commercial diet was varied over a wide range (0.16 mg/kg to 5.5 mg/kg). Absorption efficiency was not dose-dependent. The minimal gastrointestinal absorption of B(a)P was found to be 96.7% for the commercial chow using preparation method I (average of results from seven experiments at different dose levels; eleven animal groups, each containing 3-5 hamsters) or 98% for the commercial chow using preparation method II (one experiment; four animal groups, each containing 3-5 hamsters, 1.6 mg/kg). These two values (96.7% and 98%) were used in RAF derivation.

3-methyl cholanthrene (3-MC) absorption was also studied in hamsters. 3-MC (1.7 mg/kg) was dissolved in corn oil and added to a semisynthetic diet consisting of corn oil, corn starch, vitamin-free casein, and alphacel. Minimum gastrointestinal absorption was found to be 93.8% in four animal groups containing 3-5 hamsters each. This value is also used in RAF derivation.

Other experiments demonstrated that B(a)P was absorbed slightly more efficiently from semisynthetic diets than from commercial rodent diets. Addition of corn oil to the hamsters' semisynthetic diets had little effect on the fecal excretion of unchanged B(a)P, and thus its gastrointestinal absorption. Addition of bran to the semisynthetic diets caused a slight lowering of gastrointestinal absorption.

Rabache, et al. (1985)

Rabache and co-workers (Rabache, *et al*., 1985) fed B(a)P to male Wistar rats in their diets for 22 days and measured the amount of unmetabolized B(a)P in their feces to determine the efficiency of absorption from the gastrointestinal tract. B(a)P was dissolved in soy oil and mixed with the synthetic ration, which was comprised of 10% soy oil. Young rats were given 1 g B(a)P/kg body weight, and adult rats were given 5 g/kg. The minimal gastrointestinal absorption of B(a)P was found to be 88.7% for young rats (n=8) and 99.6% for adult rats (n=12). Both of these values are used in RAF derivation.

Withey, et al. (1991)

Withey and co-workers (Withey, *et al*., 1991) administered pyrene by stomach tube to male Wistar rats in an aqueous emulsion and measured the amount of C-14 radiolabel in the blood over time to make an estimate of the traditional pharmacokinetic parameter "bioavailability". A single dose of pyrene was given to 4 groups of six animals at a concentration ranging from 4-15 mg/kg as a solution in 20% Emulphor/80% physiological saline. Radiolabeled pyrene was also given intravenously for comparison. "Bioavailability" was defined as the area of the blood level-time curve of radiolabel over a specified time period after oral dosing (0-8 hours) divided by the corresponding area of the curve for intravenous dosing.

"Bioavailability" was found to vary from 65% to 84% depending on dose level. This

pharmacokinetic parameter has its basis in classical drug studies where the circulating blood level of the parent (unmetabolized) drug is of primary interest. However, this parameter does not provide an optimal estimate of a chemical's gastrointestinal absorption, because the fraction of the chemical or its metabolites that leaves the blood and distributes to tissues is not properly counted.

For this reason, the urinary excretion data over 6 days were also used to derive an estimate of absorption for each group. Absorption was estimated as the fraction of total radiolabel excreted in the urine after oral dosing divided by the fraction excreted after intravenous dosing. Because the fraction excreted in the urine at day 6 post-dosing was slightly higher at every dose level for oral dosing compared to intravenous dosing, the estimates of gastrointestinal absorption are 100% for all four dose groups.

For each dose group, the blood level estimate of "bioavailability" was averaged with the urinary estimate of gastrointestinal absorption to derive an estimate of gastrointestinal absorption. These estimates are: 92%, 82.5%, 86.5%, and 87% for doses ranging from 4-15 mg/kg. The average of these four estimates (87%) is used in RAF derivation.

Grimmer, et al. (1988)

Grimmer and co-workers (Grimmer, *et al*., 1988) administered chrysene by stomach tube to unfasted male Wistar rats in a solution of 33% dimethylsulfoxide and 66% corn oil. Eight rats weighing 200-250 grams received a single dose of 50 ug chrysene. Assuming an average weight of 225 g, the dose was 0.22 mg/kg. Feces and urine were collected for four days. Unchanged chrysene and specific metabolites were analyzed. The fraction of the unchanged chrysene in the feces was determined. This serves as an estimate of minimal gastrointestinal absorption. Average absorption for the eight rats was 86.9%. This value was used in RAF derivation.

Bartosek, et al. (1984)

Bartosek and co-workers (Bartosek, *et al*., 1984) administered benz(a)anthracene, chrysene, or triphenylene to female CD-COBS rats by stomach tube in an aqueous emulsion of 10% Pluronic F68 emulsifier and 90% olive oil. Animals were fasted for 24 hours prior to being given a single oral dose of the PAH. Each group consisted of 3-5 rats weighing 150-170 g. PAH were given at single doses of 11.4 and 22.8 mg/ animal, which correspond to 71.3 mg/kg and 142.5 mg/kg, assuming an average weight of 160 g. Rats were allowed access for food 3 hours after dosing. The fraction of administered dose of the unchanged PAH recovered in the feces after 72 hours was taken as an estimate of the minimal absorption. Results were 94% for benz(a)anthracene, 75% for chrysene, and 97% for triphenylene. These three values were used in RAF derivation.

Summary of Absorption Data for Exposure Methods used in the Dose-Response Studies

The data presented above and summarized in Table 1, indicate that, although there is some variability in the absorption of various PAH, no consistent trend is apparent that would lead one to conclude that absorption of one PAH differs significantly from another when administered in the ways used to derive dose-response data. In addition, the data show that gastrointestinal absorption of PAH is relatively high, whether given in oil vehicles or in the diet. Accordingly, all of the data from the dose-response studies from

which the cancer slope factor for B(a)P and the RfDs for various noncarcinogenic PAH were derived, were merged to derive an absorption estimate for all PAHs of interest. The resulting estimate of gastrointestinal absorption of PAH is 92%.

However, each data point in a study was not given equal weight in deriving the final estimate of oral absorption in the dose-response studies. For instance, in the Mirvish, *et al.* study the 96.7% value represents the average of results from seven experiments at different dose levels. There were eleven animal groups, each containing 3-5 hamsters. Thus, this value represents experiments with 33-55 animals. The 98% value represents one experiment at one dose group. There were four animal groups, each containing 3-5 hamsters. Thus, this data point represents 12-20 animals. There are many ways to summarize such a large and diverse set of experimental results. Table 2, however, demonstrates that the resulting estimate of absorption in the PAH dose-response studies is not particularly sensitive to the manner of summarizing the available data.

TABLE 1
SUMMARY OF ABSORPTION DATA FOR PAH DOSE-RESPONSE STUDIES

Value	Citation	Animal	PAH	Vehicle
91.2%	Hecht	male F344 rats	B(a)P	Peanut oil (single dose)
89%	Hecht	male F344 rats	B(a)P	Char-broiled hamburger (single dose)
98.8%	Hecht	Humans	B(a)P	Char-broiled hamburger (single dose)
88.7%	Rabache	young male Wistar rats	B(a)P	Synthetic diet + soy oil (22 days)
99.6%	Rabache	adult male Wistar rats	B(a)P	Synthetic diet + soy oil (22 days)
96.7%	Mirvish	male Syrian golden hamsters	B(a)P	Commercial Diet Method I (7-10 days)
98.0%	Mirvish	male Syrian golden hamsters	B(a)P	Corn oil + commercial diet Method II (7-10 days)
87%	Withey	male Wistar rats	pyrene	20% Emulphor/ 80% saline (single dose)
86.9%	Grimmer	male Wistar rats	chrysene	33% DMSO/ 66% corn oil (single dose)
94%	Bartosek	female CD-COBS rats	B(a)A	10% emulsifier/ 90% olive oil (single dose)
75%	Bartosek	female CD-COBS rats	chrysene	10% emulsifier/ 90% olive oil (single dose)
97%	Bartosek	female CD-COBS rats	triphenylene	10% emulsifier/ 90% olive oil (single dose)
93.8%	Mirvish	male Syrian golden hamsters	3-methyl cholanthrene	Corn oil + semisynthetic diet (7-10 days)

TABLE 2
METHODS OF SUMMARIZING PAH GASTROINTESTINAL ABSORPTION DATA

Method Used	# Data Points	Average Absorption
Each experiment within a study used as a single data point*	13	92.0%
Each result presented in each study used as a single data point	24	92.1%
Each result presented in each B(a)P study used as a single data point	15	95.0%
Each study represented as a single data point	7	90.9%
Each B(a)P study represented as a single data point	3	94.4%

* Method used in this RAF derivation.

3.2 RAF for Oral Exposure to Soil

Seven studies were identified in which the gastrointestinal absorption of PAHs was measured from a soil matrix. These include Goon, *et al.* (1991), Goon, *et al.* (1990), Weyand, *et al.* (1996), Magee, *et al*. (1999), Koganti, *et al* (1998), and Bordelon, *et al*. (2000), and Grøn, *et al*. (2007). Each of these studies is discussed below. Each of these studies used exposure methods similar to those employed in the dose-response investigations (feeding or gavage) and, additionally, had their own internal controls. Therefore, RAFs may be calculated directly from the work, without use of fractional absorption observations noted in the studies described previously.

<u>Studies</u>

Weyand, et al. (1996)

Weyand, *et al.* (1996) studied the bioavailability of pyrene from manufactured gas plant (MGP) residue (coal tar) by comparing the urinary pyrene metabolite levels in animals receiving pyrene as methylene chloride extracts of MGP contaminated soil in their diet to animals receiving pyrene as MGP contaminated soil in their diet. The two contaminated soil samples were aged soils from MGP sites. They were sieved to a particle size range of less than or equal to 0.150 mm. Soil was added to powder diets from PMI Feeds, Inc. (rodent laboratory diet #5001) (20% soil / 80% powder diet). MGP contaminated soil extracts were added to gel diets from Bio-Serv (rodent basal gel diet) so that the same amount of pyrene was present as in the soil/diet groups. Groups of female $B_6C_3F_1$ mice were fed soil or organic extract for 14 days. Urine was collected on day 14. The level of pyrene metabolites (1-hydroxypyrene, 1-hydroxypyrene glucuronide conjugates, and 1-

hydroxypyrene sulfate conjugates) were determined by HPLC using fluorescence detection (Singh, *et al*., 1995).

“Fractional urinary excretion" is defined as the amount of pyrene excreted in the urine over 24 hours on day 15 divided by the amount of pyrene ingested on day 15 x 100. The amount of pyrene excreted into the urine is not, itself, a direct measure of total absorption of pyrene from the diet, because PAH are efficiently excreted into the feces via the biliary system. However, the level of pyrene and its metabolites in urine on day 15 gives a measure of the steady state level of pyrene excretion.

As shown in Table 3, the "fractional urinary excretion" of pyrene from soil #1 was 6.2% and from soil #2 was 1.7%. The "fractional urinary excretion" of pyrene from the organic extract of soil #1 was 17.2% and from soil #2 was 16.1%.

The ratio of "fractional urinary excretion" from MGP contaminated soil to "fractional urinary excretion" from an extract of MGP contaminated soil added to diet is a direct estimate of the oral-soil RAF. It is a measure of the degree to which the presence of soil increases or decreases the absorption of pyrene from the diet. The RAF from soil #1 was 36% (6.2%/17.2% x 100).

TABLE 3
PYRENE URINARY METABOLITES, SOIL VS ORGANIC EXTRACT OF SOIL
(WEYAND, *et al*., 1996)

Diet	[a]Pyrene Ingested (µg/mouse)	[b]Pyrene Excreted (µg/mouse)	[c]Fractional Urinary Excretion
Extracted Soil #1	0	0	ND
Extracted Soil #2	0	0	ND
Soil #1	0.60	0.039	6.2
Soil #2	30.42	0.527	1.7
Organic Extract #1	0.56	0.097	17.2
Organic Extract #2	25.91	4.16	16.1

[a]The sum of 1-OH P-GlcUA, 1-OH P-Sul, and 1-OH P levels is expressed in terms of equivalents of pyrene.
[b]The amount of soil and pyrene consumed in metabolism cages on day 15 over a period of 24 hr.
[c]Fractional Urinary Excretion = (amount of pyrene excreted / amount of pyrene consumed on day 15) x 100. (The authors termed this "bioavailability." Because this is a nonstandard use of the term, it is renamed here.)

Note: Soil #1: 1 ppm pyrene; 9 ppm total PAHs; Soil #2: 35 ppm pyrene; 377 ppm total PAHs.

The RAF from soil #2 was 11% (1.7%/16.1% x 100). This study clearly shows that pyrene in aged soil is absorbed in the gastrointestinal tract to a lesser degree than is pyrene added to rodent food as an organic extract.

DNA adducts in lung tissue were also measured for soil #2 (246 cPAH) and its organic extract, and the resulting RAF, which is relevant to potentially carcinogenic PAHs, is 0.17.

Koganti, et al. (1998)

Koganti, *et al*. (1998), is another study by workers in Weyand's laboratory and the methods described above were also used here. In this case, soils and soil extracts from three MGP sites were fed to female mice. However, in contrast to earlier work from this laboratory, two measurements of systemic absorption of PAH were used. The first method was equivalent to that described for earlier studies: measurement of urinary metabolites of pyrene. The second method was the quantitative measurement of covalent binding of PAH metabolites to DNA of lung tissue (DNA adducts). This is of interest because the measurements may address the absorption of two different groups of PAH. Pyrene is a low molecular weight PAH with less affinity for soil sorption than higher molecular weight PAH, such as B(a)P. Thus, the pyrene metabolite measurements may relate specifically to low molecular weight PAH and might be hypothesized to be more available for absorption from a soil matrix than higher molecular weight compounds. DNA adduct measurement may be indicative of the absorption of high molecular weight PAH and may be used to evaluate comparative absorption of high molecular weight PAH, if combined with the appropriate measure of PAH dosing.

Koganti, *et al* (1998) fed mice (four in each dosing group) with a mixture of soil and feed or organic extract or soil plus feed at three to four different nominal concentrations. RAFs were calculated based on the ratio of fractional urinary excretion (described in the discussion of the Weyand, 1996 report) observed between animals fed soils and those fed organic extract of the soil. The results of this evaluation are shown in Table 4 of Koganti, *et al*. (1998). Although Koganti, *et al*. (1996) used a soil or extract addition to make up several different final concentrations of PAH in the feed, no trend in fractional absorption with concentration was observed. Therefore, all RAFs calculated in this report were used separately and are included in the RAF summary table for pyrene metabolites of this report (Table 7).

In addition to measurement of pyrene metabolites in urine, Koganti, *et al*. (1998) quantified DNA adducts. Adducts were measured in only one large organ (lung) and do not fully capture total adduct mass in the animal. However, Koganti, *et al*. (1998) used a ratio approach to calculate the "fractional lung adduct" as a proportion of the total exposure to PAH (mg PAH per mouse). The ratio of fractional lung adduct in mice fed to that observed in mice fed organic extract is a means of calculating RAFs that is identical to the fractional urinary excretion method described above. Koganti, *et al*. (1998) expressed the opinion that only higher molecular weight PAH generally believed to be rodent or human carcinogens were responsible for DNA adduct formation. Therefore, they normalized fractional lung adducts based on the total exposure of each mouse to "carcinogenic PAH" (cPAH). As such, the RAFs calculated from DNA adduct quantification (these appear in Table 5 of Koganti, *et al*. (1998)) may be specifically relevant to high molecular weight, potentially carcinogenic PAH. These RAFs are summarized in a separate table in this report, along with other RAFs that may also be specifically relevant to cPAH (Table 8). As with previously-described observations using

pyrene metabolites, Koganti, *et al*. (1998) discern no association of RAF with the concentration of cPAH administered, so Table 8 contains all RAF calculations.

Goon, et al. (1991)

Goon, *et al.* (1991) studied the bioavailability of a specific PAH, benzo(a)pyrene, administered orally as the pure chemical or as B(a)P adsorbed onto soil particles. Additional information about the study was obtained directly from the authors (Goon, *et al*., 1996) and an analysis of the work of Goon and co-workers has been published (Magee, *et al*, 1996)Male Sprague-Dawley rats were gavaged with B(a)P mixed with ^{14}C-B(a)P in solution [0.5% Tween 80 (v/v in saline)] (1.0 µmol B(a)P/kg, 25 µCi/kg) or the equivalent dose adsorbed onto a clay-based soil or a sand-based soil. The soils consisted of 2.5 g solid/kg containing 100 mg/kg B(a)P. All animals received 7.5 mL of 0.5% Tween 80 (v/v in saline).

Venous blood samples were collected from the retro-orbital plexus at predetermined times (0.5, 1, 2, 4, 8, 12, 24, 48, 72, 96, 120, 144, and 168 hours), and excreta were collected continuously over 24-hour intervals. After 168 hours, animals were euthanized and tissues collected for analysis. Total radioactivity was measured by liquid scintillation in blood, urine, feces, and tissues.

The sandy soil was classified as a loam which was very low in organic content, 0.04%. It contained 47% sand, 41% silt, and 12% clay. The pH was 6.5, and the cation exchange content was 0.6 meq/100 g. The clay-based soil was classified as clay with low organic content, 1.35%. It contained 6% sand, 18% silt, and 76% clay. The pH was 7.0 and the cation exchange content was 45.65 meq/100 g. The sandy soil was ground and sonic sifted. The clay-based soil was dried and passed through a Brickman ultra-centrifugal mill. In both cases, the particles size was small, <100 um. Both soils were washed twice with methylene chloride and dried before use. This destroyed any microbial activity that may have existed in the soils.

B(a)P and ^{14}C-B(a)P were added in acetone to soils. The acetone was evaporated, leaving soils that were 100 ppm in B(a)P and 10 uCi/g in radiolabel. Animals were administered the soil-adsorbed B(a)P at various time intervals after the soil and the B(a)P were mixed: 1 day, 7 days, 30 days, 6 months and one year. Animals were fasted for 12 hours prior to dosing. Two hours after dosing, Purina Rodent Chow 5001 and water were available *ad libitum*.

In this experiment, three dosing vehicles were prepared that contained radiolabeled B[a]P: emulsified aqueous solution, sandy soil, and clayey soil. Male Sprague Dawley rats were gavaged with the three vehicles and followed for seven days. Blood, urine, and feces were measured at numerous time points for seven days. After seven days, the animals were sacrificed, and more than ten tissues were analyzed for radiolabel. Animals received equal doses of B[a]P regardless of dosing group.

After the initial experiment, the same vehicles were administered to different animals after seven days, one month, six months, and one year. Recoveries for these experiments were reasonable:

Solution: 76%
Sandy Soil: 102%
Clayey Soil: 105%

After normalizing to each animal's individual total recovery, the data were summarized and RAFs were derived by comparing the fractional seven-day urinary excretion to that in the solution group and by comparing the seven day blood area-under-the-curve to that in the solution group (see Table 4). Because the reanalysis of the 1990 experiment showed that there was no difference between the solution and diet groups, no normalization of the results of the solution groups was deemed necessary to create RAFs that are directly relevant to use with the cancer slope factor, which was derived from dietary studies.

TABLE 4
SUMMARY OF RAFS FROM GOON, *et al*. (1991) REANALYSIS

	Urinary RAF	**Urinary RAF**	**Blood AUC RAF**	**Blood AUC RAF**
Ageing Period	**Sandy Soil**	**Clayey Soil**	**Sandy Soil**	**Clayey Soil**
One Day	0.47	0.40	0.43	0.35
Seven Days	0.46	0.52	0.49	0.38
One Month	0.56	0.40	0.45	0.36
Six Months	0.48	0.33	0.37	0.22
One Year	0.50	0.26	0.40	0.24

For site aged sandy soil the RAF based on the blood AUC data is 0.39. The RAF based on urinary data is 0.49. These values are the averages of the six month and one year experiments.

For site aged clayey soil the RAF based on the blood AUC data is 0.23. The RAF based on urinary data is 0.30. These values are the averages of the six month and one year experiments.

One way to measure relative bioavailability is to compare the area under the blood curve (AUC) for total radiolabel over the entire 168 hour experimental period during which blood B(a)P levels were measured. Radiolabel in the blood represents a fraction the

B(a)P that was absorbed in the gastrointestinal tract, including parent B(a)P and metabolites.

The use of AUC measurements is a classic approach in drug pharmacology where systemic bioavailability is defined as the blood AUC after an intravenous dose divided by the AUC after an oral dose. In the case of drugs, the amount of parent drug circulating in the blood over a long period of time is of primary interest, because, in most cases, first pass metabolism of the drug in the liver reduces the drug efficacy. Metabolites are inactive and are excreted. Thus, total blood levels of parent drug are of greater interest than are the levels of drug plus metabolites.

This same concern is not relevant for the risk assessment of PAHs, such as B(a)P, because B(a)P is not direct acting. No toxic effects are manifested by the parent, unmetabolized B(a)P. Instead, metabolism is required for toxicity. It is the metabolites of B(a)P and other PAH that bind to cellular macromolecules, such as DNA, and cause adverse effects in various tissues. Metabolism of PAHs occurs in all tissues, and orally administered B(a)P has caused tumors in laboratory animals in various tissues, including stomach, lung, esophagus, larynx, and others. B(a)P metabolism is also multi-stepped. In order for the B(a)P diol epoxide, the putative mutagenic metabolite, to be formed, several metabolic conversions involving several enzymes must occur.

Thus, in some cases the toxic metabolite in a distant tissue, such as the lung, is caused by a B(a)P molecule that was absorbed through the gastrointestinal tract, was *not* metabolized in the liver, circulated through the blood, and was metabolized in several steps in the lung. In other cases, the toxic lung metabolite was formed by a molecule that was absorbed though the gastrointestinal tract, was metabolized to an intermediate metabolite in the liver, and circulated through the blood as a B(a)P metabolite, and was metabolized several more times in the lung to a toxic metabolite.

In addition, B(a)P and B(a)P metabolites excreted in the bile are known to be reabsorbed in the gastrointestinal tract by a process known as enterohepatic recirculation (Chipman, *et al*., 1981). Thus, some B(a)P metabolites are known to be excreted into the bile and the gastrointestinal tract. When present in the gastrointestinal tract parent B(a)P can be reabsorbed. In addition, conjugated metabolites, such as glucuronide, sulfate, and glutathione metabolites can be de-conjugated by enzymes residing in bacteria present naturally in the gastrointestinal tract. After de-conjugation, the primary metabolite can and is reabsorbed. After reabsorption, it can travel to a distant tissue via the systemic circulation and cause damage.

Thus, for B(a)P and other PAHs, the circulating blood level of just the parent compound is not a relevant dose metric. Instead, the total B(a)P dose including parent B(a)P and metabolites is the critical parameter to measure. This is because some metabolites are directly toxic to distant tissues, some metabolites are metabolic precursors of secondary metabolites that are toxic to distant tissues and can be formed therein, and some metabolites can be excreted and reabsorbed and can later cause damage in distant tissues, including the gastrointestinal tract itself.

While the total blood radiolabel AUC from 0-168 hours does not define the fraction of the administered B(a)P that was absorbed in an animal or a treatment group, the ratio of AUC measurements for two treatment groups administered the B(a)P by the same route

of exposure in an excellent measure of *relative* bioavailability between the two treatment groups.

AMEC notes that the two soils studied were very low in organic content (0.04% and 1.35%). Certainly, the value for sandy soil is much lower than a typical soil. For instance, in its Risk Based Corrective Action guidance, the ATSM assumes 1% as a default value for typical soils. Accordingly, the RAF for clay-based soil is probably more typical of average soils than the RAF for sandy soil.

Goon, et al. (1990)

In an earlier experiment, Goon, *et al*. (1990) studied the bioavailability of B(a)P in aqueous solution, in laboratory chow, in unaged sandy soil and in unaged clay-based soil. Additional information was obtained directly from the authors (Goon, *et al*., 1996). The study was performed in the same manner as the one described above with the exception that 4 male rats and 4 female rats were placed in each of four study groups, including rodent chow.

AMEC rejected the data from the Goon, *et al*. (1990) study for RAF derivation and relied solely on the 1991 experiment because of low recovery and high variability.

After dosing, urine, feces, and blood were analyzed for seven days. Then, at the end of seven days, the animals were sacrificed, and all tissues were analyzed. Total recovery of B[a]P was calculated by comparing the amount recovered to the amount administered. Recoveries of total B[a]P were generally poor in all treatment groups in the 1990 study:

Solution	75%
Diet	62%
Sand	65%
Clay	48%

It is not known what the cause of the poor recoveries was, but such poor recovery of administered dose is reason enough to reject this study from RAF derivation.

However, for the sake of completeness AMEC summarized the tissue, urine, and fecal B[a]P for each animal. In view of the high variability among animals within treatment groups, each animal was analyzed separately, and statistical tests were performed to determine if the groups were statistically significantly different from each other. Because only total radiolabel was measured, one cannot distinguish between unmetabolized B[a]P and B[a]P metabolites in the feces. Tissue radioactivity was found to be insignificant compared to the amount excreted in the urine. Thus, it is not possible to make estimates of total absorption from this experiment. Accordingly, relative bioavailability is determined by comparing the amount of the administered dose cumulatively found in the urine over the seven day period after dosing.

TABLE 5
SUMMARY OF URINARY EXCRETION RESULTS
GOON, *et al*. (1990)

TREATMENT GROUP	MEAN FRACTIONAL 7-DAY URINARY EXCRETION (%)*	STANDARD DEVIATION (%)	SAMPLE SIZE
Solution	4.9 % (1)	1.9 %	8
Diet (unaged)	4.4 % (2)	1.8 %	10
Solution + Diet (unaged)	4.6 % (3)	1.8 %	18
Sand (unaged)	3.7 % (4)	2.2 %	10
Clay (unaged)	1.9 % (5)	0.8 %	8

* Total amount detected in urine over seven days (nmol) / administered dose (nmol) x 100.
(1) Not significantly different from diet group.
(2) Not significantly different from solution group.
(3) Solution and diet groups combined.
(4) Not significantly different from solution + diet group.
(5) Significantly different from solution + diet group.

As noted above (see Table 5), bioavailability as measured by urinary excretion was not statistically different between the solution and diet groups. This finding differs from the results reported by Goon, *et al*. (1990) for two reasons. First, the urinary, fecal and tissue data had not been analyzed at that time, and estimates of urinary excretion were lacking. Second, the blood area-under-the-curve (AUC) data presented by Goon, *et al*. in 1990 were grouped, so that the great variability from animal-to-animal was masked. The result that follows the animal-by-animal reanalysis of the raw data is consistent with the general literature on PAH absorption.

Because the solution and diet groups were not different, data from these two groups were merged for comparison with the sand and clay groups. Bioavailability was not statistically different between the solution/diet group and the unaged sand group. This contradicts results from the study that were presented at the 1990 Society of Toxicology meeting, which indicated that the bioavailability from the sand group was *higher* than from the solution and diet groups. In fact, the mean urinary excretion in the sand group is lower than the absorption in the solution, diet, or diet/solution group. Because of the great variability within both groups, however, there is no statistically significant difference between the solution/diet and sand groups. This result does not demonstrate that the presence of sandy soil has no effect on bioavailability. Instead, the experiment has so much variability in it that the experiment is unable to detect any difference that may actually exist.

Bioavailability as measured by cumulative urinary excretion *was statistically different* between the solution/diet group and the unaged clay group. This confirms results from the study that were presented at the 1990 Society of Toxicology meeting, which indicated a lower bioavailability from the clay group. Results could be used to derive an RAF for unaged clay (RAF=0.42).

In conclusion, the animal-by-animal evaluation of the data from the Goon, *et al*. (1990) study shows there is very high animal-to-animal variability and that recoveries of administered B[a]P were low, ranging from 48% to 75%. Because of the high variability, statistical tests show that there is no difference in the bioavailability of B[a]P in the groups treated with the test chemical in emulsified aqueous solutions, dietary vehicle, or in sandy soil. There was a statistically significant difference in the B[a]P absorption from clayey soil. We conclude from this detailed analysis that the experiment in which males and female animals were both used lacks sufficient power to measure bioavailability and must be rejected for RAF derivation purposes.

Magee, et al. (1999)

Magee, *et al*. (1999) studied the absorption of PAH from soils collected from residential yards in the vicinity of a Superfund site (not MGP waste). Three samples (identified as 007-009) were selected from available material based on the availability of a size fraction (<250 μm) most appropriate for absorption studies. The concentration of PAH in the soils ranged from 66 to 388 ppm, and benzo[a]pyrene- toxic equivalent concentrations range from 9 to 70 ppm.

This study was performed using organic extracts of the soils as an internal control, as was described in the discussion of studies by Weyand, *et al*. (1996). Powder rat chow containing either soil or organic extract of that soil was fed to mice (2 replicates of 4 mice each for each of the 3 soil samples) for 14 days and urine was collected for analysis of both pyrene and B(a)P metabolites. Additionally, rats were sacrificed at the end of the exposure period and lung tissue was harvested for quantification of DNA adducts. RAFs were calculated as the ratio of either the fractional urinary excretion of B(a)P metabolites or the fractional lung adducts between soil and organic extract fed mice (the lung adducts were divided by cPAH exposure, as done in the Koganti, *et al*. (1998) study and therefore relates specifically to cPAH availability). The average fractional urinary excretion and fractional lung adduct values for each soil sample (based on observations in eight animals each) are shown in Table 6, with the corresponding RAF.

TABLE 6
RAF CALCULATIONS OF B(A)P AND cPAH RAFS
MAGEE, *et al*. (1999)

Soil Sample	Mean Fractional Urinary Excretion of 3-hydroxy B(a)P (ug 3OH-B(a)P per mouse/ug BaP ingested per mouse)		RAF based on B(a)P metabolite excretion	Mean Fractional Lund Adduct (pmol/mg DNA per mouse/mg cPAH ingested per mouse)		RAF based on DNA Adducts
	Soil	Organic Extract		Soil	Organic Extract	
Soil 009	0.0116	0.1587	0.07	3.04	40.99	0.07
Soil 008	0.0375	0.386	0.1	6.97	36.14	0.19
Soil 007	0.0587	0.2029	0.29	5.93	16.31	0.36

Bordelon, et al. (2000)

Bordelon, *et al*. (2000) studied the oral bioavailability of coal tar from soil in Fischer 344 male rats. The soil contained 0.35% coal tar, and had been aged for 9 months. DNA adduct levels (normalized to moles of normal nucleotides, quantity of PAH ingested, and body weight) were determined in liver and lung.

Relative bioavailability of coal tar from soil was calculated as the ratio of relative DNA adduct levels (per mg PAH ingested per kg body weight) in rats receiving 0.35% coal tar in aged soil, to relative DNA adduct levels (per mg PAH ingested per kg body weight) in rats receiving 0.35% coal tar directly. Relative coal tar bioavailabilities, based on hepatic and lung DNA adduct levels, were 0.35 and 0.44, respectively.

Grøn, et al. (2007)

Grøn, *et al*. (2007) studied the oral bioavailability of benzo(a)pyrene and dibenz(a,h)anthracene from four Danish soils (identified as 4, 5, 6, and 7) in minipigs. Three of the soils were contaminated with mine waste and one was contaminated with household and construction waste. The concentrations of B(a)P and Db(a,h)A in Soil 4 were 6.0 and 0.77 mg/kg dry weight, respectively. The concentrations of B(a)P and Db(a,h)A in Soil 5 were 270 and 43 mg/kg dry weight, respectively. The concentrations of B(a)P and Db(a,h)A in Soil 6 were 70 and 19 mg/kg dry weight, respectively. The concentrations of B(a)P and Db(a,h)A in Soil 7 were 22 and 5.4 mg/kg dry weight, respectively.

Relative bioavailability of B(a)P from each soil sample was calculated as the ratio of the absolute soil B(a)P bioavailability to the absolute B(a)P bioavailability from a hexane solution. Absolute bioavailability was determined as the fraction of ingested B(a)P not excreted with feces. Relative bioavailability of B(a)P from Soils 4, 5, 6, and 7, was determined to be 0.36, 0.55, 0.48, and 0.47, respectively.

Relative bioavailability of Db(a,h)A from each soil sample was calculated as the ratio of the absolute soil Db(a,h)A bioavailability to the absolute B(a)P bioavailability from a hexane solution (the absolute bioavailability of Db(a,h)A for hexane solution was not determined). Absolute bioavailability was determined as the fraction of ingested Db(a,h)A not excreted with feces. Relative bioavailability of Db(a,h)A from Soil 4 was not determined. Relative bioavailability of Db(a,h)A from Soils 5, 6, and 7, were determined to be 0.30, 0.28, and 0.27, respectively.

RAF Derivation

Several estimates of oral-soil RAFs were derived from six studies, as shown in Tables 7 and 8. These estimates of oral-soil RAFs were derived from studies with B(a)P, a five-ring potentially carcinogenic PAH, and Db(a,h)A, a 5-ring PAH for a general measure of cPAH; and pyrene, a four-ring noncarcinogenic PAH for a general measure for ncPAH. Because of the physical property differences (specifically, affinity for sorption to soil) between low molecular weight PAH such as pyrene and the higher molecular weight PAH such as B(a)P and other cPAH, it is likely that the relative absorption of these subclasses of PAH will be different. Indeed, the mean and 90th percentile RAFs based on pyrene (Table 7) are 0.45 and 0.78, respectively (calculated from the full distribution of results using @RISK® software and assuming data are normal), whereas the mean and 90th percentile RAFs based on B(a)P and other cPAH are smaller: 0.25 and 0.53, respectively (calculated from the full distribution of results using @RISK® software and assuming data are exponential). It is recommended that the 90th percentile pyrene RAF be used for all low molecular weight PAH and the 90th percentile value of observations from Table 8 be used for all cPAH.

TABLE 7
SUMMARY OF ORAL-SOIL RAFS FOR PYRENE

Oral-Soil RAF	Notes	Source
0.08	B6CF1 mice, Site B MGP soil, 1 ppm pyrene, 4 ppm tPAH	Koganti, *et al.* (1998)
0.11	B6CF1 mice, Site B MGP soil, 5 ppm pyrene, 36 ppm	Koganti, *et al.* (1998)
0.11	B6C3F1 mice, MGP soil, 35 ppm pyrene, 377 ppm tPAH	Weyand, *et al.* (1996)
0.21	B6C3F1 mice, Site A MGP soil, 17 ppm pyrene, 135 ppm tPAH	Koganti, *et al.* (1998)
0.26	B6CF1 mice, Site C MGP soil, 627 ppm pyrene, 3120 ppm tPAH	Koganti, *et al.* (1998)
0.30	B6CF1 mice, Site A MGP soil, 193 ppm pyrene, 1600 ppm tPAH	Koganti, *et al.* (1998)
0.31	B6CF1 mice, Site B MGP soil, 148 ppm pyrene, 975 ppm tPAH	Koganti, *et al.* (1998)
0.36	$B_6C_3F_1$ mice, MGP soil, 1 ppm pyrene, 9 ppm tPAH	Weyand, *et al.* (1996)
0.46	$B_6C_3F_1$ mice, MGP soil, 57 ppm pyrene, 456 ppm tPAH	Magee, *et al.* (1998)
0.47	$B_6C_3F_1$ mice, MGP soil, 44 ppm pyrene, 388 ppm tPAH	Magee, *et al.* (1998)
0.52	B6CF1 mice, Site C MGP soil, 3 ppm pyrene, 20 ppm tPAH	Koganti, *et al.* (1998)
0.55	B6CF1 mice, Site A MGP soil, 1 ppm pyrene, 8 ppm tPAH	Koganti, *et al.* (1998)
0.75	B6CF1 mice, Site A MGP soil, 0.2 ppm pyrene, 0.6 ppm	Koganti, *et al.* (1998)
0.97	$B_6C_3F_1$ mice, MGP soil, 7 ppm pyrene, 66 ppm tPAH	Magee, *et al.* (1998)
1.0	B6CF1 mice, Site C MGP soil, 21 ppm pyrene, 132 ppm tPAH	Koganti, *et al.* (1998)

TABLE 8
SUMMARY OF ORAL-SOIL RAFS FOR B(A)P AND cPAH

Oral-Soil RAF	Notes	Source
0.07	B6C3F1 mice MGP soil; 48 ppm BAP, 388 ppm tPAH (BAP metabolites)	Magee, *et al.* (1998)
0.07	B6C3F1 mice MGP soil; 239 ppm cPAH, 388 ppm tPAH (DNA adducts)	Magee, *et al.* (1998)
0.08	B6C3F1 mice, Site A MGP soil, 86 ppm cPAH, 135 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.10	B6C3F1 mice MGP soil; 50 ppm BAP, 456 ppm tPAH (BAP metabolites)	Magee, *et al.* (1998)
0.15	B6C3F1 mice, Site B MGP soil, 24 ppm cPAH, 36 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.17	B6C3F1 mice, Site A MGP soil, 5 ppm cPAH, 8 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.17	B6C3F1 mice, MGP soil, 247 ppm cPAH, 377 ppm tPAH (DNA adducts)	Weyand, *et al.* (1996)
0.20	B6C3F1 mice, Site C MGP soil, 895 ppm cPAH, 3120 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.19	B6C3F1 mice MGP soil; 271 ppm cPAH, 456 ppm tPAH (DNA adducts)	Magee, *et al.* (1998)
0.23	Sprague-Dawley Rats, clay-based soils, 100 ppm BAP, 100 ppm tPAH (blood measurements)	Goon, *et al.* (1991)
0.27	Minipigs; Danish contaminated soil 7; 5.4 mg/kg dw DiB(ah)anth; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.28	Minipigs; Danish contaminated soil 6; 19 mg/kg dw DiB(ah)anth; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.29	B6C3F1 mice MGP soil; 6 ppm BAP, 66 ppm tPAH (BAP metabolites)	Magee, *et al.* (1998)
0.30	Sprague-Dawley Rats, clay-based soils, 100 ppm BAP, 100 ppm tPAH (urine measurements)	Goon, *et al.* (1991)

0.30	Minipigs; Danish contaminated soil 5; 43 mg/kg dw DiB(ah)anth; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.32	B6C3F1 mice, Site B MGP soil, 238 ppm cPAH, 975 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.35	Fischer 344 rats; soil aged for 9 months with 0.35% coal tar; DNA adducts in liver.	Bordelon, *et al.* (2000)
0.36	B6C3F1 mice MGP soil; 41ppm cPAH, 66 ppm tPAH (DNA adducts)	Magee, *et al.* (1998)
0.36	Minipigs; Danish contaminated soil 4; 6.0 mg/kg dw BaP; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.39	Sprague-Dawley Rats, sandy soils, 100 ppm BAP, 100 ppm tPAH (blood measurements)	Goon, *et al.* (1991)
0.44	Fischer 344 rats; soil aged for 9 months with 0.35% coal tar; DNA adducts in lung.	Bordelon, *et al.* (2000)
0.47	B6C3F1 mice, Site A MGP soil, 986 ppm cPAH, 1600 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)
0.47	Minipigs; Danish contaminated soil 7; 22 mg/kg dw BaP; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.48	Minipigs; Danish contaminated soil 6; 70 mg/kg dw BaP; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.49	Sprague-Dawley Rats, sandy soils, 100 ppm BAP, 100 ppm tPAH (urine measurements)	Goon, *et al.* (1991)
0.55	Minipigs; Danish contaminated soil 5; 270 mg/kg dw BaP; fraction of ingested PAH not excreted in feces.	Gron, *et al.* (2007)
0.76	B6C3F1 mice, Site C MGP soil, 55 ppm cPAH, 132 ppm tPAH (DNA adducts)	Koganti, *et al.* (1998)

3.3 RAF for Dermal Exposure to Soil

Two studies were identified in which the dermal absorption of PAHs was measured from a soil matrix. These include Yang, *et al.* (1989) and Wester, *et al.* (1990). These studies are discussed below. Estimates of dermal-soil RAFs can be derived from the results of these studies when combined with data on absorption from investigations using dosing methods similar to the dose-response studies.

Studies

Yang, et al. (1989)

Yang, *et al*. (1989) measured the percutaneous absorption of benzo(a)pyrene (B(a)P) from petroleum crude-fortified soil and from pure petroleum crude oil both in live rats and in *in vitro* studies using excised rat skin (see Table 9). The soil was a loam containing 1.64% organic matter, 46% sand, 36% silt, and 18% clay. The B(a)P-soil mixture was prepared by adding the radiolabelled crude oil in dichloromethane to the soil. The solvent was removed by rotary evaporator. All soils were used within 72 hours of preparation.

Radiolabelled B(a)P (^{3}H-B(a)P) was added at a known concentration for quantification. In the *in vivo* experiments, soil containing B(a)P in crude petroleum or pure crude petroleum containing B(a)P was applied to the dorsal skin of the female Sprague-Dawley rats. In both cases, the dose of B(a)P was 0.01 ug/cm^2. For the crude oil, 90 ug/cm^2 of oil containing 100 ppm B(a)P was applied. For soil, 9 mg/cm^2 of soil containing 1 ppm of B(a)P was applied. The dorsal area was covered with a non-occlusive glass cell to prevent ingestion of the B(a)P by grooming behavior.

Absorption was determined by measuring the radioactivity in the urine and feces once daily and the urine, feces and tissues at 96 hours. Data from five animals were averaged. After 96 hours, cumulative absorption of B(a)P from crude-soaked soil (9.2%) was less than that from the crude alone (35.3%).

In the *in vitro* experiments, dorsal skin was excised from female Sprague-Dawley rats after sacrifice. 350 um skin sections were placed in consoles containing 15 mm diameter Franz diffusion cells. The receptor fluid was an aqueous solution of 6% Volpo-20, a nonionic surfactant. The absorption was measured by analyzing the surfactant containing receptor fluid that bathed the receiving reservoir of the absorption chamber for radiolabelled B(a)P. The receptor fluid was sampled once every 24 hours for four days. Data from five trials were averaged. Again, 96 hour cumulative absorption was greater for B(a)P in oil (38.1%) versus B(a)P in oil-soaked soil (8.4%).

TABLE 9
DERMAL ABSORPTION OF BENZO(a)PYRENE FROM SOIL IN THE RAT
YANG, *et al*. (1989)

Time Point	*In Vivo* Results	*In Vitro* Results
24 Hours[1]	1.1% (0.3)[1,2]	1.5%[4]
48 Hours[1]	3.7% (0.8)[1,2]	3.5%[4]
72 Hours[1]	5.8% (1.0)[1,2]	5.5%[4]
96 Hours[3]	9.2% (1.2)[1,3]	8.4%[4]

[1]Values shown for 48-96 hours are cumulative. Results are the mean for five rats (standard error).
[2] Urine plus feces
[3] Urine plus feces plus tissues.
[4] See Figure 1 of Yang, *et al.* (1989)

Wester, et al. (1990)

Wester, *et al*. (1990) measured the absorption of B(a)P *in vivo* over 24 hours in the monkey using acetone as vehicle or using soil containing B(a)P at the 10 ppm level (see Table 10). The soil used contained 26% sand, 26% clay, and 48% silt. The organic content was not specified. The B(a)P containing soil was prepared by adding the B(a)P in (7:3, v/v) hexane:methylene chloride. The soil was mixed by hand and left open to the air to allow dissipation of the solvent. The B(a)P-soil mixture was not aged before use.

Four female Rhesus monkeys were tested with 40 mg soil/cm^2 applied to the abdominal skin. The skin area was covered with a nonocculusive cover to prevent loss of soil or ingestion of soil by grooming behavior. Percutaneous absorption was measured by comparing the quantity of radiolabel (^{14}C-B(a)P) in the urine following topical application to that following intravenous application. Urine was collected for 24 hours. After 24 hours, all visible soil was collected from the application site. The skin surface was washed with soap and water, and the monkeys were returned to metabolic cages for urine collection for an additional six days. *In vivo*, the absorption was 51.0% for acetone vehicle and 13.2% for soil.

In vitro studies were also carried out with viable human cadaver skin in cells of the flow-through design. Human serum was used as the receptor fluid. Radiolabel was determined in the receptor fluid after 24 hours as well as in the skin after a surface wash with soap and water. The amount of B(a)P that cannot be removed from the skin with a soap and water wash is designated here as "absorbed" for the purposes of RAF derivation. In six experiments with skin from two donors, 23.8% of the B(a)P was absorbed with acetone vehicle. From soil (10 ppm), 1.45% was absorbed in 24 hours.
Roy, et al (1998)

This investigation is worth mention because it utilized soils from sites containing MGP tars. And is the most recent evaluation of dermal absorption. In this paper, the authors

note substantial reduction in the absorption of B(a)P in soils applied to skin in an in vitro diffusion apparatus when compared to organic extracts of the same material. However, these investigators used an excess of B(a)P source in doing these experiments and, as such, are calculating the flux rate of B(a)P under conditions of “infinite source”. Thus, while the absorption reduction is interesting, it cannot be converted to an RAF for risk assessment purposes in that both the dose-response data and the relevant environmental exposure (dermal absorption of PAH on the skin) are likely to be finite sources, that are controlled as much by reduction in avialable PAH as the rate at which the compounds cross the skin. Therefore, this study was not used to estimate RAFs for the dermal absorption exposure route.

RAF Derivation

The fraction absorbed in a 24-hour or 96-hour experiment has little relevance to human risk assessment. Receptors who might touch, walk on, or otherwise contact PAH-containing soil would only realistically be exposed for a period of 6-12 hours at maximum before washing themselves or before the soil would drop off or be rubbed off the skin. The Wester, *et al*. (1990) paper demonstrates that soap and water wash can remove a large amount of the administered dose (53-91%), even after 24 hours. Even more would be removed after only 6-12 hours exposure.

U.S. EPA guidance for dermal risk assessment recognizes that the time period of a dermal experiment is an important factor to consider when evaluating experimental data. U.S. EPA (1992b) has noted: "The experiment should provide absorption estimates over a time corresponding to the time that soil is likely to remain on skin during actual human exposures."

TABLE 10
DERMAL ABSORPTION OF BENZO(a)PYRENE FROM SOIL
WESTER, *et al*. (1990)

Sample	Monkey Skin	Human Skin
1	13.1%[1]	1.01%[3]
2	10.8%[1]	1.52%[3]
3	18.0%[1]	0.61%[3]
4	11.0%[1]	2.21%[3]
5	NA	0.31%[3]
6	NA	3.01%[3]
Mean +/- SD	13.2% +/- 3.4%[2]	1.45% +/- 1.02% [2]

[1]Percentage of applied dose absorbed = (^{14}C urinary excretion for seven days following 24 hour topical application) /(^{14}C urinary excretion following intravenous administration) x 100
[2] Mean +/- Standard Deviation
[3] Fraction of applied dose in the skin plus fraction in receptor fluid.

Accordingly, the data from the Yang, *et al.* (1989) and Wester, *et al.* (1990) experiments should be prorated for a reasonable exposure period, such as 6-12 hours. A health-protective way to do this is to simply assume that absorption is linear over time. The Yang, *et al*. (1989) *in vitro* study showed a linear absorption into rat skin from 24-96 hours, but no data are available for the 0-24 hour period.

In fact, Kao, *et al*. (1985) have shown that the appearance of radiolabel from topically applied benzo(a)pyrene and other chemicals in human, rodent, and other species' skin in the culture medium of their *in vitro* system was exponential, not linear. A distinct time lag is apparent before any absorption occurs. A time lag has also been shown for various chlorophenols in human skin (Roberts, *et al*., 1977; Huq, *et al*., 1986). U.S. EPA (1992b) also recognizes that a time lag may exist: "time is required after initial contact with the skin for such a steady-state to be achieved." Also: "Linear adjustments may not be accurate, since it is unknown how soon steady-state is established and since steady-state conditions may not be maintained throughout the experiment due to mass balance constraints."

Thus, linear adjustments of 24 hour absorption data to estimate absorption over 6-12 hours may overestimate the true absorption, but it is not likely to underestimate absorption. A health-protective approach would be to assume that a relevant absorption period is as high as 8 hours. (U.S. EPA in its recently proposed Hazardous Waste Identification Rule assumes 8 hour exposures.) With this assumption, the Yang, *et al.* (1989) data from the *in vitro* experiment can be adjusted to 0.27% absorption over 8 hours using a linear regression of all four time points. The data from the *in vivo* experiment can be adjusted to 0.8% absorption over 8 hours. The 96 hour data is used in this case, because tissue-bound B(a)P was measured only for this time point. The 8

hour estimated absorption using a linear regression is only 0.01%, and was thus rejected for RAF derivation.

The Wester, *et al*. (1990) data can be adjusted to 4.4% absorption in the *in vivo* monkey experiment over an 8 hour exposure period. Similarly, the 8 hour estimated exposure for the *in vitro* human skin experiment is 0.48%.

For deterministic risk assessments, single estimates of dermal-soil RAFs are needed both for potentially carcinogenic PAHs and for non-carcinogenic PAHs.

Four estimates of the dermal absorption of PAHs from soil were presented: 0.27%, 0.80%, 4.4%, and 0.48%. In addition, 12 estimates of the absorption of PAHs from the dose-response study were presented in Table 1. The average value is 92%. Four RAF estimates are 0.003, 0.009, 0.048, and 0.005. These four RAFs are used to develop the distribution of dermal RAFs for PAHs. The deterministic estimate of the dermal-soil RAF for potentially carcinogenic PAHs is simply the 90th percentile of the four RAFs, 0.03 (calculated from the full distribution of results using @RISK® software and assuming data are normal).

Applicability to Potentially Carcinogenic PAHs

Dermal-soil RAFs have been derived for B(a)P based on four experimental data points with B(a)P. However, risk assessment of PAHs involves the calculation of benzo(a)pyrene-toxic equivalents, which includes the seven PAHs designated as potentially carcinogenic. The following section addresses the applicability of the B(a)P RAF to other potentially carcinogenic PAHs.

Various researchers have investigated the dermal absorption of different PAHs from pure mixtures, such as coal tar, or from solvent vehicles, such as acetone. From these studies, data on the comparative dermal absorption of various pure PAHs are available, but no studies are available on the dermal absorption of various PAHs from a soil matrix.

For instance, Sanders, *et al*. (1984) studied the dermal absorption of B(a)P and dimethylbenz(a)anthracene (DMBA) in Swiss-Webster mice from an acetone vehicle. The dermal absorption was similar for the two PAHs. For instance, at similar dose levels, the amount found in the tissues and excreta 24 hours after dosing was 84% for B(a)P and 82% for DMBA.

Yang and coworkers (Yang, *et al.* 1986a, 1986b) studied dermal absorption of B(a)P and anthracene at similar doses from solvent vehicles in the female Sprague-Dawley rat in both *in vivo* and *in vitro* systems. Absorption was similar for the two PAHs. *In vivo*, absorption after 144 hours was 46.2% for B(a)P and 52.3% for anthracene. *In vitro*, absorption after 144 hours was 49.9% for B(a)P and 55.9% for anthracene.

Ng and coworkers (Ng, *et al.*, 1992) studied dermal absorption of B(a)P and pyrene at similar doses from an acetone vehicle in the hairless guinea pig. Absorption after 24 hours was 73.3% for B(a)P and 93.9% for pyrene. In an *in vitro* experiment, absorption of B(a)P was 67.4% versus 89.9% for pyrene. In another *in vitro* experiment, absorption of B(a)P was 39.8% versus 40.8% for pyrene.

Dankovic and colleagues (Dankovic, *et al.,* 1989) studied the comparative dermal absorption in female CD-1 mice of 12 high molecular weight PAHs isolated from the 800-850 degree (F) complex organic mixture (COM) derived from a coal liquefaction process. Absorption was measured as the half-life of disappearance of the PAH from the mouse skin. The half-life was 5.0 hours for pyrene. For B(a)P, the half-life was 6.7 hours. All other PAH had half-lives similar to B(a)P, including benz(a)anthracene (6.5 hr), chrysene (7.3 hr), and benzo(j/k)fluoranthene (8.1 hr).

VanRooij, *et al.* (1995) studied the dermal absorption in the blood-perfused pig ear of 10 PAHs present in coal tar. The blood-perfused pig ear was chosen as a test system because pig skin resembles human skin morphologically and functionally and because percutaneous absorption rates of various chemicals in pig skin are comparable to the rates seen in human skin.

The absorption after 3.3 hours varied among PAHs. Absorption was greatest for phenanthrene and fluorene. Anthracene, fluoranthene, and pyrene showed similar absorption rates that were roughly ten times less than those for phenanthrene and fluorene. The 4-6 ring PAHs showed substantially lower dermal absorption, which was 100-1000 times less than that seen with phenanthrene and fluorene. It should be noted, however, that the maximum fractional absorption seen, which was with fluorene, was only 0.004% of the applied dose.

Of the potentially carcinogenic PAH studied in the above dermal absorption experiments, B(a)P showed equal or greater dermal absorption. None of these experiments were performed with soil matrices. They all involved applying the PAHs as solutions in organic solvents.

As noted above, dimethylbenz(a)anthracene, benz(a)anthracene, and benzo(b)fluoranthene were absorbed to a degree similar to B(a)P. Chrysene, benzo(k)fluoranthene, indeno[1,2,3-cd]pyrene, and dibenzo(a,h)anthracene were absorbed to a lesser degree than was B(a)P. Accordingly, it is health protective to use dermal-soil RAFs derived for B(a)P for performing a risk assessment of all potentially carcinogenic PAH.

Applicability to Non-Carcinogenic PAHs

Noncarcinogenic PAH with smaller molecular weights, however, were absorbed to a greater degree than was B(a)P in several experiments. Fluorene, phenanthrene, anthracene, fluoranthene, and pyrene were absorbed at rates varying from 1.03 times the B(a)P rate to 92 times the B(a)P rate. Accordingly it may be appropriate to modify upward the dermal-soil RAF derived from studies with B(a)P by the use of an uncertainty factor so that it can be used in the risk assessment of noncarcinogenic PAHs.

However, all of the experiments used coal tar or PAHs in solutions. No information is available on the comparative absorption of different PAHs from soil matrices. It is possible that small molecular weight PAHs in pure form are absorbed through skin to a greater degree than are large molecular weight PAHs, but that these smaller PAHs are also *less* bioavailable in soil matrices than are large PAHs. This could occur if the smaller PAHs more efficiently enter the small pore spaces of the soil matrices than do larger PAHs.

In the absence of appropriately designed experiments for noncarcinogenic PAH RAF derivation, it is difficult to determine a reasonable uncertainty factor. The dermal-soil RAF for noncarcinogenic PAHs may be higher or lower or the same as the dermal-soil RAF for potentially carcinogenic PAHs. The uncertainty factor is defined as a factor of 5. For deterministic risk assessments, the dermal-soil RAF for non-carcinogenic PAHs is 0.17 (i.e., the original four RAF estimates of 0.003, 0.009, 0.048, and 0.005, were each multiplied by 5, and the 90th percentile of the distribution of this data set was used as the point estimate).

3.4 Summary

Oral-Soil RAFs, potentially carcinogenic PAH

The 90th percentile PAH RAF value of 0.53 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of PAH RAF values will be used in the probabilistic risk assessment. Figure 1 displays the cumulative probability distribution of RAFs for oral exposure to potentially carcinogenic PAHs in soil.

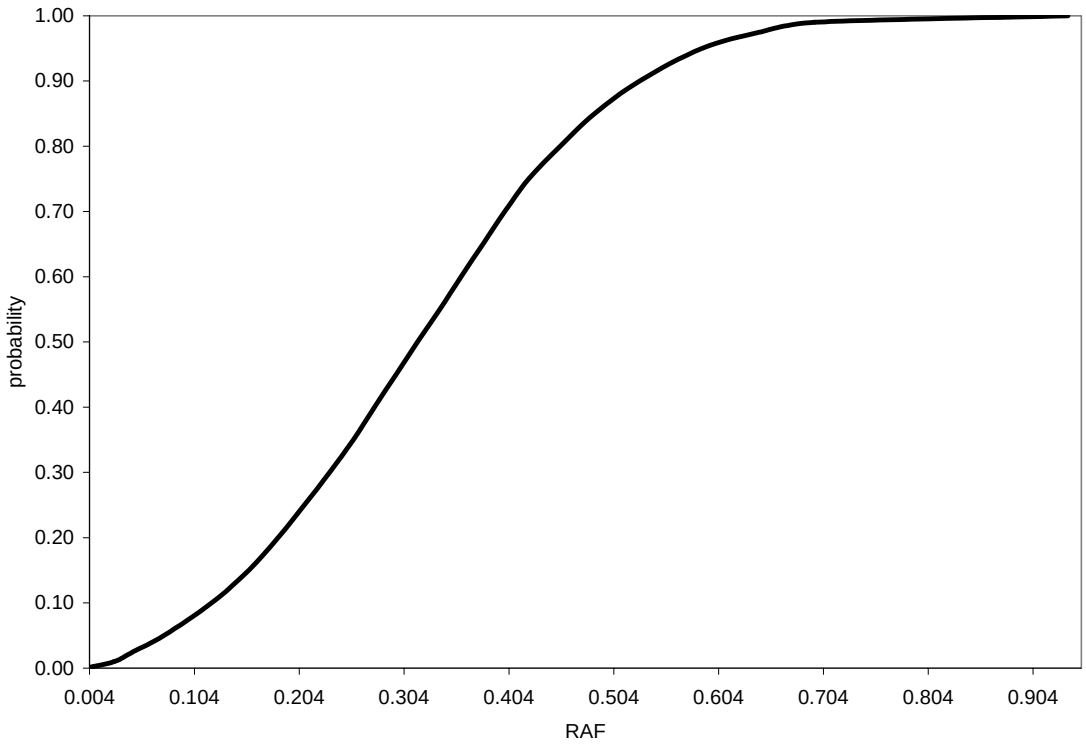

FIGURE 1
DISTRIBUTION OF ORAL-SOIL RAFs FOR POTENTIALLY CARCINOGENIC PAHs

Oral-Soil RAFs, non-carcinogenic PAH:
The 90th percentile PAH RAF value of 0.78 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of PAH RAF values will be used in the probabilistic risk assessment. Figure 2 displays the cumulative probability distribution of RAFs for oral exposure to non-carcinogenic PAHs in soil.

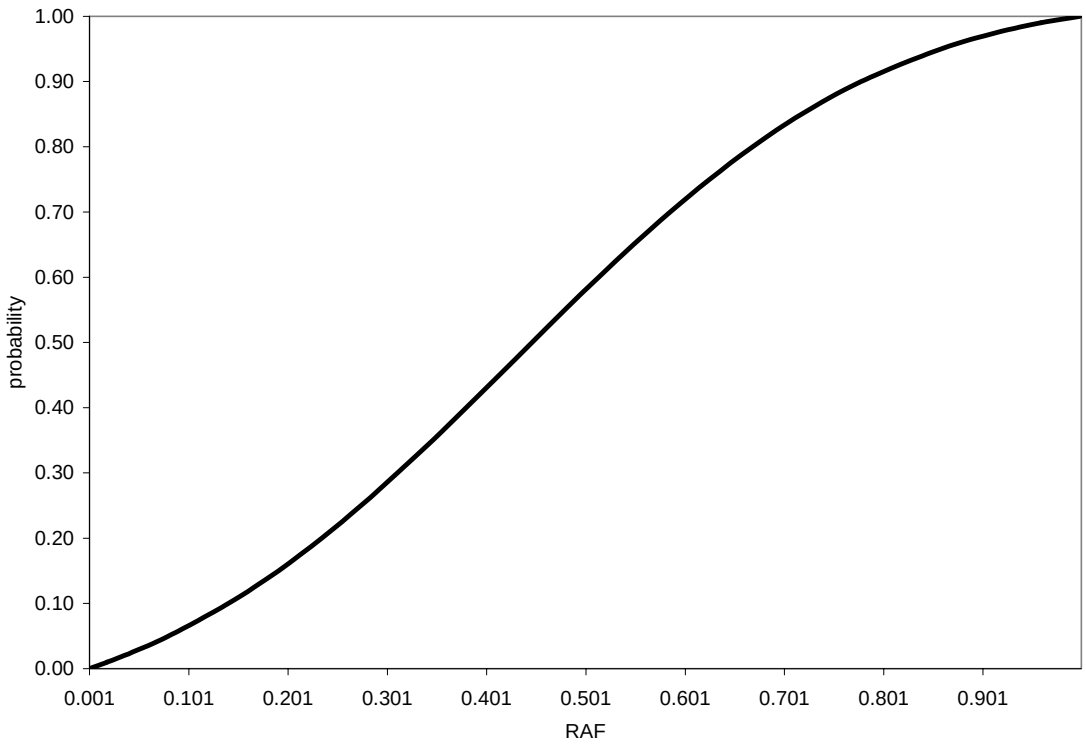

FIGURE 2
DISTRIBUTION OF ORAL-SOIL RAFs FOR NON-CARCINOGENIC PAHs

Dermal-Soil RAFs, potentially carcinogenic PAH:
The 90th percentile PAH RAF value of 0.03 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of PAH RAF values will be used in the probabilistic risk assessment. Figure 3 displays the cumulative probability distribution of RAFs for dermal exposure to potentially carcinogenic PAHs in soil.

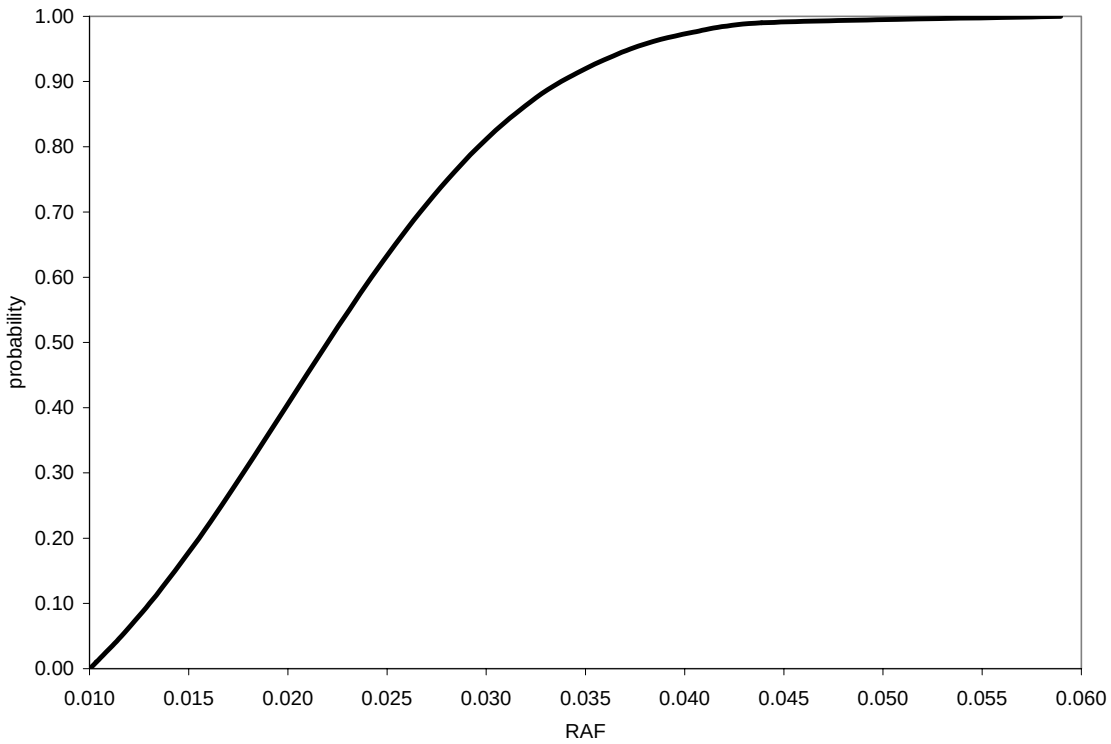

FIGURE 3
DISTRIBUTION OF DERMAL-SOIL RAFs FOR POTENTIALLY CARCINOGENIC PAHs

Dermal-Soil RAFs, non-carcinogenic PAH:
The 90th percentile PAH RAF value of 0.17 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of PAH RAF values will be used in the probabilistic risk assessment. Figure 4 displays the cumulative probability distribution of RAFs for dermal exposure to non-carcinogenic PAHs in soil.

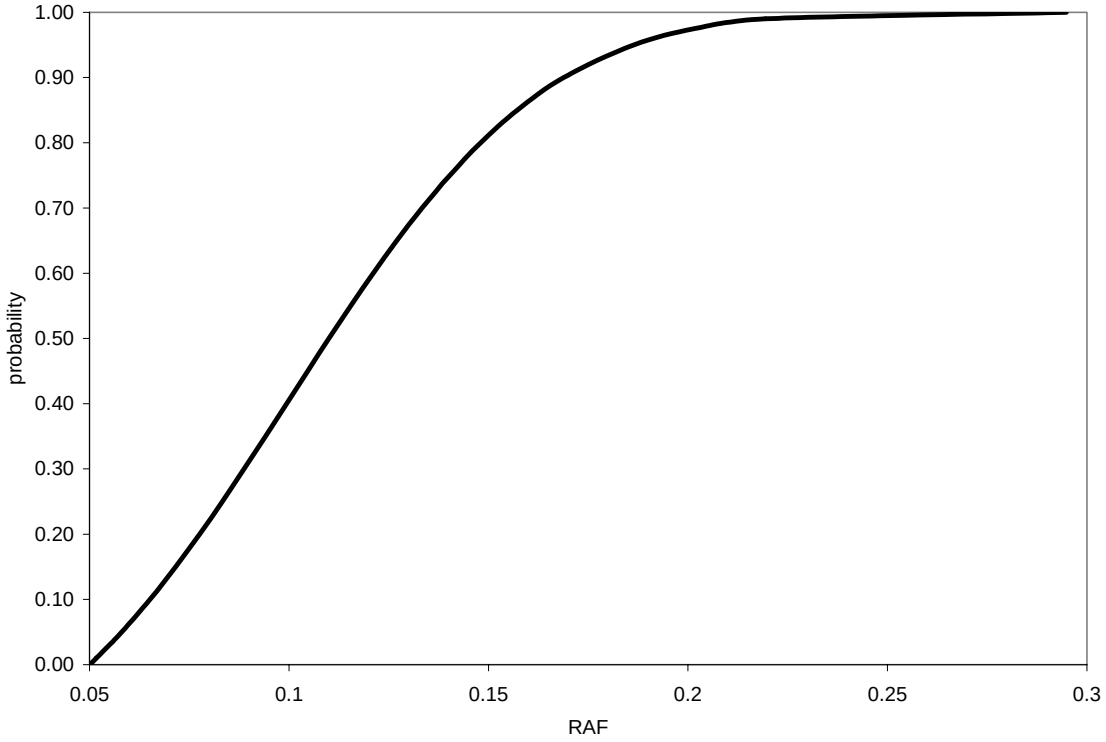

FIGURE 4
DISTRIBUTION OF DERMAL-SOIL RAFs FOR NON-CARCINOGENIC PAHs

4.0 TCDD-TEQ

4.1 Absorption in Dose-Response Studies

The oral CSF of 1.5 x 10^5 $(mg/kg/day)^{-1}$ for 2,3,7,8-TCDD is based on a dietary study in rats (Kociba, *et al*., 1978). The diet was prepared by mixing (30 minutes) an acetone solution of TCDD with laboratory chow. The acetone was evaporated yielding a TCDD/diet mixture. TCDD concentration was 0.02 - 2 ppb (0.001 - 0.1 ug/kg/da). No absorption information is given in the Kociba, *et al*. (1978) study.

In a study by Fries and Marrow (1975), however, rats were given TCDD in their diet continuously for 42 days. The total observation period of the experiment was 70 days. Diets were prepared in a similar manner to that used by Kociba, *et al*. (1978). Laboratory chow was mixed with a benzene solution of TCDD and the benzene was evaporated. Two dose levels were used, 7 ppb and 20 ppb. Absorption was reported to be 50-60%. For the purposes of RAF derivation, 55% was used as the observed absorption efficiency.

In several other studies, TCDD absorption was measured using vegetable oil and solvent vehicles. Gastrointestinal absorption from oil or solvent has been reported to range from 70% to >87%. AMEC assumes that 80% absorption occurred in corn oil studies as noted below. It is generally accepted that absorption for these vehicles is more efficient than absorption from diet. Thus, the results of the single dietary experiment (55%) will be used as an estimate of the absorption from the dietary dose-response study (Kociba, *et al*., 1978).

4.2 RAF for Oral Exposure to Soil

Several studies were identified that compared TCDD absorption from soil to either dirt, oil vehicle, or alcohol vehicle. These studies are relevant for derivation of the RAF. In the first study, Van den Berg and co-workers (1983) administered PCDDs and PCDFs from fly-ash and fly-ash extract to male Wistar rats as a dietary constituent. The fly-ash from a municipal incinerator in the Netherlands was chemically characterized and used.

Rats were fed treated diets for 19 days. The levels of PCDD and PCDF isomers in the liver at the end of the experiment were used as measures of absorption. By comparing fly-ash and fly-ash extract in a single experiment, the congener composition of the test material was held constant. Treatment of test diets with a PCDD/PCDF containing extract and evaporating the solvent is identical to the treatment of diets used by Kociba (1978) in the dose-response study. Thus, a comparison of the liver retention of PCDD/PCDF isomers with fly-ash-treated diet and extract-treated diet directly yields an estimate of the RAF (oral-fly-ash). AMEC assumed that the RAF (oral-soil) equals the oral fly-ash RAF.

The authors measured the liver levels of six isomer groups at the end of the experiment. From these data, AMEC calculated the fly-ash/extract ratio for each isomer group separately:

Liver concentration (ng/g)

	tetra-CDD	tetra-CDF	penta-CDD	penta-CDF	hexa-CDD	hexa-CDF
Fly-ash + diet (n=2)	0.8	3.5	2.7	11.0	5.2	13.6
Extract + diet (n=4)	1.9	14.5	18.9	50.0	47.7	83.3
Fly-ash/extract	0.42	0.24	0.14	0.22	0.11	0.16

The average fly-ash/extract ratio for all six isomer groups is 0.22. This is a direct measure of the degree to which adsorption to fly-ash decreases the bioavailability of PCDDs/PCDFs compared to pure compounds mixed with dietary constituents. Thus, the RAF (oral-fly-ash) is 0.22. Because fly-ash is a major source of TCDD equivalents in the environment, this data is relevant to risk assessment. Thus, one estimate of the RAF (oral-soil) is 0.22.

Several other studies are available in which absorption of TCDD from soil was compared to oil or alcohol vehicles. Results from these studies are useful if an independent estimate is available for gastrointestinal absorption of TCDD from the relevant vehicle.

McConnell, *et al*. (1984) investigated absorption in guinea pigs using soil from Missouri that was contaminated with TCDD. One or 3 ug/kg of TCDD was administered orally either in a corn oil vehicle or as a soil suspension. After a single dose of TCDD, the animals were observed for 30 days. The TCDD content of the liver was determined at 30 days or at the time of death of the animal. No detectible TCDD was observed in livers of animals dosed with 1 ug/kg of TCDD in either Times Beach or Minker Stout soil. At the higher dose level, TCDD was detected in animal livers with all groups. The liver levels in animals that survived for 30 days was lower than the levels in animals that died before completion of the experiment. Accordingly, the ratio of absorption from soil to absorption from corn oil for the latter group is higher: 0.24 for Times Beach and 0.15 for Minker Stout. The average ratio is 0.20.

It is well-documented that absorption of TCDD from vegetable oil vehicles exceeds the absorption from dietary constituents (U.S. EPA, 1985). As an estimate of the absorption of TCDD from vegetable oils, AMEC has averaged the results from the following four studies:

1. Rose, *et al*. (1976); rat; 1 μg/kg single dose; acetone/corn oil (1:25); 84%.
2. Rose, *et al*. (1976); rat; 0.1 or 1.0 μg/kg/da; acetone/corn oil (1:25); 5 days/week x 7 weeks; 86%.
3. Piper, *et al.* (1973); rat; 50 μg/kg single dose; acetone/corn oil (1:9); 70%.
4. Olson, *et al*. (1980); hamster; 650 μg/kg; olive oil; 74%.
5. Poiger and Schlatter (1986); human; 1 ng/kg; single dose; corn oil; >87%.

The average of these values is 80%. Thus, the RAF (oral-soil) using the McConnell, *et al*. (1984) data is defined as follows:

$$= (0.20) \times (0.8) / (0.55) = 0.29$$

This indirectly derived RAF (oral-soil) based on McConnell, *et al*. (1984) is in close

agreement with the value of 0.22 directly demonstrated by Van den Berg, *et al*. (1983).

In a similar experiment, Poiger and Schlatter (1980) studied the effects of soil adsorption on the bioavailability of TCDD in Sprague-Dawley rats. After oral administration of 15 ng radiolabelled TCDD using 50% ethanol as a vehicle, 37% of the dose was detected in the liver 24 hours later. When the constituent (21-22 ng) was administered as an aqueous suspension of soil particles (37% w/w) that had been in contact with the TCDD for 8 days, the fraction of the administered dose that was found in the liver 24 hours later was 16%. From these data, the ratio of TCDD absorption from soil compared to an aqueous ethanol vehicle is 0.43.

There are no estimates available for absorption of TCDD from 50% ethanol vehicles. To derive an estimate of the RAF (oral-soil) from the Poiger and Schlatter data, AMEC assumed that the absorption of TCDD from 50% ethanol is the same as the average absorption reported from corn oil, olive oil, 1:25 acetone/corn oil, and 1:9 acetone/corn oil. The RAF (oral-soil) is derived as above: (0.43) x (0.8)/(0.55) = 0.63.

Similar studies have also been performed in rabbits by Bonaccorsi, *et al*. (1984). Levels of TCDD in the liver 7 days after an oral dose of TCDD either in alcohol or in soil from Seveso, Italy were compared. The ratio of TCDD absorption from soil relative to alcohol vehicle was 0.32 in this study. As above, AMEC assumed that the absorption of TCDD from alcohol vehicle is 80%. Thus, the RAF (oral-soil) is (0.32) x (0.80)/(0.55) = 0.47.

In addition, Lucier, *et al*. (1986) fed female Sprague-Dawley rats TCDD in either corn oil or contaminated soil from the Minker site in Missouri. Eight doses ranging from 0.015 to 5 ug TCDD/kg were administered. Soil was passed through a 60 gauge sieve before use. Doses of TCDD in corn oil or soil were administered by gavage. Six days after treatment, the animals were sacrificed and the TCDD content in the livers was measured.

TCDD-CORN OIL		**TCDD-SOIL**	
DOSE LEVEL	**CONC. IN LIVER**	**DOSE LEVEL**	**CONC. IN LIVER**
5 ug/kg	40.8 ppb	5.5 ug/kg	20.3 ppb
1 ug/kg	7.6 ppb	1.1 ug/kg	1.8 ppb

CONCENTRATIONS NORMALIZED TO CORN OIL DOSE LEVELS

DOSE LEVEL	CORN OIL CONC. IN LIVER	SOIL CONC. IN LIVER	SOIL/CORN OIL
5 ug/kg	40.8 ppb	18.5 ppb	0.45
1 ug/kg	7.6 ppb	1.64 ppb	0.22

The average of the two soil-to-corn oil ratios is 0.34. As above, AMEC assumed that the absorption of TCDD from a corn oil vehicle is 80%. Thus, the RAF (oral-soil) is (0.34) x (0.80) / (0.55) = 0.49.

Shu, *et al*. (1988) measured bioavailability of TCDD in the rat. Three soil samples were collected from areas of Times Beach. TCDD concentrations were 723 ppb, 28.6 ppb, and 1.9 ppb. Male Sprague-Dawley rats were administered TCDD by gavage. 24 hours after dosing, the rats were sacrificed and the levels of TCDD were measured in the livers. Six groups of animals, containing four rats per group were dosed by gavage with TCDD in soil at 3.2, 7.0, 37, 40, 175, and 1450 ng/kg of TCDD. Control rats were dosed with TCDD dissolved in corn oil at 2.0, 8.5, 32, 40, 200, and 1180 ng/kg.

The concentrations of TCDD in the livers of the corn oil groups were adjusted to 100% bioavailability assuming, based on Piper, *et al*., (1973), that absorption of TCDD from corn oil is 70%. Then, the liver concentrations from the soil groups were compared to the adjusted liver concentrations from the corn oil groups to derive estimates of bioavailability. The values reported by Shu, *et al*. (1988) are thus estimates of absolute bioavailability. The values varied from 37% to 49% and were not dose-dependent. The average absolute bioavailability was 43%.

The bioavailability relative to the dose-response study is the RAF (oral-soil). This is calculated as follows: (0.43) x (100%)/(55%) = 0.78.

Umbreit, *et al*. (1987) fed soil containing TCDD from Times Beach Missouri and Newark, NJ to male and female rats as suspensions by gavage either for one or for four consecutive days. Total TCDD doses administered to rats were either 10 ug TCDD/kg or 40 ug TCDD/kg. Rats were sacrificed after the fnal dose, autopsied, and hepatic microsomal fractions were collected. Aryl hydrocarbon hydroxylase (AHH) levels were determined in the microsomes. In addition, the same dose of TCDD was added to clean soil in acetone and used immediately as a control. Each treatment group had four animals. The ratio of AHH activity in the aged soils to the AHH activity in the freshly prepared soil is a measure of relative bioavailability. The ratios for the four experiments were 0.35, 0.46, 0.56, and 0.52. The average of these four ratios, 0.47, is an estimate of the RAF (oral-soil).

Umbreit, *et al*. (1986) fed soil containing TCDD from two sites in Newark, NJ to guinea pigs and measured the TCDD in their livers 60 days after dosing. The authors estimated that the bioavailability was 0.5% in one soil and 21.3% in the second soil. The

average bioavailability is 0.11. AMEC assumes that these values are estimates of absolute bioavailability. The bioavailability relative to the dose-response study is the RAF (oral-soil). This is calculated as follows: (0.11) x (100%)/(55%) = 0.20.

Wittsiepe, *et al*. (2007) studied the oral bioavailability of seventeen 2,3,7,8-chlorosubstituted dioxin/furan congeners from soil in minipigs. The total PCDD/F concentration in soil was 5.3 μg TEq/kg. Bioavailability of PCDD/F from soil was calculated by examining the retention of PCDD/F congeners in liver, adipose tissue, muscle, brain, and blood. Based on the concentrations retained in the above tissues, the bioavailability of individual PCDD/F congeners from soil ranged from 0.0064 to 0.219, with a mean of 0.091. On a toxic equivalents basis, the bioavailability of PCDD/F from soil was determined to be 0.138. Because human health risk assessments are performed for 2,3,7,8-TCDD TEQ, the value normalized to 2,3,7,8-TCDD toxic equilvalents is appropriate for Table 11.

The following table summarizes all of the RAF (oral-soil) estimates that are discussed above. The average of all eight estimates is 0.40.

TABLE 11
ORAL-SOIL RAFS FOR 2,3,7,8-TCDD

SOURCE	ESTIMATE FOR ORAL-SOIL RAF
Poiger and Schlatter (1980)	0.63
Van den Berg, *et al*. (1983)	0.22
McConnell, *et al*. (1984)	0.29
Bonaccorsi, *et al*. (1984)	0.47
Lucier, *et al*. (1986)	0.49
Umbreit, *et al*. (1986)	0.20
Shu, *et al*. (1988)	0.78
Wittsiepe, *et al*. (2007)	0.138

The 90th percentile of the eight estimates of the RAF (oral-soil) is 0.50 (calculated from the full distribution of results using @RISK® software and assuming data are lognormal). This value is more health-protective than the bioavailability factor of 30% used in the Center for Disease Control's risk assessment of TCDD in soil (Kimbrough, *et al*. 1985). Thus, the RAF (oral-soil) for the deterministic assessment is 0.50.

4.3 RAF for Dermal Exposure to Soil

To derive the RAF (dermal-soil) one needs a value for the efficiency of absorption of soil-bound TCDD through human skin and an estimate of the absorption efficiency from dietary constituents in the Kociba study. As discussed above, the gastrointestinal absorption of TCDD by rats from diet was found to be 55% by Fries and Marrow (1975). Several studies have been performed to determine such absorption of TCDD from various matrices. These will be used in the RAF derivation.

Roy, *et al*. (1990) measured the dermal bioavailability of neat 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD) and TCDD adsorbed on soils in an EPA-funded study. Parallel experiments were carried out with female Sprague-Dawley rats, in vivo and in vitro, and with human skin specimens, in vitro. Adsorption of TCDD on low organic soil (0.77% organic matter) at 1 ppm dramatically reduced the dermal bioavailability of TCDD. The soil application rate was 10 mg/cm^2. The fraction of applied dose absorbed was decreased by a factor of five to ten compared to experiments with neat TCDD at an equivalent dose. Penetration of low organic soil-sorbed TCDD through human skin was approximately three times less than for rat skin.

The RAF (dermal-soil) was calculated several ways for TCDD. In all cases, the RAF is defined as (absorption from soil)/(absorption from diet). AMEC assumes that a relevant exposure time for soil contact was several hours. To be health-protective, however, 8-hour exposures are assumed for purposes of deriving the RAF.

Roy and co-workers found that 33% of 10 ng/cm^2 of TCDD (neat) was dermally absorbed by the rat over 8 hours. This was determined *in vivo*. In addition, after 96 hours 77.4% was absorbed in an *in vivo* experiment, and 76% was absorbed in an *in vitro* experiment (average 76.5%). Thus, 8-hour absorption was 43% of the 96-hour absorption. When the same amount of TCDD was applied to the rat in low organic soil, 16.3% was absorbed in 96 hours *in vivo* and 7.7% was absorbed in vitro (average 12.0%). The TCDD concentration in soil (1 ppm) and the soil contact rate (10 mg/cm^2) are both relevant for use in risk assessment. When the same dose in low organic soil was applied to human skin *in vitro*, 2.4% was absorbed after 96 hours. The same dose was also applied in high organic soil to rat skin *in vitro*, and absorption after 96 hours was 1.0%.

First, AMEC derived a RAF (dermal-soil) from the in vitro human skin experiment. Here, the absorption of TCDD from low organic soil over 96 hours was 2.4%. Because there are no data for 8-hour exposures, AMEC assumes that the amount absorbed in 8 hours was 43% of the amount absorbed in 96 hours. The RAF, then, is (2.4%)(0.43)/(55%) = 0.02.

Second, AMEC derived an RAF (dermal-soil) from both the in vivo and in vitro rat experiments using low organic soil. At 96 hours, the absorption of TCDD from low organic soil was 16.3% *in vivo* and 7.7% *in vitro*. AMEC assumes tht the amount absorbed in 8 hours was 43% of the amount absorbed in 96 hours. Thus, the *in vivo* rat RAF is (16.3%)(0.43)/(55%)= 0.13. The *in vitro* rat RAF is (7.7%)(0.43)/(55%) = 0.06.

Third, AMEC derived an RAF (dermal-soil) frrom the *in vitro* rat experiment using high organic soil. At 96 hours, the absorption of TCDD from high organic soil was 1.0%. As

above, the RAF is (1.05%)(0.43)/(55%)= 0.01.

In addition to the recent study of Roy, *et al*. (1990), a study by Poiger and Schlatter (1980) has been widely used by risk assessors. Poiger and Schlatter (1980) dosed hairless rats (Naked ex Back-Cross and Holzman strain) with radiolabelled TCDD. The fraction of the administered dose in the liver after 24 hours was compared for two situations:

1. 26 ng pure TCDD per 3 cm^2 of skin; and
2. 26, 350 or 1,300 mg TCDD in a soil/water paste of 75 mg per 3-4 cm^2 of skin (50 mg dry soil/3-4 cm^2).

The fraction of the dose in the liver after administration of the soil paste was near the detection limit for the low dose and the same for the two higher dose levels. AMEC averaged the values and compared them to the percent dose in the liver following administration of pure TCDD to determine the ratio: (absorption from soil, 24 hours)/(absorption neat, 24 hours) = (1.32%)/(14.8%) = 0.09. However, one cannot obtain an estimate of the actual fraction of a dose of pure TCDD that is absorbed in 8 hours from this experiment. Thus, the estimate of the dermal absorption of pure TCDD over 8 hours provided by the Roy, *et al*. (1990) study was used in RAF derivation:

RAF (dermal-soil) = [(0.09) x (0.33)]/(0.55) = 0.05

In addition, another estimate of 8-hour dermal absorption of pure TCDD was used. Banks and Birnbaum (1990) measured absorption of 3 ug radiolabelled TCDD/cm^2 in 10-week old male Fischer 344 rats at various time points up to 48 hours. Absorption was linear to 48 hours with a rate of 0.5 ng/hr. Predicted absorption at 8 hours was 6.6% (actual data point at 8 hours was 5.5%). Thus, the estimate of the dermal absorption of pure TCDD over 8 hours provided by the Banks and Birnbaum (1990) study was used in RAF derivation:

RAF (dermal-soil) = [(0.09) x (0.066)]/(0.55) = 0.01

Shu, *et al*. (1988) also measured the dermal absorption of TCDD from a soil matrix in male Sprague-Dawley rats. Soil samples were obtained from Verona and Times Beach, MO. The soil was air-dired and sieved through 10-, 20-, and 40-mesh screens. Laboratory samples were prepared by adding tritiated TCDD in hexane:methylene chloride (7:3, v:v) at concentrations of 10 ppb and 100 ppb. The actual environmental oil sample was a sample from Times Beach, MO containing 123 ppb TCDD. TCDD-containing soil was administered onto the backs of the rats (0.25 g soil/12 cm^2). A nonocclusive cover was placed over the area. The dose remained in contact with the skin for 24 hours. After 48 hours, the animals were sacrificed and the livers were analyzed for TCDD levels.

The level of TCDD in the liver of rats given soil-bound TCDD dermally was compared to the levels of TCDD in the livers of rats given the TCDD orally dissolved in corn oil, after normalizing the corn oil data to account for the absorption of 70% as discussed in Shu, *et al*. (1988). This ratio provides an estimate of the bioavailability relative to corn oil gavage. The RAF (dermal-soil) then must be derived which compares the bioavailability to the dose-response study, which was a dietary feeding study.

The data from 24 hour dosing studies were used, because the study provided no basis for estimating the absorption at 8 hours. In fact, the absorption at 4 hours was found to be 60% of the absorption seen at 24 hours, indicating that dermal penetration was not linear in this experiment. Accordingly, AMEC assumes that 100% of the absorption measured at 24 hours had, in fact, occurred by 8 hours. This assumption is health-protective.

TCDD CONCENTRATION (ppb)	**ADMINISTERED DOSE IN LIVER RELATIVE TO CORN OIL GAVAGE**
10 ppb (laboratory sample)	1.14%
100 ppb (laboratory sample)	1.5%
123 ppb (Times Beach environmental sample)	1.6%

The estimates of the dermal-soil RAF are derived as follows:

(1.14%)/(55%) = 0.02
(1.5%)/(55%) = 0.03
(1.6%)/(55%) = 0.03

In conclusion, AMEC has derived nine estimates of the RAF (dermal-soil). These estimates agree well:

1. Roy, *et al*. (1990), human, *in vitro*; RAF = 0.02.
2. Roy, *et al*. (1990), rat, *in vivo* (low organic soil); RAF = 0.13.
3. Roy, *et al*. (1990), rat, *in vitro* (high organic soil); Banks and Birnbaum (1990), rat, in vivo, RAF = 0.01.
4. Roy, *et al*. (1990), rat, *in vitro* (low organic soil); RAF= 0.06.
5. Poiger and Schlatter (1980), rat, *in vivo*; Roy et al. (1990), rat, in vivo; RAF= 0.05.
6. Poiger and Schlatter (1980), rat, *in vivo*; Banks and Birnbaum (1990), rat, in vivo; RAF = 0.01.
7. Shu, *et al*. (1988), rat, *in vivo* (10 ppb); RAF = 0.02.
8. Shu, *et al*. (1988), rat, *in vivo* (100 ppb); RAF = 0.03.
9. Shu, *et al*. (1988), rat, *in vivo* (123 ppb); RAF = 0.03.

AMEC uses the 90th percentile of these nine estimates as the RAF (dermal-soil) for the deterministic assessment = 0.08 (calculated from the full distribution of results using @RISK® software and assuming data are exponential).

4.4 Summary

<u>Oral-Soil RAFs, Dioxins:</u>
The 90th percentile dioxin RAF value of 0.50 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of dioxin RAF values will be used in the probabilistic risk assessment. Figure 5 displays the cumulative probability distribution of RAFs for oral exposure to dioxins in soil.

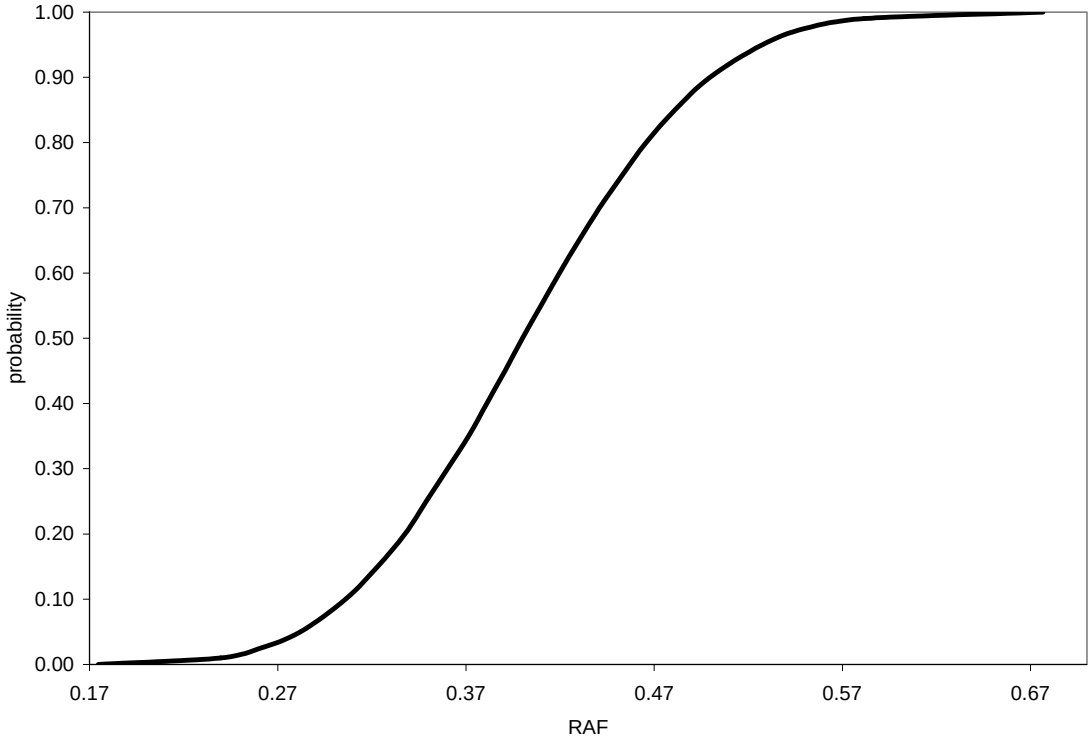

FIGURE 5
DISTRIBUTION OF ORAL-SOIL RAFs FOR DIOXIN

Dermal-Soil RAFs, Dioxins:
The 90th percentile dioxin RAF value of 0.08 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of dioxin RAF values will be used in the probabilistic risk assessment. Figure 6 displays the cumulative probability distribution of RAFs for dermal exposure to dioxins in soil.

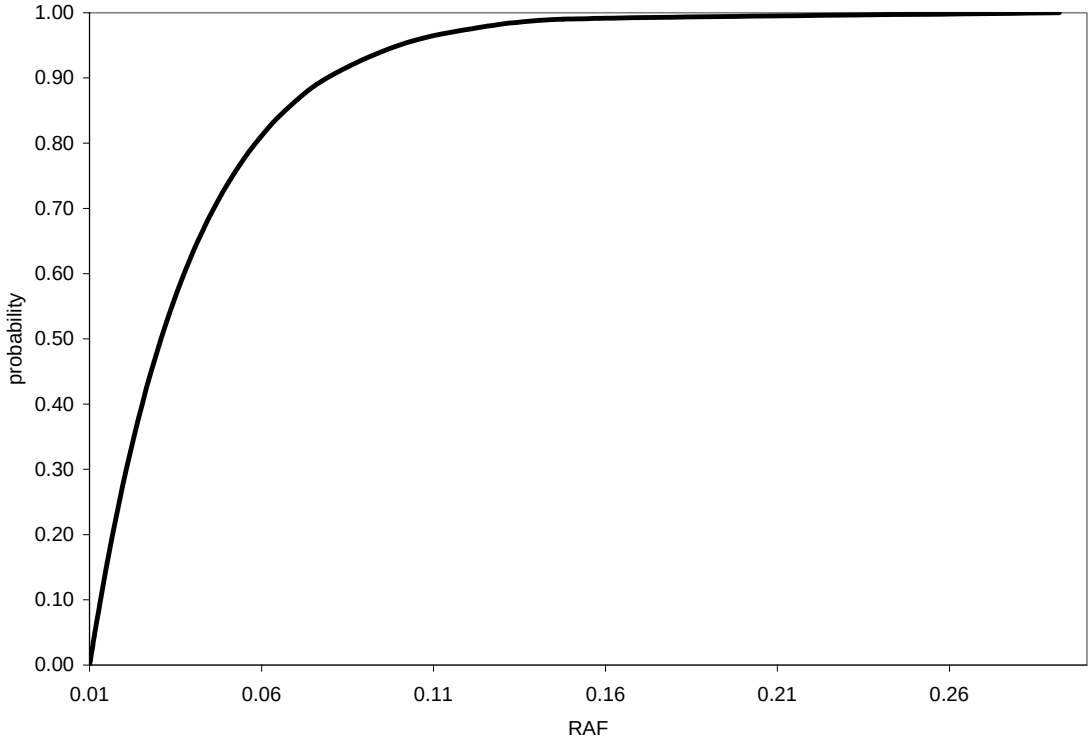

FIGURE 6
DISTRIBUTION OF DERMAL-SOIL RAFs FOR DIOXIN

5.0 Arsenic

The oral reference dose for noncarcinogenic effects of arsenic is 3E-04 mg/kg-day, and the oral cancer slope factor for carcinogenic effects is 1.5 per mg/kg-day (IRIS-U.S. EPA, 2001). Both values are based on epidemiological studies that characterized health effects in a large population of Taiwanese who consumed drinking water containing arsenic. The exact form of the ingested arsenic is unknown.

5.1 Absorption in Dose-Response Studies

The relevant dose-response study characterized health effects in a large population of Taiwanese who consumed drinking water containing arsenic. Several studies investigating the absorption of arsenic have been performed in humans and various animal species. Human studies are sufficiently extensive to strongly suggest that close to 100% of soluble inorganic arsenic in water is absorbed from the gastrointestinal tract. These human studies are reviewed in detail here.

One direct indication of absorption of an orally administered dose of a chemical is its urinary excretion. Several studies show that urinary excretion can account for the majority of an orally administered dose of arsenic. Buchet, *et al*. (1981a) administered aqueous sodium arsenite (NaAsO2) as a single dose to three human volunteers. An average of 45% of the dose was excreted in the urine in four days. In a second study (Buchet, *et al*., 1981b), four individuals given 125, 250, 500, or 1000 Ug As/day orally for five days excreted 54, 73, 74, and 64% of the dose in urine, respectively, over 14 days. The average urinary excretion of arsenic for the four subjects was 66% of the administered dose. Crecelius (1977) reports that approximately 50% and 80% of orally administered aqueous arsenic was excreted in urine within 61 hours by a single individual in two experiments. The results of these studies represent the minimum amount of arsenic absorbed since the balance of the dose was not accounted for.

Data for human fecal excretion of arsenic do exist. Pomroy, *et al*. (1980) gave 6 male subjects radiolabelled arsenic acid ($[^{74}As]H_3AsO_4$) in gelatin capsules followed by a glass of water. The presence of arsenic in the body, urine, and feces was measured using a whole body radiation counter. The authors report that for the six subjects the average total excretion over 7 days was 6.1$\pm$2.8% in feces. It is not possible to determine how much of this arsenic was first absorbed and then excreted. The total recovery of arsenic (urine plus feces) was 68.4$\pm$4.0% of the single oral dose. The remaining arsenic was reported to be present in the body tissues; virtually the entire dose could be accounted for. This suggests a minimum absorption of 94% (100% - 6%) of orally ingested arsenic.

A study by Bettley and O'Shea (1975) also reports excretion of arsenic in both urine and feces. Three subjects were exposed to 8.52 mg As (as 1.25 ml of Liq. Arsenicalis B.P.) in three portions 8 hours apart on one day. They found that at most 3.5% of the dose was excreted in feces over ten days. This suggests a minimum absorption of 96%. Urinary excretion averaged 52$\pm$4% of the exposure dose over 10 days (n=3). The remaining half of the dose was unaccounted for, although small amounts of arsenic were found in blood and hair.

In the Coulson study (Coulson, *et al*., 1935), results from two humans each ingesting two forms of arsenic are reported. Less than 5% of an oral dose was excreted in feces whether

the arsenic was taken as arsenic trioxide (As_2O_3) or as natural arsenic present in shrimp. The remainder of the dose, more than 95%, was recovered in urine in three experiments where total recoveries ranged from 74 to 115%. Based on the fecal excretion data from this study, it can be estimated that at least 95% of the ingested arsenic was absorbed. The fecal excretion data are consistent with those of Pomroy, *et al*. (1980) and Bettley and O'Shea (1975).

Fecal excretion data from oral studies provide a minimum estimate of absorption, because it cannot be determined how much of the dose was first absorbed and then excreted into the feces. However, a study in humans injected intravenously with arsenic suggests that absorbed arsenic may be excreted, presumably from bile, into the feces. Mealy, *et al*. (1959) administered radiolabelled arsenic by intravenous injection. Between 57% and 90% of the injected dose was recovered in urine in 10 days. Fecal excretion accounted for 1.3% of the dose after seventeen days in one individual. A second subject excreted 0.2% of the intravenous dose into the feces in one week. Both results indicate some excretion of arsenic into the feces. Virtually all of the remaining dose was recovered in the urine. Biliary excretion of arsenic has been demonstrated in rats, rabbits, and dogs (Klaassen, 1974; Gregus and Klaassen, 1986). This indicates that a portion of the arsenic found in feces in studies using oral dosing may have been first absorbed and then excreted.

The urinary excretion data from the oral studies discussed above provide minimum estimates of arsenic absorption ranging from 45% to 95%. The fecal excretion data suggest that, at a minimum, 95-96% of an orally administered dose of arsenic is absorbed. The study of intravenously administered arsenic suggest that biliary excretion can occur. Therefore, it can conservatively be concluded from the above studies that virtually 100% of an orally administered dose of soluble inorganic arsenic can be absorbed in humans.

5.2 RAF for Oral Exposure to Soil

The oral-soil RAF for arsenic is defined as: (absorption of arsenic in humans from ingested soil) / (absorption of arsenic in humans in the epidemiological study from ingested water). There are many forms of inorganic arsenic, and these have widely varying solubilities. While it is appropriate to assume that arsenic present in water would be a soluble form of arsenic, this is not necessarily the case for arsenic present in soil or ash. Arsenic present in soils can either be in a relatively insoluble mineral form, such as would be expected in slags, mine tailings, and ash; or, the arsenic can be present in a more soluble form such as might be present at hazardous waste sites where arsenic salts were either disposed of or accidentally released. Even soluble species, however, become bound tightly to soils after years of weathering.

A number of RAFs for oral exposure to arsenic in soil are available in the literature. Roberts, *et al*. (2002), however, has identified an RAF specifically for exposure to soil from sites in Florida, including a wood treatment site in Gainesville, Florida. Therefore, this RAF was given precedent in the deterministic assessment.

Roberts, et al. (2002) Study

Roberts, *et al*. (2002) measured arsenic bioavailability from soils affected by releases of soluble arsenic salts in Cebus apella monkeys in a study for the Florida Department of Environmental Protection. Soil samples were taken from five sites with arsenic

contaminated soil from different sources, but all from arsenical salts: (1) electrical substation, (2) cattle dip site, (3) pesticide site #1, (4) wood treatment site, and (5) pesticide site #2. Relative bioavailability was assessed based on urinary excretion following an oral dose in solution. Relative bioavailability for the five sites was: (1) 0.146 +/ 0.05, (2) 0.247 +/- 0.03, (3) 0.107 +/- 0.05, (4) 0.163 +/- 0.07, and (5) 0.17 +/- 0.10. The mean of these five soil types was 0.17. Relative bioavailability of the soil from the wood treatment site was 0.16.

Summary

The RAF of 0.16 for soil from a wood treatment site in Florida (Roberts, *et al*. 2002) is directly relevant to the risk assessment of a wood treating site in Gainesville, Florida. Thus, the 0.16 value will be used for the Gainesville risk assessment for the deterministic assessment. The probabilistic assessment will employ a distribution of RAFs based upon the results of the Roberts, *et al*. (2002) study.

5.3 RAF for Dermal Exposure to Soil

The RAF (dermal-soil) for this chemical is defined as: (absorption in humans from dermal contact with soil) / (absorption of arsenic in humans in the epidemiological study from ingested water). The RAF (dermal-soil) of 0.009 is derived below.

To derive the RAF (dermal-soil), AMEC uses the estimates of the fractional dermal absorption of arsenic from soil reported by Wester, *et al*. (1993). Wester, *et al*. (1993) measured the skin uptake of soluble arsenic (H_3AsO_4) from soil in monkey skin *in vivo* and in human skin *in vitro*. Radiolabelled arsenic was mixed with Yolo County 65-California-57-8 soil at two concentrations: 0.001 mg/kg and 15 mg/kg. The soil retained by an 80-mesh sieve was 26% sand, 26% clay, 48% silt, and 0.9% organic matter. Soil load on the skin was 40 mg/cm^2. For each dose of arsenic, four female Rhesus monkeys were administered the arsenic containing soil on abdominal skin. The area was covered with a nonocclusive cover. After 24 hours, the soil was removed from the skin, and the area was washed with soap and water. Urine was collected for 7 days. *In vivo* percutaneous absorption was determined by the ratio of urinary excretion following topical administration to that following intravenous administration. Percutaneous absorption of arsenic from soil was 4.5 +/- 3.2% from the low dose and 3.2 +/- 1.9% from the high dose. Soap and water washes removed most of the admistered dose after the 24 hour exposure period.

Percutaneous absorption was also measured in viable human cadaver skin dermatomed to 500 um. The skin was preserved and used within five days of collection. Measurements were taken in triplicate for each of three skin samples. The arsenic dose was 0.001 mg/kg and the soil loading was 40 mg/cm^2. After a 24-hour exposure period, the amount of arsenic present in the receptor fluid (phosphate buffered saline) plus the amount in the skin that was not removed by a surface wash was 0.76% of the administered dose.

The dermal-soil RAF is calculated by using all three results from Wester, *et al*. (1993):

4.5% monkey *in vivo*, low dose
3.2% monkey *in vivo*, high dose
0.8% human *in vitro,* low dose

The average fractional absorption over 24 hours is 2.8%. Typical exposures at industrial sites are not 24 hours in length. Thus, the above data are prorated to a more reasonable exposure period of 8 hours. The average fractional absorption over 8 hours is 0.94%. The 90th percentile of the dermal-soil RAF is 0.01 (calculated from the full distribution of results using @RISK® software and assuming data are normal).

5.4 Summary

Oral-Soil RAFs, Arsenic:
The RAF value of 0.16 from Roberts, *et al*. (2002) will be used as a conservative point estimate in the deterministic risk assessment, while the full distribution of arsenic RAF values (generated using the mean and standard deviation for the wood-treating site from Roberts, *et al*. (2002)) will be used in the probabilistic risk assessment. Figure 7 displays the cumulative probability distribution of RAFs for oral exposure to arsenic in soil.

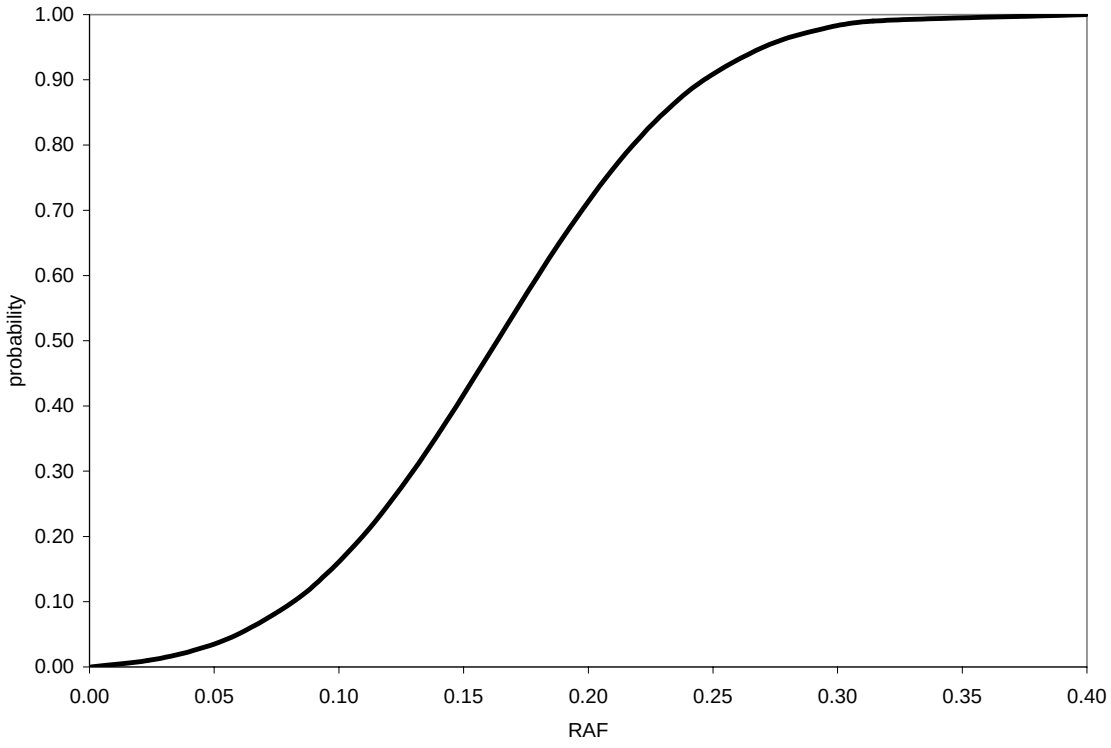

FIGURE 7
DISTRIBUTION OF ORAL-SOIL RAFs FOR ARSENIC

Dermal-Soil RAFs, Arsenic:
The 90th percentile arsenic RAF value of 0.01 will be used as a conservative point estimates in the deterministic risk assessment, while the full distribution of arsenic RAF values will be used in the probabilistic risk assessment. Figure 8 displays the cumulative probability distribution of RAFs for dermal exposure to arsenic in soil.

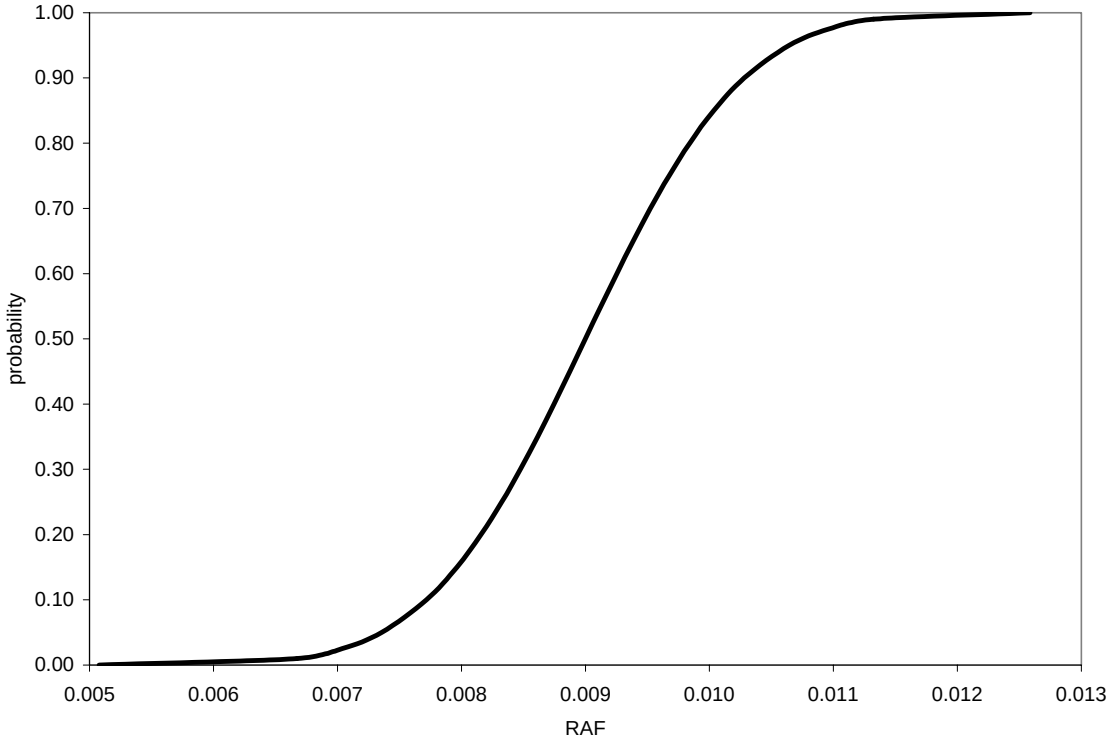

FIGURE 8
DISTRIBUTION OF DERMAL-SOIL RAFs FOR ARSENIC

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Appendix H

Deterministic Potential Risk Calculations

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Process Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site	unitless	1
SA	Soil Dermal Contact Skin Exposed	cm2/d	1533
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.168
EF	Soil Exposure Frequency	d/y	250
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Process Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	3.02E+00	1.19E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	1E-06	3E-03	NA	NA	NA	7E-03	5E-08	1E-04	NA	NA	NA	NA	NA	NA	NA	3E-03
Arsenic	1.77E+02	6.97E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	7E-06	1E-05	2E-01	2E-05	6E-02	1E-02	1E-06	2E-06	1E-02	4E-06	1E-02	1E+00	4E-07	4E-13	1E+00	NA	NA	1E-05	8E-02
Chromium	2.77E+02	1.09E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	1E-04	8E-05	NA	NA	NA	9E-02	6E-05	4E-05	NA	NA	NA	NA	NA	NA	NA	1E-04
Lead	8.35E+01	3.29E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.36E-01	2.90E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	4E-09	5E-05	NA	NA
Benzo(a)pyrene	2.88E+01	1.14E-06	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	2E-06	2E-05	8E-01	1E-05	3E-04	3E-02	8E-07	6E-06	2E-01	1E-05	4E-04	1E+00	6E-08	2E-07	1E+00	2E-07	6E-06	2E-05	7E-04
Carbazole	1.10E+00	4.32E-08	NA	NA	2.00E-02	2.00E-02	1E+00	2E-07	3E-09	1E+00	NA	NA	1E+00	8E-07	2E-08	1E+00	NA	NA	1E+00	2E-09	5E-11	1E+00	NA	NA	2E-08	NA
2-Methylnaphthalene	1.18E+02	4.67E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	4E-05	1E-02	NA	NA	NA	2E-01	5E-05	1E-02	NA	NA	NA	1E+00	NA	NA	NA	2E-02
Naphthalene	2.03E+01	7.99E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	7E-06	3E-04	NA	NA	NA	2E-01	8E-06	4E-04	NA	NA	NA	1E+00	1E-07	1E-04	NA	9E-04
Pentachlorophenol	7.91E+01	3.12E-06	3.00E-02	NA	1.20E-01	NA	9E-01	1E-05	1E-06	9E-01	3E-05	1E-03	5E-02	3E-06	3E-07	5E-02	8E-06	3E-04	1E+00	NA	NA	1E+00	NA	NA	2E-06	1E-03
2,3,7,8-TCDD	2.33E-02	9.19E-10	NA	NA	1.50E+05	1.50E+05	5E-01	2E-09	3E-04	NA	NA	NA	8E-02	1E-09	2E-04	NA	NA	NA	6E-01	3E-11	4E-06	NA	NA	NA	5E-04	NA
Total									3E-04			8E-02			2E-04			3E-02			4E-06			2E-04	5E-04	1E-01

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Boiler Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		1
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	250
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Boiler Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.20E+00	4.71E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	5E-07	1E-03	NA	NA	NA	7E-03	4E-08	9E-05	NA	NA	NA	NA	NA	NA	NA	1E-03
Arsenic	6.03E+01	2.38E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-06	3E-06	2E-01	7E-06	2E-02	1E-02	9E-07	1E-06	1E-02	3E-06	9E-03	1E+00	1E-07	2E-13	1E+00	NA	NA	5E-06	3E-02
Chromium	7.61E+01	3.00E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	3E-05	2E-05	NA	NA	NA	9E-02	3E-05	2E-05	NA	NA	NA	NA	NA	NA	NA	4E-05
Lead	1.44E+02	5.69E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.05E-01	2.78E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	4E-09	5E-05	NA	NA
Benzo(a)pyrene	7.11E+02	2.80E-05	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	6E-05	4E-04	8E-01	2E-04	8E-03	3E-02	4E-05	3E-04	2E-01	5E-04	2E-02	1E+00	1E-06	5E-06	1E+00	4E-06	1E-04	7E-04	3E-02
Carbazole	3.00E+00	1.18E-07	NA	NA	2.00E-02	2.00E-02	1E+00	4E-07	9E-09	1E+00	NA	NA	1E+00	4E-06	9E-08	1E+00	NA	NA	1E+00	6E-09	1E-10	1E+00	NA	NA	1E-07	NA
2-Methylnaphthalene	1.47E+02	5.81E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	5E-05	1E-02	NA	NA	NA	2E-01	1E-04	3E-02	NA	NA	NA	1E+00	NA	NA	NA	4E-02
Naphthalene	2.74E+01	1.08E-06	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	9E-06	5E-04	NA	NA	NA	2E-01	2E-05	1E-03	NA	NA	NA	1E+00	2E-07	2E-04	NA	2E-03
Pentachlorophenol	6.51E+01	2.56E-06	3.00E-02	NA	1.20E-01	NA	9E-01	9E-06	1E-06	9E-01	3E-05	9E-04	5E-02	4E-06	5E-07	5E-02	1E-05	4E-04	1E+00	NA	NA	1E+00	NA	NA	2E-06	1E-03
2,3,7,8-TCDD	1.42E-02	5.58E-10	NA	NA	1.50E+05	1.50E+05	5E-01	1E-09	2E-04	NA	NA	NA	8E-02	2E-09	2E-04	NA	NA	NA	6E-01	2E-11	2E-06	NA	NA	NA	4E-04	NA
Total									6E-04			5E-02			5E-04			5E-02			7E-06			4E-04	1E-03	1E-01

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Eastern Active Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		1
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	250
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

							Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	EPC Surface Soil Eastern Active Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.60E+00	6.31E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	7E-07	2E-03	NA	NA	NA	7E-03	5E-08	1E-04	NA	NA	NA	NA	NA	NA	NA	2E-03
Arsenic	1.17E+02	4.63E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	4E-06	7E-06	2E-01	1E-05	4E-02	1E-02	2E-06	3E-06	1E-02	5E-06	2E-02	1E+00	2E-07	3E-13	1E+00	NA	NA	9E-06	6E-02
Chromium	1.76E+02	6.94E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	8E-05	5E-05	NA	NA	NA	9E-02	7E-05	5E-05	NA	NA	NA	NA	NA	NA	NA	1E-04
Lead	4.33E+01	1.71E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	4.86E-01	1.91E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	3E-09	3E-05	NA	NA
Benzo(a)pyrene	1.32E+01	5.18E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	1E-06	8E-06	8E-01	5E-06	2E-04	3E-02	7E-07	5E-06	2E-01	1E-05	3E-04	1E+00	3E-08	8E-08	1E+00	8E-08	3E-06	1E-05	5E-04
Carbazole	5.60E-01	2.21E-08	NA	NA	2.00E-02	2.00E-02	1E+00	8E-08	2E-09	1E+00	NA	NA	1E+00	8E-07	2E-08	1E+00	NA	NA	1E+00	1E-09	2E-11	1E+00	NA	NA	2E-08	NA
2-Methylnaphthalene	3.44E+00	1.35E-07	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	1E-06	3E-04	NA	NA	NA	2E-01	3E-06	6E-04	NA	NA	NA	1E+00	NA	NA	NA	9E-04
Naphthalene	3.73E+00	1.47E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	1E-06	6E-05	NA	NA	NA	2E-01	3E-06	1E-04	NA	NA	NA	1E+00	2E-08	3E-05	NA	2E-04
Pentachlorophenol	4.73E+00	1.86E-07	3.00E-02	NA	1.20E-01	NA	9E-01	6E-07	8E-08	9E-01	2E-06	6E-05	5E-02	3E-07	4E-08	5E-02	9E-07	3E-05	1E+00	NA	NA	1E+00	NA	NA	1E-07	9E-05
2,3,7,8-TCDD	4.92E-03	1.94E-10	NA	NA	1.50E+05	1.50E+05	5E-01	4E-10	6E-05	NA	NA	NA	8E-02	6E-10	9E-05	NA	NA	NA	6E-01	6E-12	8E-07	NA	NA	NA	1E-04	NA
Total									7E-05			4E-02			9E-05			2E-02			9E-07			6E-05	2E-04	6E-02

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Northeast Grassed Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	100
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Northeast Grassed Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	2.36E+00	9.31E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	1E-07	3E-04	NA	NA	NA	7E-03	7E-09	2E-05	NA	NA	NA	NA	NA	NA	NA	3E-04
Arsenic	2.80E+02	1.10E-05	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	1E-06	2E-06	2E-01	3E-06	1E-02	1E-02	4E-07	6E-07	1E-02	1E-06	4E-03	1E+00	6E-08	7E-14	1E+00	NA	NA	2E-06	1E-02
Chromium	3.98E+02	1.57E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	2E-05	1E-05	NA	NA	NA	9E-02	2E-05	1E-05	NA	NA	NA	NA	NA	NA	NA	2E-05
Lead	4.62E+01	1.82E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.52E+00	6.00E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	9E-10	1E-05	NA	NA
Benzo(a)pyrene	1.44E+01	5.67E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	1E-07	8E-07	8E-01	5E-07	2E-05	3E-02	7E-08	5E-07	2E-01	1E-06	3E-05	1E+00	3E-09	9E-09	1E+00	9E-09	3E-07	1E-06	5E-05
Carbazole	1.44E+00	5.69E-08	NA	NA	2.00E-02	2.00E-02	1E+00	2E-08	4E-10	1E+00	NA	NA	1E+00	2E-07	4E-09	1E+00	NA	NA	1E+00	3E-10	6E-12	1E+00	NA	NA	5E-09	NA
2-Methylnaphthalene	2.73E-01	1.07E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	9E-09	2E-06	NA	NA	NA	2E-01	2E-08	5E-06	NA	NA	NA	1E+00	NA	NA	NA	7E-06
Naphthalene	3.78E-01	1.49E-08	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	1E-08	6E-07	NA	NA	NA	2E-01	3E-08	1E-06	NA	NA	NA	1E+00	2E-10	3E-07	NA	2E-06
Pentachlorophenol	5.55E+00	2.19E-07	3.00E-02	NA	1.20E-01	NA	9E-01	7E-08	9E-09	9E-01	2E-07	7E-06	5E-02	4E-08	4E-09	5E-02	1E-07	4E-06	1E+00	NA	NA	1E+00	NA	NA	1E-08	1E-05
2,3,7,8-TCDD	1.13E-02	4.47E-10	NA	NA	1.50E+05	1.50E+05	5E-01	8E-11	1E-05	NA	NA	NA	8E-02	1E-10	2E-05	NA	NA	NA	6E-01	1E-12	2E-07	NA	NA	NA	3E-05	NA
Total									2E-05			1E-02			2E-05			4E-03			2E-07			1E-05	4E-05	1E-02

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Northwest Grassed Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	100
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Northwest Grassed Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	9.01E+00	3.55E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	4E-07	1E-03	NA	NA	NA	7E-03	3E-08	7E-05	NA	NA	NA	NA	NA	NA	NA	1E-03
Arsenic	4.94E+01	1.95E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-07	3E-07	2E-01	5E-07	2E-03	1E-02	7E-08	1E-07	1E-02	2E-07	7E-04	1E+00	1E-08	1E-14	1E+00	NA	NA	4E-07	2E-03
Chromium	1.51E+01	5.97E-07	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	7E-07	4E-07	NA	NA	NA	9E-02	6E-07	4E-07	NA	NA	NA	NA	NA	NA	NA	8E-07
Lead	1.07E+02	4.22E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.96E-01	1.56E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	2E-10	3E-06	NA	NA
Benzo(a)pyrene	3.51E+00	1.38E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	3E-08	2E-07	8E-01	1E-07	4E-06	3E-02	2E-08	1E-07	2E-01	3E-07	9E-06	1E+00	7E-10	2E-09	1E+00	2E-09	7E-08	3E-07	1E-05
Carbazole	3.56E-01	1.40E-08	NA	NA	2.00E-02	2.00E-02	1E+00	5E-09	1E-10	1E+00	NA	NA	1E+00	5E-08	1E-09	1E+00	NA	NA	1E+00	7E-11	1E-12	1E+00	NA	NA	1E-09	NA
2-Methylnaphthalene	8.38E-01	3.30E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	3E-08	7E-06	NA	NA	NA	2E-01	6E-08	2E-05	NA	NA	NA	1E+00	NA	NA	NA	2E-05
Naphthalene	1.94E-01	7.65E-09	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	7E-09	3E-07	NA	NA	NA	2E-01	1E-08	7E-07	NA	NA	NA	1E+00	1E-10	1E-07	NA	1E-06
Pentachlorophenol	1.07E+00	4.20E-08	3.00E-02	NA	1.20E-01	NA	9E-01	1E-08	2E-09	9E-01	4E-08	1E-06	5E-02	7E-09	8E-10	5E-02	2E-08	7E-07	1E+00	NA	NA	1E+00	NA	NA	3E-09	2E-06
2,3,7,8-TCDD	1.05E-03	4.14E-11	NA	NA	1.50E+05	1.50E+05	5E-01	8E-12	1E-06	NA	NA	NA	8E-02	1E-11	2E-06	NA	NA	NA	6E-01	1E-13	2E-08	NA	NA	NA	3E-06	NA
Total									2E-06			3E-03			2E-06			8E-04			2E-08			3E-06	4E-06	4E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Southwest Wooded Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	100
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Southwest Wooded Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	2.32E+01	9.16E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	1E-06	3E-03	NA	NA	NA	7E-03	7E-08	2E-04	NA	NA	NA	NA	NA	NA	NA	3E-03
Arsenic	3.65E+02	1.44E-05	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	1E-06	2E-06	2E-01	4E-06	1E-02	1E-02	5E-07	8E-07	1E-02	2E-06	5E-03	1E+00	8E-08	9E-14	1E+00	NA	NA	3E-06	2E-02
Chromium	5.12E+02	2.02E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	2E-05	1E-05	NA	NA	NA	9E-02	2E-05	1E-05	NA	NA	NA	NA	NA	NA	NA	3E-05
Lead	7.70E+01	3.03E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	5.59E-01	2.20E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	3E-10	4E-06	NA	NA
Benzo(a)pyrene	8.39E+00	3.31E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	7E-08	5E-07	8E-01	3E-07	1E-05	3E-02	4E-08	3E-07	2E-01	6E-07	2E-05	1E+00	2E-09	5E-09	1E+00	5E-09	2E-07	8E-07	3E-05
Carbazole	3.92E-01	1.54E-08	NA	NA	2.00E-02	2.00E-02	1E+00	6E-09	1E-10	1E+00	NA	NA	1E+00	6E-08	1E-09	1E+00	NA	NA	1E+00	8E-11	2E-12	1E+00	NA	NA	1E-09	NA
2-Methylnaphthalene	8.14E-01	3.21E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	3E-08	7E-06	NA	NA	NA	2E-01	6E-08	1E-05	NA	NA	NA	1E+00	NA	NA	NA	2E-05
Naphthalene	2.40E-01	9.47E-09	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	8E-09	4E-07	NA	NA	NA	2E-01	2E-08	9E-07	NA	NA	NA	1E+00	1E-10	2E-07	NA	1E-06
Pentachlorophenol	2.74E+00	1.08E-07	3.00E-02	NA	1.20E-01	NA	9E-01	4E-08	4E-09	9E-01	1E-07	4E-06	5E-02	2E-08	2E-09	5E-02	5E-08	2E-06	1E+00	NA	NA	1E+00	NA	NA	7E-09	5E-06
2,3,7,8-TCDD	1.11E-03	4.39E-11	NA	NA	1.50E+05	1.50E+05	5E-01	8E-12	1E-06	NA	NA	NA	8E-02	1E-11	2E-06	NA	NA	NA	6E-01	1E-13	2E-08	NA	NA	NA	3E-06	NA
Total									4E-06			2E-02			3E-06			5E-03			2E-08			4E-06	7E-06	2E-02

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Soil
Western Active Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		1
SA	Soil Dermal Contact Skin Exposed	cm2/d	2373
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.206
EF	Soil Exposure Frequency	d/y	250
ED	Soil Exposure Duration	y	23.9
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.18
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

							Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	EPC Surface Soil Western Active Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	9.82E+00	3.87E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	4E-06	1E-02	NA	NA	NA	7E-03	3E-07	7E-04	NA	NA	NA	NA	NA	NA	NA	1E-02
Arsenic	5.29E+01	2.09E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-06	3E-06	2E-01	6E-06	2E-02	1E-02	8E-07	1E-06	1E-02	2E-06	8E-03	1E+00	1E-07	1E-13	1E+00	NA	NA	4E-06	3E-02
Chromium	5.88E+01	2.32E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	3E-05	2E-05	NA	NA	NA	9E-02	2E-05	2E-05	NA	NA	NA	NA	NA	NA	NA	3E-05
Lead	1.21E+02	4.77E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	4.42E-01	1.74E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	3E-09	3E-05	NA	NA
Benzo(a)pyrene	1.10E+01	4.31E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	9E-07	6E-06	8E-01	4E-06	1E-04	3E-02	5E-07	4E-06	2E-01	8E-06	3E-04	1E+00	2E-08	7E-08	1E+00	7E-08	2E-06	1E-05	4E-04
Carbazole	3.90E-01	1.54E-08	NA	NA	2.00E-02	2.00E-02	1E+00	6E-08	1E-09	1E+00	NA	NA	1E+00	6E-07	1E-08	1E+00	NA	NA	1E+00	8E-10	2E-11	1E+00	NA	NA	1E-08	NA
2-Methylnaphthalene	3.94E+00	1.55E-07	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	1E-06	3E-04	NA	NA	NA	2E-01	3E-06	7E-04	NA	NA	NA	1E+00	NA	NA	NA	1E-03
Naphthalene	1.40E+01	5.53E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	5E-06	2E-04	NA	NA	NA	2E-01	1E-05	5E-04	NA	NA	NA	1E+00	8E-08	1E-04	NA	8E-04
Pentachlorophenol	1.40E+01	5.53E-07	3.00E-02	NA	1.20E-01	NA	9E-01	2E-06	2E-07	9E-01	6E-06	2E-04	5E-02	9E-07	1E-07	5E-02	3E-06	9E-05	1E+00	NA	NA	1E+00	NA	NA	3E-07	3E-04
2,3,7,8-TCDD	4.13E-03	1.63E-10	NA	NA	1.50E+05	1.50E+05	5E-01	3E-10	5E-05	NA	NA	NA	8E-02	5E-10	7E-05	NA	NA	NA	6E-01	5E-12	7E-07	NA	NA	NA	1E-04	NA
Total									6E-05			3E-02			8E-05			1E-02			8E-07			1E-04	1E-04	4E-02

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Worker
Surface Sediment
Drainage Ditch
0-6 inches

Parameter	Definition	Units	Value
Irsediment	Sediment Ingestion Rate	mg/d	50
FI	Fraction of Exposure from Site		1
SA	Sediment Dermal Contact Ski	cm2/d	2373
AF	Sediment Dermal Contact Adl	mg/cm2	0.206
EF	Sediment Exposure Frequenc	d/y	1
ED	Sediment Exposure Duration	y	23.9
ATc	Sediment Averaging Time - C	d	25550
ATn	Sediment Averaging Time - N	d	8723.5
BW	Body Weight	kg	78.1
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

Compound	EPC Sediment Drainage Ditch 0-6 inches (mg/kg)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	Incidental Ingestion RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	Dermal Contact RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	Total PELCR (Sediment)	HI (Sediment)
Arsenic	2.09E+02	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	3E-08	5E-08	2E-01	9E-08	3E-04	1E-02	1E-08	2E-08	1E-02	4E-08	1E-04	6E-08	4E-04
Chromium	3.79E+02	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	7E-07	4E-07	NA	NA	NA	9E-02	6E-07	4E-07	NA	8E-07
Lead	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	8.55E-01	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.10E+01	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	3E-09	3E-08	8E-01	2E-08	5E-07	3E-02	2E-09	2E-08	2E-01	3E-08	1E-06	4E-08	2E-06
Pentachlorophenol	1.09E+00	3.00E-02	NA	1.20E-01	NA	9E-01	6E-10	7E-11	9E-01	2E-09	6E-08	5E-02	3E-10	3E-11	5E-02	8E-10	3E-08	1E-10	9E-08
2,3,7,8-TCDD	1.40E-03	NA	NA	1.50E+05	1.50E+05	5E-01	4E-13	6E-08	NA	NA	NA	8E-02	6E-13	1E-07	NA	NA	NA	2E-07	NA
Total								1E-07			3E-04			1E-07			1E-04	3E-07	4E-04

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Process Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	4
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Process Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	3.02E+00	1.19E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	2E-08	5E-05	NA	NA	NA	7E-03	9E-10	2E-06	NA	NA	NA	NA	NA	NA	NA	5E-05
Arsenic	1.77E+02	6.97E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	4E-08	6E-08	2E-01	3E-07	9E-04	1E-02	1E-08	2E-08	1E-02	8E-08	3E-04	1E+00	8E-10	1E-15	1E+00	NA	NA	7E-08	1E-03
Chromium	2.77E+02	1.09E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	2E-06	1E-06	NA	NA	NA	9E-02	1E-06	7E-07	NA	NA	NA	NA	NA	NA	NA	2E-06
Lead	8.35E+01	3.29E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.36E-01	2.90E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	2E-11	3E-07	NA	NA
Benzo(a)pyrene	2.88E+01	1.14E-06	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	1E-08	1E-07	8E-01	1E-07	5E-06	3E-02	6E-09	5E-08	2E-01	2E-07	7E-06	1E+00	1E-10	4E-10	1E+00	9E-10	3E-08	1E-07	1E-05
Carbazole	1.10E+00	4.32E-08	NA	NA	2.00E-02	2.00E-02	1E+00	1E-09	2E-11	1E+00	NA	NA	1E+00	7E-09	1E-10	1E+00	NA	NA	1E+00	5E-12	1E-13	1E+00	NA	NA	2E-10	NA
2-Methylnaphthalene	1.18E+02	4.67E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	6E-07	1E-04	NA	NA	NA	2E-01	9E-07	2E-04	NA	NA	NA	1E+00	NA	NA	NA	4E-04
Naphthalene	2.03E+01	7.99E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	1E-07	5E-06	NA	NA	NA	2E-01	2E-07	8E-06	NA	NA	NA	1E+00	6E-10	7E-07	NA	1E-05
Pentachlorophenol	7.91E+01	3.12E-06	3.00E-02	NA	1.20E-01	NA	9E-01	6E-08	7E-09	9E-01	4E-07	1E-05	5E-02	2E-08	3E-09	5E-02	2E-07	5E-06	1E+00	NA	NA	1E+00	NA	NA	1E-08	2E-05
2,3,7,8-TCDD	2.33E-02	9.19E-10	NA	NA	1.50E+05	1.50E+05	5E-01	1E-11	2E-06	NA	NA	NA	8E-02	1E-11	2E-06	NA	NA	NA	6E-01	6E-14	8E-09	NA	NA	NA	3E-06	NA
Total									2E-06			1E-03			2E-06			5E-04			9E-09			1E-06	4E-06	2E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Boiler Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Boiler Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.20E+00	4.71E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	2E-08	5E-05	NA	NA	NA	7E-03	1E-09	3E-06	NA	NA	NA	NA	NA	NA	NA	6E-05
Arsenic	6.03E+01	2.38E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	4E-08	6E-08	2E-01	3E-07	9E-04	1E-02	1E-08	2E-08	1E-02	8E-08	3E-04	1E+00	8E-10	1E-15	1E+00	NA	NA	8E-08	1E-03
Chromium	7.61E+01	3.00E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	1E-06	9E-07	NA	NA	NA	9E-02	9E-07	6E-07	NA	NA	NA	NA	NA	NA	NA	2E-06
Lead	1.44E+02	5.69E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	7.05E-01	2.78E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	6E-11	8E-07	NA	NA
Benzo(a)pyrene	7.11E+02	2.80E-05	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	1E-06	7E-06	8E-01	1E-05	3E-04	3E-02	5E-07	3E-06	2E-01	2E-05	5E-04	1E+00	9E-09	3E-08	1E+00	7E-08	2E-06	1E-05	9E-04
Carbazole	3.00E+00	1.18E-07	NA	NA	2.00E-02	2.00E-02	1E+00	8E-09	2E-10	1E+00	NA	NA	1E+00	6E-08	1E-09	1E+00	NA	NA	1E+00	4E-11	8E-13	1E+00	NA	NA	1E-09	NA
2-Methylnaphthalene	1.47E+02	5.81E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	2E-06	5E-04	NA	NA	NA	2E-01	3E-06	8E-04	NA	NA	NA	1E+00	NA	NA	NA	1E-03
Naphthalene	2.74E+01	1.08E-06	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	4E-07	2E-05	NA	NA	NA	2E-01	6E-07	3E-05	NA	NA	NA	1E+00	3E-09	3E-06	NA	5E-05
Pentachlorophenol	6.51E+01	2.56E-06	3.00E-02	NA	1.20E-01	NA	9E-01	2E-07	2E-08	9E-01	1E-06	4E-05	5E-02	6E-08	7E-09	5E-02	4E-07	1E-05	1E+00	NA	NA	1E+00	NA	NA	3E-08	5E-05
2,3,7,8-TCDD	1.42E-02	5.58E-10	NA	NA	1.50E+05	1.50E+05	5E-01	2E-11	3E-06	NA	NA	NA	8E-02	2E-11	3E-06	NA	NA	NA	6E-01	1E-13	2E-08	NA	NA	NA	6E-06	NA
Total									1E-05			2E-03			7E-06			2E-03			4E-08			6E-06	2E-05	4E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Eastern Active Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

							Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	EPC Surface Soil Eastern Active Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.60E+00	6.31E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	3E-08	7E-05	NA	NA	NA	7E-03	1E-09	4E-06	NA	NA	NA	NA	NA	NA	NA	8E-05
Arsenic	1.17E+02	4.63E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	8E-08	1E-07	2E-01	5E-07	2E-03	1E-02	2E-08	3E-08	1E-02	2E-07	5E-04	1E+00	2E-09	2E-15	1E+00	NA	NA	1E-07	2E-03
Chromium	1.76E+02	6.94E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	3E-06	2E-06	NA	NA	NA	9E-02	2E-06	1E-06	NA	NA	NA	NA	NA	NA	NA	4E-06
Lead	4.33E+01	1.71E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	4.86E-01	1.91E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	4E-11	5E-07	NA	NA
Benzo(a)pyrene	1.32E+01	5.18E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	2E-08	1E-07	8E-01	2E-07	6E-06	3E-02	9E-09	6E-08	2E-01	3E-07	1E-05	1E+00	2E-10	5E-10	1E+00	1E-09	4E-08	2E-07	2E-05
Carbazole	5.60E-01	2.21E-08	NA	NA	2.00E-02	2.00E-02	1E+00	1E-09	3E-11	1E+00	NA	NA	1E+00	1E-08	2E-10	1E+00	NA	NA	1E+00	7E-12	1E-13	1E+00	NA	NA	2E-10	NA
2-Methylnaphthalene	3.44E+00	1.35E-07	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	5E-08	1E-05	NA	NA	NA	2E-01	8E-08	2E-05	NA	NA	NA	1E+00	NA	NA	NA	3E-05
Naphthalene	3.73E+00	1.47E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	5E-08	3E-06	NA	NA	NA	2E-01	8E-08	4E-06	NA	NA	NA	1E+00	3E-10	4E-07	NA	7E-06
Pentachlorophenol	4.73E+00	1.86E-07	3.00E-02	NA	1.20E-01	NA	9E-01	1E-08	1E-09	9E-01	8E-08	3E-06	5E-02	4E-09	5E-10	5E-02	3E-08	9E-07	1E+00	NA	NA	1E+00	NA	NA	2E-09	4E-06
2,3,7,8-TCDD	4.92E-03	1.94E-10	NA	NA	1.50E+05	1.50E+05	5E-01	6E-12	1E-06	NA	NA	NA	8E-02	7E-12	1E-06	NA	NA	NA	6E-01	4E-14	5E-09	NA	NA	NA	2E-06	NA
Total									1E-06			2E-03			1E-06			6E-04			6E-09			1E-06	2E-06	2E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Northeast Grassed Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Northeast Grassed Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	2.36E+00	9.31E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	4E-08	1E-04	NA	NA	NA	7E-03	2E-09	6E-06	NA	NA	NA	NA	NA	NA	NA	1E-04
Arsenic	2.80E+02	1.10E-05	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-07	3E-07	2E-01	1E-06	4E-03	1E-02	5E-08	8E-08	1E-02	4E-07	1E-03	1E+00	4E-09	5E-15	1E+00	NA	NA	4E-07	5E-03
Chromium	3.98E+02	1.57E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	7E-06	5E-06	NA	NA	NA	9E-02	5E-06	3E-06	NA	NA	NA	NA	NA	NA	NA	8E-06
Lead	4.62E+01	1.82E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.52E+00	6.00E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	1E-10	2E-06	NA	NA
Benzo(a)pyrene	1.44E+01	5.67E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	2E-08	1E-07	8E-01	2E-07	7E-06	3E-02	9E-09	7E-08	2E-01	3E-07	1E-05	1E+00	2E-10	6E-10	1E+00	1E-09	4E-08	2E-07	2E-05
Carbazole	1.44E+00	5.69E-08	NA	NA	2.00E-02	2.00E-02	1E+00	4E-09	8E-11	1E+00	NA	NA	1E+00	3E-08	6E-10	1E+00	NA	NA	1E+00	2E-11	4E-13	1E+00	NA	NA	6E-10	NA
2-Methylnaphthalene	2.73E-01	1.07E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	4E-09	1E-06	NA	NA	NA	2E-01	6E-09	2E-06	NA	NA	NA	1E+00	NA	NA	NA	3E-06
Naphthalene	3.78E-01	1.49E-08	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	5E-09	3E-07	NA	NA	NA	2E-01	9E-09	4E-07	NA	NA	NA	1E+00	3E-11	4E-08	NA	7E-07
Pentachlorophenol	5.55E+00	2.19E-07	3.00E-02	NA	1.20E-01	NA	9E-01	1E-08	2E-09	9E-01	9E-08	3E-06	5E-02	5E-09	6E-10	5E-02	3E-08	1E-06	1E+00	NA	NA	1E+00	NA	NA	2E-09	4E-06
2,3,7,8-TCDD	1.13E-02	4.47E-10	NA	NA	1.50E+05	1.50E+05	5E-01	1E-11	2E-06	NA	NA	NA	8E-02	2E-11	3E-06	NA	NA	NA	6E-01	8E-14	1E-08	NA	NA	NA	5E-06	NA
Total									3E-06			4E-03			3E-06			1E-03			1E-08			2E-06	5E-06	6E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Northwest Grassed Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Northwest Grassed Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	9.01E+00	3.55E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	2E-07	4E-04	NA	NA	NA	7E-03	8E-09	2E-05	NA	NA	NA	NA	NA	NA	NA	4E-04
Arsenic	4.94E+01	1.95E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	3E-08	5E-08	2E-01	2E-07	7E-04	1E-02	9E-09	1E-08	1E-02	7E-08	2E-04	1E+00	7E-10	8E-16	1E+00	NA	NA	6E-08	1E-03
Chromium	1.51E+01	5.97E-07	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	3E-07	2E-07	NA	NA	NA	9E-02	2E-07	1E-07	NA	NA	NA	NA	NA	NA	NA	3E-07
Lead	1.07E+02	4.22E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.96E-01	1.56E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	4E-11	4E-07	NA	NA
Benzo(a)pyrene	3.51E+00	1.38E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	5E-09	4E-08	8E-01	5E-08	2E-06	3E-02	2E-09	2E-08	2E-01	8E-08	3E-06	1E+00	5E-11	1E-10	1E+00	3E-10	1E-08	5E-08	4E-06
Carbazole	3.56E-01	1.40E-08	NA	NA	2.00E-02	2.00E-02	1E+00	9E-10	2E-11	1E+00	NA	NA	1E+00	7E-09	1E-10	1E+00	NA	NA	1E+00	5E-12	9E-14	1E+00	NA	NA	2E-10	NA
2-Methylnaphthalene	8.38E-01	3.30E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	1E-08	3E-06	NA	NA	NA	2E-01	2E-08	5E-06	NA	NA	NA	1E+00	NA	NA	NA	8E-06
Naphthalene	1.94E-01	7.65E-09	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	3E-09	1E-07	NA	NA	NA	2E-01	4E-09	2E-07	NA	NA	NA	1E+00	2E-11	2E-08	NA	4E-07
Pentachlorophenol	1.07E+00	4.20E-08	3.00E-02	NA	1.20E-01	NA	9E-01	2E-09	3E-10	9E-01	2E-08	6E-07	5E-02	9E-10	1E-10	5E-02	6E-09	2E-07	1E+00	NA	NA	1E+00	NA	NA	4E-10	8E-07
2,3,7,8-TCDD	1.05E-03	4.14E-11	NA	NA	1.50E+05	1.50E+05	5E-01	1E-12	2E-07	NA	NA	NA	8E-02	2E-12	2E-07	NA	NA	NA	6E-01	8E-15	1E-09	NA	NA	NA	4E-07	NA
Total									3E-07			1E-03			3E-07			2E-04			1E-09			5E-07	6E-07	1E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Southwest Wooded Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC						Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	Surface Soil Southwest Wooded Area 0-6 inches (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	2.32E+01	9.16E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	4E-07	1E-03	NA	NA	NA	7E-03	2E-08	5E-05	NA	NA	NA	NA	NA	NA	NA	1E-03
Arsenic	3.65E+02	1.44E-05	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-07	4E-07	2E-01	2E-06	5E-03	1E-02	7E-08	1E-07	1E-02	5E-07	2E-03	1E+00	5E-09	6E-15	1E+00	NA	NA	5E-07	7E-03
Chromium	5.12E+02	2.02E-05	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	9E-06	6E-06	NA	NA	NA	9E-02	6E-06	4E-06	NA	NA	NA	NA	NA	NA	NA	1E-05
Lead	7.70E+01	3.03E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	5.59E-01	2.20E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	5E-11	6E-07	NA	NA
Benzo(a)pyrene	8.39E+00	3.31E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	1E-08	8E-08	8E-01	1E-07	4E-06	3E-02	5E-09	4E-08	2E-01	2E-07	6E-06	1E+00	1E-10	3E-10	1E+00	8E-10	3E-08	1E-07	1E-05
Carbazole	3.92E-01	1.54E-08	NA	NA	2.00E-02	2.00E-02	1E+00	1E-09	2E-11	1E+00	NA	NA	1E+00	7E-09	1E-10	1E+00	NA	NA	1E+00	5E-12	1E-13	1E+00	NA	NA	2E-10	NA
2-Methylnaphthalene	8.14E-01	3.21E-08	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	1E-08	3E-06	NA	NA	NA	2E-01	2E-08	5E-06	NA	NA	NA	1E+00	NA	NA	NA	8E-06
Naphthalene	2.40E-01	9.47E-09	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	3E-09	2E-07	NA	NA	NA	2E-01	5E-09	3E-07	NA	NA	NA	1E+00	2E-11	3E-08	NA	5E-07
Pentachlorophenol	2.74E+00	1.08E-07	3.00E-02	NA	1.20E-01	NA	9E-01	6E-09	8E-10	9E-01	5E-08	2E-06	5E-02	2E-09	3E-10	5E-02	2E-08	5E-07	1E+00	NA	NA	1E+00	NA	NA	1E-09	2E-06
2,3,7,8-TCDD	1.11E-03	4.39E-11	NA	NA	1.50E+05	1.50E+05	5E-01	1E-12	2E-07	NA	NA	NA	8E-02	2E-12	3E-07	NA	NA	NA	6E-01	8E-15	1E-09	NA	NA	NA	5E-07	NA
Total									7E-07			7E-03			4E-07			2E-03			2E-09			7E-07	1E-06	8E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Soil
Western Active Area
0-6 inches

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Soil Dermal Contact Skin Exposed	cm2/d	5048
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.145
EF	Soil Exposure Frequency	d/y	12
ED	Soil Exposure Duration	y	10
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	1.6
ET	Exposure Time	hr/d	2
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC Surface Soil Western Active Area 0-6 inches	EPC					Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	(mg/kg)	Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	9.82E+00	3.87E-07	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	2E-07	4E-04	NA	NA	NA	7E-03	9E-09	2E-05	NA	NA	NA	NA	NA	NA	NA	5E-04
Arsenic	5.29E+01	2.09E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	3E-08	5E-08	2E-01	2E-07	8E-04	1E-02	1E-08	2E-08	1E-02	7E-08	2E-04	1E+00	7E-10	9E-16	1E+00	NA	NA	7E-08	1E-03
Chromium	5.88E+01	2.32E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	1E-06	7E-07	NA	NA	NA	9E-02	7E-07	5E-07	NA	NA	NA	NA	NA	NA	NA	1E-06
Lead	1.21E+02	4.77E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	4.42E-01	1.74E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	4E-11	5E-07	NA	NA
Benzo(a)pyrene	1.10E+01	4.31E-07	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	2E-08	1E-07	8E-01	2E-07	5E-06	3E-02	7E-09	5E-08	2E-01	2E-07	8E-06	1E+00	1E-10	4E-10	1E+00	1E-09	3E-08	2E-07	1E-05
Carbazole	3.90E-01	1.54E-08	NA	NA	2.00E-02	2.00E-02	1E+00	1E-09	2E-11	1E+00	NA	NA	1E+00	7E-09	1E-10	1E+00	NA	NA	1E+00	5E-12	1E-13	1E+00	NA	NA	2E-10	NA
2-Methylnaphthalene	3.94E+00	1.55E-07	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	6E-08	1E-05	NA	NA	NA	2E-01	9E-08	2E-05	NA	NA	NA	1E+00	NA	NA	NA	4E-05
Naphthalene	1.40E+01	5.53E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	2E-07	1E-05	NA	NA	NA	2E-01	3E-07	2E-05	NA	NA	NA	1E+00	1E-09	2E-06	NA	3E-05
Pentachlorophenol	1.40E+01	5.53E-07	3.00E-02	NA	1.20E-01	NA	9E-01	3E-08	4E-09	9E-01	2E-07	8E-06	5E-02	1E-08	1E-09	5E-02	8E-08	3E-06	1E+00	NA	NA	1E+00	NA	NA	5E-09	1E-05
2,3,7,8-TCDD	4.13E-03	1.63E-10	NA	NA	1.50E+05	1.50E+05	5E-01	5E-12	8E-07	NA	NA	NA	8E-02	6E-12	9E-07	NA	NA	NA	6E-01	3E-14	4E-09	NA	NA	NA	2E-06	NA
Total									1E-06			1E-03			1E-06			3E-04			5E-09			2E-06	2E-06	2E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
On-Site Trespasser
Surface Sediment
Drainage Ditch
0-6 inches

Parameter	Definition	Units	Value
Irsediment	Sediment Ingestion Rate	mg/d	100
FI	Fraction of Exposure from Site		0.25
SA	Sediment Dermal Contact Ski	cm2/d	5048
AF	Sediment Dermal Contact Adl	mg/cm2	0.145
EF	Sediment Exposure Frequenc	d/y	12
ED	Sediment Exposure Duration	y	10
ATc	Sediment Averaging Time - C	d	25550
ATn	Sediment Averaging Time - N	d	3650
BW	Body Weight	kg	45
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

	EPC					Incidental Ingestion						Dermal Contact						Total	
Compound	Sediment Drainage Ditch 0-6 inches (mg/kg)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	PELCR (Sediment)	HI (Sediment)
Arsenic	2.09E+02	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	1E-07	2E-07	2E-01	9E-07	3E-03	1E-02	4E-08	6E-08	1E-02	3E-07	9E-04	3E-07	4E-03
Chromium	3.79E+02	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	7E-06	5E-06	NA	NA	NA	9E-02	5E-06	3E-06	NA	8E-06
Lead	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	8.55E-01	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.10E+01	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	2E-08	1E-07	8E-01	2E-07	5E-06	3E-02	7E-09	5E-08	2E-01	2E-07	8E-06	2E-07	1E-05
Pentachlorophenol	1.09E+00	3.00E-02	NA	1.20E-01	NA	9E-01	3E-09	3E-10	9E-01	2E-08	6E-07	5E-02	9E-10	1E-10	5E-02	7E-09	2E-07	4E-10	8E-07
2,3,7,8-TCDD	1.40E-03	NA	NA	1.50E+05	1.50E+05	5E-01	2E-12	3E-07	NA	NA	NA	8E-02	2E-12	3E-07	NA	NA	NA	6E-07	NA
Total								6E-07			3E-03			4E-07			9E-04	1E-06	4E-03

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
Construction Worker
Surface & Subsurface Soil
Entire Site
0-6 Feet

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	118
FI	Fraction of Exposure from Site		1
SA	Soil Dermal Contact Skin Exposed	cm2/d	2478
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.14
EF	Soil Exposure Frequency	d/y	130
ED	Soil Exposure Duration	y	1
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.5
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	182
BW	Body Weight	kg	71.5
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$

$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$

$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$

$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$

$$HI_{der} = \frac{ADD_{der}}{RfD}$$

$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$

$$HI = HI_{ing} + HI_{der} + HI_{inh}$$

$$PELCR_{ing} = LADD_{ing} \times CSF$$

$$PELCR_{der} = LADD_{der} \times CSF$$

$$PELCR_{inh} = LADD_{inh} \times CSF$$

$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

							Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	EPC Surface & Subsurface Soil Entire Site 0-6 Feet (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.10E+00	4.35E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	1E-06	3E-03	NA	NA	NA	7E-03	3E-08	7E-05	NA	NA	NA	NA	NA	NA	NA	3E-03
Arsenic	3.74E+01	1.47E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	8E-08	1E-07	2E-01	1E-05	4E-02	1E-02	9E-09	1E-08	1E-02	1E-06	4E-03	1E+00	2E-09	3E-15	1E+00	NA	NA	1E-07	4E-02
Chromium	4.82E+01	1.90E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	6E-05	4E-05	NA	NA	NA	9E-02	2E-05	1E-05	NA	NA	NA	NA	NA	NA	NA	5E-05
Copper	4.30E+01	1.70E-06	3.70E-02	NA	NA	NA	NA	NA	NA	1E+00	5E-05	1E-03	NA	NA	NA	1E+00	1E-04	4E-03	NA	NA	NA	NA	NA	NA	NA	5E-03
Lead	9.43E+01	3.71E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.95E-01	1.55E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	3E-09	4E-05	NA	NA
Acenaphthene	6.26E+01	2.47E-06	6.00E-01	6.00E-01	NA	NA	NA	NA	NA	8E-01	6E-05	1E-04	NA	NA	NA	2E-01	4E-05	6E-05	NA	NA	NA	1E+00	5E-07	8E-07	NA	2E-04
Anthracene	7.75E+02	3.05E-05	3.00E+00	3.00E+00	NA	NA	NA	NA	NA	8E-01	7E-04	2E-04	NA	NA	NA	2E-01	5E-04	2E-04	NA	NA	NA	1E+00	6E-06	2E-06	NA	4E-04
Benzo(a)pyrene	3.19E+01	1.26E-06	3.00E-01	3.00E-01	7.30E+00	3.10E+00	5E-01	1E-07	1E-06	8E-01	3E-05	1E-04	3E-02	3E-08	2E-07	2E-01	2E-05	6E-05	1E+00	2E-09	6E-09	1E+00	3E-07	8E-07	1E-06	2E-04
Carbazole	1.97E+00	7.78E-08	NA	NA	2.00E-02	2.00E-02	1E+00	2E-08	3E-10	1E+00	NA	NA	1E+00	5E-08	1E-09	1E+00	NA	NA	1E+00	1E-10	2E-12	1E+00	NA	NA	1E-09	NA
Fluoranthene	2.21E+02	8.70E-06	4.00E-01	4.00E-01	NA	NA	NA	NA	NA	8E-01	2E-04	5E-04	NA	NA	NA	2E-01	1E-04	3E-04	NA	NA	NA	1E+00	2E-06	4E-06	NA	8E-04
Fluorene	7.06E+01	2.78E-06	4.00E-01	4.00E-01	NA	NA	NA	NA	NA	8E-01	6E-05	2E-04	NA	NA	NA	2E-01	4E-05	1E-04	NA	NA	NA	1E+00	6E-07	1E-06	NA	3E-04
2-Methylnaphthalene	1.16E+02	4.57E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	1E-04	3E-02	NA	NA	NA	2E-01	7E-05	2E-02	NA	NA	NA	1E+00	NA	NA	NA	4E-02
Naphthalene	2.13E+01	8.40E-07	2.00E-01	8.57E-04	NA	NA	NA	NA	NA	8E-01	2E-05	1E-04	NA	NA	NA	2E-01	1E-05	6E-05	NA	NA	NA	1E+00	2E-07	2E-04	NA	4E-04
Pentachlorophenol	6.13E+01	2.42E-06	3.00E-02	NA	1.20E-01	NA	9E-01	5E-07	6E-08	9E-01	7E-05	2E-03	5E-02	7E-08	8E-09	5E-02	1E-05	3E-04	1E+00	NA	NA	1E+00	NA	NA	6E-08	2E-03
Phenanthrene	1.80E+02	7.08E-06	3.00E-01	3.00E-01	NA	NA	NA	NA	NA	8E-01	2E-04	6E-04	NA	NA	NA	2E-01	1E-04	4E-04	NA	NA	NA	1E+00	1E-06	5E-06	NA	9E-04
Pyrene	1.21E+02	4.76E-06	3.00E-01	3.00E-01	NA	NA	NA	NA	NA	8E-01	1E-04	4E-04	NA	NA	NA	2E-01	7E-05	2E-04	NA	NA	NA	1E+00	1E-06	3E-06	NA	6E-04
2,3,7,8-TCDD	1.35E-02	5.30E-10	NA	NA	1.50E+05	1.50E+05	5E-01	6E-11	8E-06	NA	NA	NA	8E-02	3E-11	4E-06	NA	NA	NA	6E-01	4E-13	6E-08	NA	NA	NA	1E-05	NA
Total									1E-05			7E-02			4E-06			3E-02			7E-08			2E-04	1E-05	1E-01

NA - Not available
NC - Not calculated
ND - Not detected

Appendix H
Exposure and Potential Risk Estimates Associated With Soil Contact
Koppers, Inc. Wood-Treating Facility
Gainesville, Florida
Utility Worker
Surface & Subsurface Soil
Entire Site
0-6 Feet

Parameter	Definition	Units	Value
IRsoil	Soil Ingestion Rate	mg/d	330
FI	Fraction of Exposure from Site		1
SA	Soil Dermal Contact Skin Exposed	cm2/d	2478
AF	Soil Dermal Contact Adherence Rate	mg/cm2	0.24
EF	Soil Exposure Frequency	d/y	5
ED	Soil Exposure Duration	y	25
PM10	Respirable Particulate Concentration	mg/m3	0.0394
IR	Outdoor Air Inhalation Rate	m3/hour	2.5
ET	Exposure Time	hr/d	8
ATc	Soil Averaging Time - Cancer	d	25550
ATn	Soil Averaging Time - Non-Cancer	d	9125
BW	Body Weight	kg	71.5
CF	Conversion Factor	kg/mg	0.000001

$$C_{air} = C_{soil} \times PM_{10}$$
$$ADD_{ing} = \frac{C_{soil} \times CF \times IR_{soil} \times RAF_{os} \times EF \times ED \times FI}{AP \times BW}$$
$$ADD_{der} = \frac{C_{soil} \times CF \times SA \times AF \times RAF_{ds} \times EF \times ED \times FI}{AP \times BW}$$
$$ADD_{inh} = \frac{C_{air} \times IR \times RAF_{i} \times ET \times EF \times ED \times C}{AP \times BW}$$
$$HI_{ing} = \frac{ADD_{ing}}{RfD}$$
$$HI_{der} = \frac{ADD_{der}}{RfD}$$
$$HI_{inh} = \frac{ADD_{inh}}{RfD}$$
$$HI = HI_{ing} + HI_{der} + HI_{inh}$$
$$PELCR_{ing} = LADD_{ing} \times CSF$$
$$PELCR_{der} = LADD_{der} \times CSF$$
$$PELCR_{inh} = LADD_{inh} \times CSF$$
$$PELCR = PELCR_{ing} + PELCR_{der} + PELCR_{inh}$$

							Incidental Ingestion						Dermal Contact						Inhalation						Total	
Compound	EPC Surface & Subsurface Soil Entire Site 0-6 Feet (mg/kg)	EPC Fugitive Dust (mg/m3)	RfDo/d (mg/kg-d)	RfDi (mg/kg-d)	CSFo/d 1/(mg/kg-d)	CSFi 1/(mg/kg-d)	RAFosc	LADDing-c mg/kg-d	PELCRing	RAFosnc	ADDing-nc mg/kg-d	HIing	RAFdsc	LADDder-c mg/kg-d	PELCRder	RAFdsnc	ADDder-nc mg/kg-d	HIder	RAFisc	LADDinh-c mg/kg-d	PELCRinh	RAFisnc	ADDinh-nc mg/kg-d	Hiinh	PELCR (Soil)	HI (Soil)
Antimony	1.10E+00	4.35E-08	4.00E-04	NA	NA	NA	NA	NA	NA	1E+00	7E-08	2E-04	NA	NA	NA	7E-03	9E-10	2E-06	NA	NA	NA	NA	NA	NA	NA	2E-04
Arsenic	3.74E+01	1.47E-06	3.00E-04	NA	1.50E+00	1.23E-06	2E-01	2E-07	3E-07	2E-01	6E-07	2E-03	1E-02	2E-08	2E-08	1E-02	4E-08	1E-04	1E+00	2E-09	2E-15	1E+00	NA	NA	3E-07	2E-03
Chromium	4.82E+01	1.90E-06	1.50E+00	NA	NA	NA	NA	NA	NA	1E+00	3E-06	2E-06	NA	NA	NA	9E-02	5E-07	3E-07	NA	NA	NA	NA	NA	NA	NA	2E-06
Copper	4.30E+01	1.70E-06	3.70E-02	NA	NA	NA	NA	NA	NA	1E+00	3E-06	7E-05	NA	NA	NA	1E+00	5E-06	1E-04	NA	NA	NA	NA	NA	NA	NA	2E-04
Lead	9.43E+01	3.71E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	3.95E-01	1.55E-08	NA	8.57E-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1E+00	6E-11	7E-07	NA	NA
Acenaphthene	6.26E+01	2.47E-06	6.00E-02	6.00E-02	NA	NA	NA	NA	NA	8E-01	3E-06	5E-05	NA	NA	NA	2E-01	1E-06	2E-05	NA	NA	NA	1E+00	9E-09	2E-07	NA	7E-05
Anthracene	7.75E+02	3.05E-05	3.00E-01	3.00E-01	NA	NA	NA	NA	NA	8E-01	4E-05	1E-04	NA	NA	NA	2E-01	2E-05	5E-05	NA	NA	NA	1E+00	1E-07	4E-07	NA	2E-04
Benzo(a)pyrene	3.19E+01	1.26E-06	3.00E-02	3.00E-02	7.30E+00	3.10E+00	5E-01	4E-07	3E-06	8E-01	2E-06	5E-05	3E-02	4E-08	3E-07	2E-01	6E-07	2E-05	1E+00	2E-09	5E-09	1E+00	5E-09	2E-07	3E-06	7E-05
Carbazole	1.97E+00	7.78E-08	NA	NA	2.00E-02	2.00E-02	1E+00	4E-08	9E-10	1E+00	NA	NA	1E+00	8E-08	2E-09	1E+00	NA	NA	1E+00	1E-10	2E-12	1E+00	NA	NA	2E-09	NA
Fluoranthene	2.21E+02	8.70E-06	4.00E-02	4.00E-02	NA	NA	NA	NA	NA	8E-01	1E-05	3E-04	NA	NA	NA	2E-01	4E-06	1E-04	NA	NA	NA	1E+00	3E-08	8E-07	NA	4E-04
Fluorene	7.06E+01	2.78E-06	4.00E-02	4.00E-02	NA	NA	NA	NA	NA	8E-01	3E-06	9E-05	NA	NA	NA	2E-01	1E-06	3E-05	NA	NA	NA	1E+00	1E-08	3E-07	NA	1E-04
2-Methylnaphthalene	1.16E+02	4.57E-06	4.00E-03	NA	NA	NA	NA	NA	NA	8E-01	6E-06	1E-03	NA	NA	NA	2E-01	2E-06	6E-04	NA	NA	NA	1E+00	NA	NA	NA	2E-03
Naphthalene	2.13E+01	8.40E-07	2.00E-02	8.57E-04	NA	NA	NA	NA	NA	8E-01	1E-06	5E-05	NA	NA	NA	2E-01	4E-07	2E-05	NA	NA	NA	1E+00	3E-09	4E-06	NA	8E-05
Pentachlorophenol	6.13E+01	2.42E-06	3.00E-02	NA	1.20E-01	NA	9E-01	1E-06	1E-07	9E-01	3E-06	1E-04	5E-02	1E-07	1E-08	5E-02	3E-07	1E-05	1E+00	NA	NA	1E+00	NA	NA	2E-07	1E-04
Phenanthrene	1.80E+02	7.08E-06	3.00E-02	3.00E-02	NA	NA	NA	NA	NA	8E-01	9E-06	3E-04	NA	NA	NA	2E-01	3E-06	1E-04	NA	NA	NA	1E+00	3E-08	9E-07	NA	4E-04
Pyrene	1.21E+02	4.76E-06	3.00E-02	3.00E-02	NA	NA	NA	NA	NA	8E-01	6E-06	2E-04	NA	NA	NA	2E-01	2E-06	8E-05	NA	NA	NA	1E+00	2E-08	6E-07	NA	3E-04
2,3,7,8-TCDD	1.35E-02	5.30E-10	NA	NA	1.50E+05	1.50E+05	5E-01	2E-10	2E-05	NA	NA	NA	8E-02	4E-11	6E-06	NA	NA	NA	6E-01	4E-13	6E-08	NA	NA	NA	3E-05	NA
Total									3E-05			5E-03			7E-06			1E-03			7E-08			8E-06	3E-05	6E-03

NA - Not available
NC - Not calculated
ND - Not detected